The Tensions of Strategic Communication Decision-Making: An Exploratory Examination of Theory and Practice

Robert S. Littlefield

1. Director and Professor, Nicholson School of Communication and Media, University of Central Florida, 500 West Livingston Street, Orlando, FL, USA

ABSTRACT

The Tensions of Strategic Communication Decision-Making (TSCD) is introduced as an applied theory describing the way decision-makers experience a risk or crisis and prioritize their strategic communication responses to maintain positive relationships with their publics. Relational Dialectics Theory is applied to illustrate how tensions between organizations and publics influence communication decisions. The strategic messages used by the World Health Organization regarding the Zika virus mega-crisis provide a backdrop illustrating how TSCD is enacted. Theoretical and practical implications for decision-making suggest that TSCD contributes to a more robust understanding of how the changing context in a crisis prompts the prioritization of strategic messages.

KEYWORDS: strategic communication, risk and crisis communication, decision-makers, dialectical tensions

When risk or crisis situations occur, organizations find themselves in the position of needing to respond. The means by which they choose to address these situations has been labeled risk or crisis communication. Broadly, communication scholars have identified and assessed the risk and crisis communication used by organizations to reestablish or improve their image to recover from crises. Coombs and Holladay (1996) proposed, and Coombs (2007, 2012, 2013) further developed, a typology (Situational...
Crisis Communication Theory), suggesting that if crisis types were identified in particular stages, and crisis managers understood the kinds of crisis situations they were experiencing, their risk and crisis communication could be matched to the crisis type to enhance effectiveness. Benoit (1997, 2015, 2018) introduced, and subsequently expanded upon, image restoration/repair as the means to identify the different ways an entity could frame their crisis response and assess its effectiveness. Additionally, scholars have focused on the identification and assessment of particular risk and crisis communication choices made by organizations in crisis (e.g., Fearn-Banks, 2016; Seeger & Ulmer, 2002; Sellnow et al., 2009; Ulmer et al., 2018; Weick, 1993).

As would be expected, responses embodying best practices (Seeger, 2006) were determined to have helped organizations effectively manage their risk or crisis situations (Reierson et al., 2009; Seeger & Ulmer, 2002; Sellnow et al., 2009), while other research revealed ineffective communication choices resulting from a reliance on routine procedures, delayed response, or failure to take ownership, to name a few bad practices (e.g., Cummings, 1992; Farrell, 2015; Johnson, 2003). These and other studies analyzed risk and crisis situations after the fact and lacked a focus on the tensions that decision-makers within organizations experienced, no matter which communication strategy ultimately was chosen. This gap in addressing how decision-makers determine the communication strategies they choose to disseminate, and the call for “new approaches, theories, and insights about crisis and risk communication” (Liu, 2019, p. 9), is the focus of the present study exploring the processes of decision-making as a crisis situation unfolds.

The identification and interaction of tensions or choices for decision-makers, manifested in strategic messages created in response to risk or crisis situations, represents a discursive struggle, and is reflected in the prioritization of tensions through content. This discursive struggle reflects the change in prioritization within the strategic decision-making process that produces the communication disseminated from an organization as a crisis evolves. Understanding how decision-makers come to their choice of strategy is essential because it provides insight into the dynamic
context of a crisis as it moves from the pre-crisis phase to the post-crisis phase.

As such, the Tensions of Strategic Communication Decision-Making (TSCD) is introduced as an applied theory describing the way decision-makers experience a risk or crisis situation and prioritize the competing tensions shaping their strategic communication responses in order to maintain positive relationships between themselves and their publics. In this essay, the theoretical origins of TSCD are presented, followed by the tenets and conditions of TSCD. Using the strategic communication responses of the World Health Organization to the Zika virus, the utility of TSCD is revealed, followed by discussion and directions for future research.

**Theoretical Grounding**

**Decision-Making**

When a crisis presents itself, organizations and entities are confronted with a set of circumstances and must respond accordingly. The decision-makers in these circumstances can rely upon communication scholars to provide them with recommendations about what form of risk and crisis communication they should use to maximize their mitigation efforts. Reynolds and Seeger (2005) introduced Crisis Emergency Risk Communication as a model whereby publics could be educated, behaviors changed, information and warnings made, and publics ultimately would be prepared. Other scholars have offered similar strategies found to be successful in particular crisis situations (e.g., Avery, 2019; Bakker et al., 2019; Dowell, 2016; Stern, 2003), and have addressed the need for organizations to understand the kinds of crises they are confronting to select the matching persuasive tactics (Gribas et al., 2018). However, what has been lacking in these studies is a focus on the dynamics of the decision-making process, particularly what happens when the crisis changes after the initial communication strategy has been introduced.

Some argue that a crisis becomes a threat to an organization when its decision-makers have not anticipated the
situation (Hermann & Dayton, 2009; Stern, 2003). For example, if decision-makers anticipate a crisis, they will have more time to engage others and be innovative in their response. If there is no time, decision-makers will follow their reflexes and reach closure quickly about how to manage the crisis. What research has suggested is that instead of exploring a range of alternatives, policymakers:

are more likely to focus on one or two options rather than to explore a range of possible alternatives . . . and are likely to become involved in a number of credibility traps that limit their effectiveness with the media and public. (Hermann & Dayton, 2009, p. 238)

There are organizational risks if policymakers fail to consider the decision-making process before a crisis emerges. Those who do not consider the dynamic nature of a crisis and the process of determining a range of strategic communication choices are more likely to be ineffective in maintaining positive relationships (Gribas et al., 2018). Research shows that decision-makers have strong cognitive biases (e.g., overconfidence, confirmation bias, and reliance on groupthink) that discourage them from thinking about risk and crisis situations until they happen (Kaplan & Mikes, 2012). These decision-makers run the risk of not being able to adjust their communication strategies as the situation changes because they have not considered their crisis response as a dynamic process (Boin et al., 2005).

Additionally, research has not explored what happens when crises change after an initial communication response has been implemented. Within risk and crisis communication, no theory or explanation identifies the interplay or forces affecting the decision-making process. Decision theory is closest to what is occurring within an organization as management and leaders are “counseling . . . to make the most effective decision” (Fearn-Banks, 2016, p. 19). The focus on identifying the communication strategies considered as best practices has neglected the matter of how the decision-makers arrived at decisions as they experienced the stages of the crisis.
Identification of Tensions

The Tensions of Strategic Communication Decision-Making (TSCD) evolved from Relational Dialectics Theory (RDT). As Baxter (1990) described, tensions represent oppositional forces in an interpersonal relationship (e.g., closedness-openness, autonomy-connection, predictability-novelty), whose interaction can enable the individuals involved to maintain the relationship over time. Baxter and Simon (1993) clarified: “The natural path for all relationships is one of pressure toward change which results from the dynamic tensions of simultaneous opposing forces” (p. 226). Simply put, as the dynamic of a relationship changes, both parties need to adjust behaviors for relational maintenance.

Regarding the current study, Baxter (2011) broadened the application of RDT to clarify that discourses include competing themes within the message. Thus, “objects of analysis are the discourses” (Baxter, 2011, p. 18). This characterization of discursive struggle and competing discourses suggests that tensions may be regarded as competing themes to be prioritized within the construction of a crisis message.

In contrast to interpersonal relationships, Mumby (2005) approached dialectical tensions by identifying the vantage point of oppositional forces as they appeared in organizational settings. He based his views on the work of scholars who established conditions by which the tensions and contradictions could be viewed interactively. As Mumby (2005) clarified: “With its focus on the indeterminacy of organizational meanings and practices, dialectics refuses a monologic reading that reifies practice as either resistant or dominant” (p. 38).

Mumby (2005) further extended RDT, examining its function in risk and crisis situations between organizations and their publics. These external relationships, “intersect in the moment to moment to produce complex and often contradictory dynamics of control and resistance” (Mumby, 2005, p. 21) and reflect similar oppositional forces, herein after referred to as tensions. These tensions manifest themselves when a risk or crisis occurs and present the decision-makers with a range of choices about how to respond. To explore these oppositional forces, Littlefield et al. (2012) identified
seven tensions affecting relationships between organizations and their publics when confronting risk and crisis situations. Littlefield and Sellnow (2015) called for further examination of the interaction of these tensions as a discursive struggle, as clarified by Baxter (2011) in the prioritization of the tensions within the ordering of the message.

The Use and Interaction of Tensions on Strategic Communication

In the context of risk and crisis communication, the relationship between an organization and its publics is maintained through strategic communication choices. As Seeger (2006) summarized, best practices are strategic choices found to be consistently helpful in navigating the relationship between organizations and their publics during risk and crisis events. However, our understanding of these best practices expands by contending that their selection and use does not occur randomly. Rather, such selection is prompted by the identification and prioritization of tensions that arise during a risk or crisis. What follows are two propositions and their undergirding conditions that make up the tenets of the TSCD.

Proposition 1. Risk and crisis situations prompt dialectical tensions for decision-makers seeking to prevent or mitigate harm to themselves, their organization, or to their publics.

Existing typologies reflect the model whereby risk and crisis situations occur, and organizations respond with communication strategies to mitigate the crisis. As an example, Coombs and Holladay (2002) demonstrated through SCCT that crisis types influence the selection of particular response strategies used to protect an organization’s reputation. This view later enabled Coombs (2014), and other scholars, to determine the effectiveness of strategies, but offered little insight into how the decision-makers arrived at the strategies they ultimately used. Similarly, as the dynamics of a
crisis change, the initial strategy used by an organization may need modification. The introduction of dialectical tensions into the model enables the decision-maker to modify an initial response based upon the prioritization of these tensions.

**Condition 1.** Dialectical tensions prompted by the risk and crisis are identifiable, mutually exclusive, interactive, and measurable on continuums representing oppositional dimensions.

When crises occur, seven identifiable tensions emerge for decision-makers as they consider their responses (Littlefield et al., 2012). These tensions are mutually exclusive in that they utilize specific vocabulary pertaining to their point of focus. For example, timeliness pertains to the point in a crisis when the decision-makers weigh when to present information to various publics. Similarly, tensions are interactive because one tension may supersede another. It follows that the interaction of timeliness and level of certainty might play out in the case where a CEO delayed the timing of a press conference due to uncertainty about information confirming whether the organization was responsible for the crisis. Finally, the tensions are measurable on continuums representing oppositional dimensions (e.g., full or partial disclosure of information to little or no disclosure).

**Condition 2.** Tensions are not inherently prioritized for decision-makers in risk and crisis situations.

The presence of seven tensions does not prioritize their level of importance because each risk or crisis is unique. Thus, when a crisis occurs, all the tensions are present in no apparent order. Each of the tensions poses a question for the decision-makers that must be addressed. The nature of the crisis will influence the way decision-makers choose to prioritize content strategically in the construction of their messages. The prioritization of tensions constitutes what Baxter (2011) described as “the interplay of competing discourses” (p. 18).
## TABLE 1  Seven Tensions for Strategic Communication Decision-Making

| Dialectical Tension | Continuum Anchors       | Description                                                                                                                                 |
|---------------------|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Timeliness          | Immediate to Never      | Immediate: Messages are presented to publics upon learning information. Never: Messages are not presented after a period of time.               |
| Amount of Information| Everything to Nothing   | Everything: Available information is fully disclosed to publics. Nothing: Available information is kept from the publics.                       |
| Certainty of Information| Verified to Unverified | Verified: Organization expresses certainty of the information revealed to the publics. Unverified: Organization expresses uncertainty of the information revealed to the publics. |
| Interest            | Self-interest to Concern for Others | Self-interest: Message reflects a focus on prioritizing the interests of the organization over the interests of the publics. Concern for others: Message reflects a focus on prioritizing the interests of the publics over the interests of the organization. |
| Control of the Narrative | Total Control to No Control | Total Control: Organization maintains control of the messages/narratives in the media. No Control: There are multiple voices in the media. |
| Emotional Connection | Total Connection to No Connection | Total Connection: Messages reflect a level of full sensitivity to the publics. No Connection: Messages reflect no level of sensitivity to the publics. |
| Level of Responsibility | All to None            | All: Organization claims full responsibility for the crisis. None: Organization denies responsibility for the crisis.                           |
| Best Practices                                      | Tensions                          | Questions to Consider                                                                 |
|----------------------------------------------------|-----------------------------------|---------------------------------------------------------------------------------------|
| Meeting the needs of the media                      | Timeliness                        | When should the organization be releasing information about the crisis to the media and the public? |
| Being accessible                                    |                                   | How much information should the organization reveal to the media and the public?       |
|                                                    | Amount of information              | How much control of the crisis response narrative can the organization maintain through one or more spokespeople? |
|                                                    | Control of the narrative           |                                                                                       |
| Accepting uncertainty and ambiguity                 | Confidence in information         | How certain is the organization about the information to be revealed to the public?   |
| Collaborating and coordinating with credible sources|                                   |                                                                                       |
| Hearing and understanding public's concerns        | Prioritization of interest        | Whose interest—the organization's or the public's—should be prioritized as the crisis is managed? |
| Fostering partnerships                              | Level of responsibility           | How much responsibility should the organization take for causing the crisis?          |
| Pre-event planning and preparedness                 | Emotional connection              | How much of an emotional connection should the organization maintain with the public? |
| Viewing risk and crisis communication as process    |                                   |                                                                                       |
| Hearing and understanding public's concerns        |                                   |                                                                                       |
| Being candid, open, and honest with the public      |                                   |                                                                                       |
Condition 3. Tensions may cluster and intensify based upon the complexity of the crisis.

While condition 2 suggests that every crisis prompts the emergence of tensions for decision-makers, tensions may cluster, resulting in a discursive struggle for prioritization. For example, when information about a crisis becomes available, the amount of information to be presented and who should present the information may prompt prioritization. Later, once the decision-makers are more certain about the cause of the crisis, the tensions comprising level of responsibility, level of interest, and emotional connection may cluster to reflect the interplay of discourses necessary to demonstrate the level of concern expressed by the organization for the publics impacted by a crisis. These clusters may present themselves at any time during the management of the crisis as decision-makers navigate their relationship with various publics.

Proposition 2. Strategic communication responses enacted by organizations are outcomes of the dialectical tensions identified and prioritized by decision-makers and acted upon by publics in risk and crisis situations.

As risk and crisis situations occur, decision-makers have the capacity to frame how their messages are crafted in response to changing contexts. For example, Benoit’s (2015) image repair typology provided a means by which messages could be created in order to frame how they would be received (e.g., mortification, corrective action). Depending upon the context, decision-makers make choices, like how Goffman (1974) characterized and prioritized primary and social frameworks.

McCombs and Shaw (1972) labeled this prioritization process for the mass media as “the agenda-setting function” (p. 176). Through agenda-setting, the media not only provide information (primary framework) for the publics, but also through their placement of the information (social frameworks), determine its importance. Similarly, in the context of risk and crisis, decision-makers have the capacity to frame how their strategic messages are crafted for publics in response to changing contexts. It is in response to how publics respond to messages that Perelman and
Olbrechts-Tyteca (1958/1971) identified the presence of universal and particular audiences. They suggested that with multiple publics, decision-makers must be conscious about how their messages may be perceived by all publics to determine their effectiveness.

**Condition 4.** The perceptions of decision-makers about the prioritization of competing discourses may shift during a crisis resulting in an interpenetration of tensions reflecting the decision-makers’ use of the central issue of power (dominant to marginal) to prioritize message content.

In the pre-crisis phase, strategic decision-makers may respond with messages to prevent or control a crisis from materializing. For example, to discourage people from spreading a contagious virus, public health decision-makers initially may use an interplay of the Surgeon General (prioritizing the control of the narrative) providing information (prioritizing the amount of information) demonstrating certainty about the relationship of wearing a mask and social distancing to the prevention of spreading the virus (prioritizing the level of certainty). However, once a virus has been detected within a population, public health officials may marginalize their earlier discourses that emphasized early prevention and treatment (prioritizing timeliness), suggesting ways to deal with the effects of the virus (prioritizing the level of interest), and showing sensitivity toward the patients and families of victims of the virus (prioritizing their emotional connection).

**Condition 5.** The utilization of the best practices of risk and crisis communication enhances public perceptions of the strategic communication and the management of the risk and crisis.

Seeger (2006) and others suggested that when organizations utilize best practices, the affected publics perceive their efforts more positively (McKnight & Linnenluecke, 2016; Veil et al., 2020). Thus, decision-makers may respond to the tensions by choosing, from among the best practices, those that are primarily audience-focused (Littlefield, 2013) (See Table 2). For example, being accessible to the media and publics is a best practice associated with timeliness, amount of information, and level of certainty.
Being empathetic and sincere with publics is associated with the focus of interest and emotional connection.

**Condition 6.** The relational intent of the decision-makers toward publics modifies the prioritization of tensions and the implementation of strategic communication choices.

This condition presents itself when risk or crisis decision-makers initially may have chosen a communication strategy not well-received by publics. For example, decision-makers may not have prioritized the importance of controlling the narrative at the start of the crisis, allowing for the emergence of multiple spokespersons presenting conflicting information. Upon perceiving the deteriorating support of their position with affected publics, decision-makers may later prioritize the controlling of the narrative and identify one credible and respected authority to speak on their behalf.

These propositions and conditions constitute the Tensions of Strategic Communication Decision-Making (TSCD) and suggest that decision-makers identify particular tensions, prioritize the tensions within the themes of the discourse based upon the context of the risk or crisis situation, and respond with strategic communication choices based upon their prioritization. This strategic communication may represent a broad range of choices, with effectiveness determined by how well the messages are received and measured by the publics involved.

**Method**

To illustrate the descriptive power of TSCD, a case study approach using a contemporary mega-crisis was identified. Case studies commonly are used when studying risk and crisis situations (Sellnow et al., 2009). Additionally, Baxter (2011) supported qualitative or interpretive methods as appropriate to examine “the interplay of competing discourses” (p. 18) and called on researchers studying RDT to use “a variety of methods to understand both the culture and the relational history in which a [text] is embedded” (p. 159).

Some scholars have described mega-crises as large-scale events or risks that may create significant, ongoing, and even existential
threats to communities, groups, and organizations (Helsloot et al., 2012; Yen & Salmon, 2017). The Zika crisis was identified as the mega-crisis in the present study for several reasons. First, the Zika virus crossed geographic boundaries (Romero, 2016). In addition, Zika constituted an international public health emergency. Prior to the Zika virus, it was only the fourth time the WHO had issued such a warning (previous alerts were for Ebola, Swine Flu, and Polio), and the first time for a mosquito-borne illness (Vickery, 2016). Finally, the Zika virus represented a threat due to the absence of immunity in the whole of Latin America and the Caribbean (Duffy & Brasileiro, 2016).

**The Case**

The selected crisis—the Zika virus and its effect on humans, and especially pregnant women—provided a backdrop for an illustration of how decision-makers strategically responded in a crisis. The contextual background for this study was drawn from a Lexis-Nexis search of several hundred newspapers, magazines, and other online sources, beginning when the virus was first detected in 1947 until February 2016 when a state of crisis was declared in several Latin American countries, as well as in several parts of the United States of America. A total of 136 news articles were selected by removing duplicates and including only those that specifically included information pertinent to the emerging 2016 Zika virus on the American continents.

**Data Set**

The data set included public communication messages designated as “Disease Outbreak News” by the WHO on its official website, as the Zika virus was emerging as a major health crisis from October 2015 to February 2016. Baxter (2011) described this type of data as dialogically expansive because of the multiple themes or discourses interacting within the messages over time. Twenty-four official reports were collected from the WHO website during this period, with paragraphs serving as the unit of analysis. The number of paragraphs in each message ranged from two to 16 (M = 6 paragraphs per message).
Procedures
The 24 WHO messages were ordered chronologically to reveal the progression of strategic communication responses. The paragraphs in each message were numbered sequentially (1, 2, 3 . . .) following the agenda-setting technique known as the inverted pyramid style of writing whereby the most important information is placed first in the news story (Harrower, 2012). Each paragraph was coded by two researchers to identify the presence and level of one or more tensions in its content, along with how the content of each paragraph revealed dialectical tensions associated with elements of the conditions in Propositions 1 and 2. The coders found 100% agreement (Neuendorf, 2002) on the identification of all tensions, with the exception of the level of responsibility. In that case, the coders initially found 70% agreement. Subsequently, through discussion of the different levels (e.g., individual, state) consensus was achieved.

Content was noted by specific descriptors and coded accordingly. For example, if the data specified, “we wanted to get this information out immediately to the publics,” the data were coded as prioritizing timeliness. If the data specified, “we are unsure at this time about the cause of the birth defects of children born of women who contracted the virus,” the data were coded as marginalizing the level of certainty.

The 136 news articles providing contextual information about Zika virus were read by the lead researcher multiple times to identify elements associated with the conditions in Proposition 2. Those articles directly quoting individuals or official spokespersons were identified and their remarks were chosen as exemplars reflecting public opinion as reported by the media.

Results

Proposition 1. Condition 1
Proposition 1 claims that risk and crisis situations prompt dialectical tensions for decision-makers seeking to prevent or mitigate harm to themselves or to their publics. To validate this proposition, Condition 1 suggests that dialectical tensions are identifiable,
mutually exclusive, interactive, and measurable on continuums representing levels of oppositional dimensions. The data revealed evidence of the seven tensions in all 24 messages, where they were found to be mutually exclusive as evident by coder agreement, interactive by virtue of multiple tensions being identified in one or more paragraphs, and oppositional.

**Timeliness (Immediate to Never)**

All 24 messages included the immediacy of timeliness in their first paragraphs by citing the specific date when WHO identified a case of Zika virus, with 83.33% of the messages being published within 9 days of the specific date identified in paragraph 1. For example, a message published on January 27 cited January 23 in paragraph 1 (difference of 4 days) as the date when Zika was detected.

**Amount of Information (Everything to None)**

Sixteen of the messages included some amount of content in one or more paragraphs about the Zika virus and/or ways to prevent exposure, while eight provided no background information (e.g., history of the virus, where Zika had been clinically identified) or mitigation strategies (e.g., what people should wear or do to avoid contracting the virus).

**Certainty of Information (Verified to Unverified)**

All 24 messages included indicators of certainty by mentioning laboratory confirmed or unconfirmed cases of Zika. Nineteen (70.16%) prioritized laboratory confirmation of Zika in paragraph 1, with an additional 10 messages providing certainty in paragraph 2. Four messages included paragraphs mentioning varying levels of uncertainty related to the Zika virus. For example, “despite reports of a potential association between Zika virus and microcephaly (e.g., a rare neurological condition where a baby’s head is much smaller than expected) and other neurological disorders, a causal relationship between these events has not yet been confirmed” (WHO, 2016a).
Control of the Narrative (Total Control to No Control)

All 24 messages included paragraphs with WHO pronouncements, protocol, plans, or other authoritative recommendations. For example, WHO controlled the narrative by being the agency receiving reports identifying detection of the Zika virus infections. The use of the phrase, “WHO recommends . . . ” in more than half of the messages demonstrated the control WHO exercised regarding its strategic communication, and it was WHO that reported what was being done to counter or prevent the effects of Zika virus. One message referenced another agency—the Centers for Disease Control and Prevention (CDC)—as providing the confirmatory test to identify the presence of the Zika virus.

Level of Responsibility (All to None).

The messages included the identification of those entities who should be responsible for acting. Three messages prioritized the WHO as being responsible to oversee the detection and prevention activities of its member states and to provide technical orientation for appropriate pesticide use. Seventeen messages prioritized specific country governments (e.g., Brazil, Colombia, El Salvador) as being responsible to detect, prevent, and help with potential victims of the Zika virus. One message indicated that pregnant women were responsible for taking their own preventive action. Four messages did not place responsibility for action on any entity.

Focus of Interest (Self-Interest to Concern for Others).

In 23 of the messages, the content prioritized the focus of interest on those other than the decision-maker (WHO). In other words, the warnings were directed at potential victims of the Zika virus, particularly “people traveling to high risk areas, especially pregnant women,” young children, and the elderly (WHO, 2016a). Only one of the messages did not direct the focus of interest to self or others.

Emotional Connection (Total Connection to No Connection).

In this category, the identification of vulnerable groups, the use of language choices reflecting cultural sensitivity, and efforts to reach out to provide support for victims were prioritized in varying
degrees. Ten of the messages did not provide any mention of these elements. In fact, no emotional connection was offered in the first nine messages (October 21 to December 21, 2016) included in the data set. However, after this initial period, the subsequent 14 messages included varying levels of reference to vulnerable groups (especially pregnant women, children, and the elderly), areas of high risk (Central and South America), language sensitivity, and victim support.

**Proposition 1. Condition 2**

Condition 2 validates Proposition 1 by suggesting that responses to tensions are not inherently prioritized for decision-makers in risk and crisis situations. In the present study, content reflecting all seven tensions was found in the 24 messages under review. However, their prioritized placement varied in the messages as the spread of the virus increased. Specifically, when considering the content of the dominant discourses prioritized in the first paragraphs of the 24 messages, the following tensions were identified: Timeliness—100%, level of certainty—79%, level of responsibility—21%, amount of information—8%, and control of the narrative—4%. The discourses marginalized by omission in the first paragraphs included focus of interest and emotional connection. In contrast, even as the crisis progressed, the discourses associated with two tensions (control of the narrative—96% and focus of interest—33%) were marginalized until the last paragraphs of each of the 24 messages. Finally, the discourse associated with emotional connection consistently was marginalized to the final two paragraphs in 12 of the messages (50%).

**Proposition 1. Condition 3**

Condition 3 provides clarification for Proposition 1 by identifying that tensions cluster and change in priority prompted by the complexity of the crisis. The data revealed the clustering of tensions at all stages of the crisis under investigation. For example, at the beginning of the crisis, skepticism about the spread and implications of the Zika virus confronted decision-makers. This prompted the WHO to prioritize two tensions: getting the message out to
affected publics (timeliness) and providing verification that the Zika virus was being clinically detected (certainty). The dominance of these tensions prompted decision-makers to include up-to-date and scientifically confirmed content at or near the beginning of all 24 messages in the ongoing discourse of the WHO.

Because the priority for decision-makers was on timing and certainty, the emphasis on those groups being affected by the virus was marginalized by omission from the beginning of the messages. Thus, while the WHO messages always addressed the welfare of those who had contracted the Zika virus (focus of interest), the interplay of messages with specific references to vulnerable people (e.g., pregnant women, children born with microcephaly, people living in poverty) using culturally-sensitive strategies (emotional connection) took 2 months of changing contexts to become more prominent in the messages.

Proposition 2. Condition 4

Proposition 2 describes how the strategic communication responses enacted by organizations are prioritized by decision-makers and acted upon by publics in risk and crisis situations. In Condition 4, as the perceptions of decision-makers about the prioritization of tensions shifted, different strategic communication responses were enacted. For example, while the prioritization of immediacy resulted in the maintenance of a consistent communication strategy to get the information out as quickly as possible following the identification of the Zika virus in a particular area, the discourse associated with prioritizing the other-serving focus of interest shifted throughout the crisis.

In the pre-crisis stage, strategic communication responses were preventive. For example, following the WHO’s prioritization, pre-crisis messages came in the form of general warnings or suggested prevention strategies: “Public Health Agency of Canada . . . recommends that pregnant women discuss any travel plans with their health care providers” (Ubelacker, 2016). Later, when the crisis grew in scope and people continued to travel to high risk regions, the messages became more explicit: “These steps include wearing insect repellent, using air conditioning or window and
door screens to keep mosquitoes outside, wearing long pants and long-sleeved shirts when possible, and emptying standing water inside and outside the home” (“Washington: CDC warns,” 2016).

Regarding the prioritization of information to reveal how the Zika virus spread, as scientists became more certain, more specific information was forthcoming and placed earlier in the messages. For example, the initial transmission of the Zika virus was traced to the bite of the *Aedes aegypti* mosquito. This prompted the prioritization of that content in the messages (13 messages included this content in the first half of the paragraphs) to “reduce the mosquitoes that transmit this disease” (WHO, 2015b). When it was later detected that Zika could be transmitted through sexual intercourse (WHO, 2016b), content was prioritized to identify methods of birth control (e.g., abstinence, use of condoms).

**Proposition 2. Condition 5**

Condition 5 explains how Proposition 2 is acted upon by publics because the utilization of best practices enhances public perceptions of the prioritized strategic communication in risk and crisis situations. In the present study, the uncertainty associated with the Zika virus and microcephaly illustrated this relationship. As the connection between the Zika virus and microcephaly became more certain, women who were pregnant or were anticipating pregnancy became more anxious, as the following statement demonstrated: “All of the women I see at the hospital or in my office who are pregnant or wanting to get pregnant are very alarmed, almost panicky” (“Brazil fears birth defects,” 2016).

The extreme reactions of women prompted decision-makers to prioritize strategic messages reflecting the best practices of hearing and understanding publics’ concerns (tensions of emotional connection and prioritization of interest) and accepting uncertainty and ambiguity (tension of confidence in information). The WHO prioritized the following specific strategies: “To provide self-efficacy for those at risk or already infected with the Zika virus” (WHO, 2015d); to address the presence or absence of certainty (WHO, 2015c); and by withholding total certainty about the link between the Zika virus and microcephaly (Goodhue, 2016).
By foregrounding content about the confirmation process for publics, decision-makers enacted the best practice of being candid, open, and honest. Through collaboration and coordination with the CDC, WHO prioritized content supporting its advisory warning that travel should be postponed for pregnant women, or women anticipating pregnancy, due to the risk of a relationship between the virus and the birth defect. These warnings were heard, and people’s reactions were those of adherence (Umeha, 2016).

**Proposition 2. Condition 6**

Proposition 2 is understood further because in Condition 6 the relational intent of decision-makers with the publics modifies the interplay of tensions and the prioritization of strategic communication choices. In most cases, relational intent best can be described as helpful, hurtful, or neutral. Littlefield and Sellnow (2015) described these intents, suggesting that a neutral intent also may be hurtful when decision-makers do not respond to the tension of level of responsibility and take some form of action.

In the case of the Zika virus, all of the WHO messages except one prioritized a response to the tension of level of interest, with a focus on helping the publics to avoid contracting the virus and potentially affecting the health of unborn fetuses. In the one message where a neutral intent was coded, WHO identified geographic areas as the focus of interest, as the virus was “spreading geographically to previously unaffected areas” (WHO, 2016a).

Additionally, as the crisis intensified, the helpful content prioritized by the decision-makers shifted to respond to the potential health hazards for pregnant women and their unborn fetuses. For example, when prioritized content described the threat of the Zika as “virus consisting of mild fever, rash . . . , headaches, arthralgia, myalgia, asthenia, and non-purulent conjunctivitis, occurring three to twelve days after the mosquito vector bite” (WHO, 2015a), the discourses were designed to encourage women to delay or cancel travel to areas of risk. As more became known about the possible link between Zika and microcephaly, designing messages that prioritized the strategy of advising women to avoid pregnancy by abstinence or the use of contraceptives represented a more intrusive approach to controlling the spread of the
virus. This recommendation to avoid pregnancy was not valued universally, as it represented what decision-makers in the Catholic Church characterized as a hurtful intent (Partlow, 2016).

**Discussion**

The analysis of strategic communication decision-making during the Zika virus mega-crisis illustrates the utility of TSCD to enhance our understanding of the processes at work when decision-makers construct messages reflecting a discursive struggle during the ongoing phases of a risk or crisis event. The responses of WHO provided insight into how the crisis context likely influenced the prioritizing of messages reflecting the competing tensions. This application of TSCD provides theoretical and practical implications for scholars and risk and crisis decision-makers.

**Theoretical Implications**

This study fills a void in the literature by providing a clearer focus on the dynamics of the decision-making process in changing crisis situations after the initial communication strategies have been implemented. As Ha and Boynton (2014) suggested, the focus of research has rarely been on those who make the decisions even though crisis decisions are made by leaders in an environment of competing messages (Boin et al., 2005). By accounting for the tensions experienced by the decision-makers as they make sense of a crisis, this study contends that such an analysis reveals more clearly how organizational leaders prioritize the range of their communication choices when developing messages for different publics. In addition, a more robust understanding is possible regarding how strategic choices are made and modified throughout the phases of a crisis (Hermann & Dayton, 2009).

This unique application of the interpersonal relational dialectics theory to risk and crisis provides for a deeper understanding of how decision-makers must respond to a crisis as a dynamic event—whereby communication strategies must change as a result of changing circumstances—and organizations maintain or rebuild positive relationships with their publics. Through an
analysis of discursive messages prioritizing responses to prevent or mitigate a crisis, researchers can account for the prioritization and interplay of those tensions on changing messages as the crisis unfolds (Gribas et al., 2018).

The interplay of the competing discourses within messages and the necessary prioritization of decision-makers as they confront what Baxter (2011) labeled “turning points” or “moments of change” (p. 154), illustrate the complexity involved in the process of message creation in a dynamic context of crisis. Essentially, the changing crisis context prompts changes in the prioritization of discourses within the messages, just as the changing dynamics in an interpersonal relationship necessitate oppositional responses to alter the situation.

While the introduction of competing discourses prompts contradictory responses (Baxter, 2011), this study reinforces the position that competing discourses can be identified through content, and, thereby through placement, reflect the prioritization of the decision-maker for the publics. Through this interplay of the competing discourses, Baxter (2011) suggested that meaning is created. By focusing on the prioritization of discourses within risk or crisis messages, the processes of decision-making may be revealed more fully.

This study extends the theoretical understanding of decision-making by illustrating the dynamic discursive struggle of all seven tensions within the ongoing risk and crisis messages and the subsequent best practices used by decision-makers in risk or crisis contexts. Accepting Baxter’s (2011) broader characterization—that competing discourses within a message (e.g., tensions) may be the objects of analysis—enabled this study to use tensions as representations of discourses prioritized by decision-makers based upon where content addressing these tensions was placed within the messages. Particularly, the findings revealed the interactive nature of the tensions as their prioritization within the messages changed when the risk or crisis context moved through the crisis phases. By revealing the discursive struggle reflecting the prioritized tensions within the risk or crisis messages, this study helps scholars to understand the processes associated with decision-making within the changing context of a risk or crisis.
Practical Implications

This study offers several practical implications for risk and crisis communication scholars and decision-makers. Initially, TSCD provides a frame of reference for examining and organizing each of the seven tensions experienced by all decision-makers. In crisis situations, spokespeople such as Public Information Officers respond because, through communication, they can describe, interpret, and evaluate what is happening for their stakeholders and publics (Avery, 2019). Furthermore, understanding these tensions could help emergency managers and others develop crisis simulations and other drills to help better prepare crisis managers to communicate well during a crisis. As decision-makers create their strategic messages, they prioritize their competing discourses in the message based upon which tensions they perceive to be of greatest importance to the publics.

By using the continuums associated with each of the tensions, decision-makers prioritize the levels of openness or certainty, the amounts of information to share, and degrees to which they assumed responsibility, expressed concern, or directed their focus of interest. In addition, the interplay between the tensions is observable as the crisis evolves when certain tensions take precedence and are prioritized by the decision-makers in their strategic messages. By identifying tensions as discursive messages (Baxter, 2011), the TSCD theory provides clues regarding why particular best practices should be used when communicating about the phases of the crisis as the tensions cluster in different combinations.

Previous research in risk and crisis communication has retrospectively provided researchers and practitioners the opportunity to identify emerging best practices and to evaluate their effectiveness in preventing, mitigating, or renewing after crisis situations (e.g., Lachlan et al., 2018; Stewart & Young, 2018; Ulmer et al., 2018). In contrast, the utility of recognizing the tensions confronting decision-makers prior to the selection of particular best practices helps scholars to explore new aspects of risk and crisis communication as the prioritization of tensions shifts during crisis, producing interaction that may or may not make the adoption of particular best practices an option for future decision-makers.
Limitations and Directions for Future Research

This TSCD theory is exploratory and not without limitations. In this study, the identification of tensions of strategic communication decision-making about a mega-crisis came from written messages that were posted by the WHO on their website. While Baxter (2011) affirmed the study of “contrasting discourses . . . in spoken or written texts” (p. 152), to understand more robustly how decision-makers experience and prioritize tensions, scholars may learn more if they extend the parameters of the search, gathering responses from multiple mediums as a crisis unfolds and working directly with decision-makers (e.g., interviews, observations, or surveys).

A second limitation of this study is its single mega-crisis focus. While helpful in an exploratory way, TSCD’s applicability to a variety of different crisis contexts simultaneously would add value and veracity to its legitimacy. For example, the novel coronavirus COVID-19 in 2020 is a fertile area of study where politics, economics, sociology, education, and family systems offer numerous inter-related contexts whereby the prioritization and interplay of tensions could reveal a range of effective and ineffective communication strategies used by decision-makers in an attempt to retain or rebuild relationships with multiple publics. Similarly, TSCD could be used to analyze ongoing crises involving food safety, environmental security, domestic acts of violence, mass shootings, and many other social issues. The next step for researchers is to find ways to test the propositions and conditions, thereby confirming or disproving TSCD’s theoretical assumptions.

Finally, the impact of the cultural context in a crisis on publics responsiveness to strategic communication choices requires more robust examination. As such, within every crisis are cultural variables affecting the relationship between the decision-makers and their publics. How the decision-makers choose to strategically communicate with their publics in times of crisis will influence how their messages are received (Littlefield, 2013).
Conclusion

This exploratory study introduced an applied theory describing the processes associated with message creation by decision-makers in risk and crisis situations; identifying how the tensions present themselves, how they influence the prioritization of strategic communication responses, and how their interaction with best practices is affected by the context in which they are introduced. By being attentive to these inherent tensions, scholars and observers may better understand how their responses to manage complex and challenging risk and crisis situations may be more strategically utilized in the future.

Acknowledgment

I wish to acknowledge the graduate students and faculty colleagues at North Dakota State University and University of Central Florida for their contributions to my conceptualization of the Tensions of Strategic Communication Decision-Making Theory.

ORCID

Robert S. Littlefield © https://orcid.org/0000-0003-3451-4563

References

Avery, E. J. (2019). The effects of community size, control over agenda, and contextual variables on Zika virus preparation of public information officers at local public health departments, Journal of International Crisis and Risk Communication Research, 2(1), 97–119. http://doi.org/10.30658/jicrcr.2.1.5

Bakker, M. H., Kerstholt, J. H., van Bommel, M., & Giebels, E. (2019). Decision-making during a crisis: The interplay of narratives and statistical information before and after crisis communication, Journal of Risk Research, 22(11), 1409–1424. http://doi.org/10.1080/13669877.2018.1473464

Baxter, L. A. (1990). Dialectical contradictions in relational development. Journal of Social and Personal Relationships, 7, 69–88. https://doi.org/10.1177/0265407590071004
Baxter, L. A. (2011). *Voicing relationships: A dialogic perspective*. Sage. https://doi.org/10.4135/9781452230344

Baxter, L. A., & Simon, E. P. (1993). Relational maintenance strategies and dialectical contradictions in personal relationships. *Journal of Social and Personal Relationships, 10*, 225–242. https://doi.org/10.1177/026540759301000204

Benoit, W. L. (1997). Image restoration discourse and crisis communication. *Public Relations Review*, 23, 177–186. https://doi.org/10.1016/s0363-8111(97)90023-0

Benoit, W. L. (2015). *Accounts, excuses, and apologies: Image repair theory and research* (2nd ed.). SUNY Press.

Benoit, W. L. (2018). Crisis and image repair at United Airlines: Fly the unfriendly skies. *Journal of International Risk and Crisis Communication Research, 1*(1), 11–26. https://doi.org/10.30658/jicrcr.1.1.2

Boin, A., t’Hart, P., Stern, E., & Sundelius, B. (2005). *The politics of crisis management: Public leadership under pressure*. Cambridge University Press.

Brazil fears birth defects linked to mosquito-borne virus. (2016, January 6). The Maltese Independent. Archived at https://web.archive.org/web/20180712121324/https://www.independent.com.mt/articles/2016-01-06/health/Brazil-fears-birth-defects-linked-to-mosquito-borne-virus-673615131

Coombs, W.T. (2007). Protecting organizational reputations during a crisis. The development and application of SCCT. *Corporate Reputation Review, 10*, 163–176. https://doi.org/10.1057/palgrave.crr.1550049

Coombs, W. T. (2012). *Ongoing crisis communication: Planning, managing, and responding* (3rd ed.). Sage.

Coombs, W. T. (2013). Situational theory of crisis: Situational Crisis Communication Theory and corporate reputation. In C. E. Carroll (Ed.), *Handbook of communication and corporate reputation* (pp. 262–278). John Wiley.

Coombs, W. T. (2014). State of crisis communication: Evidence and the bleeding edge. *Research Journal of the Institute for Public Relations, 1*(1). Archived at https://web.archive.org/web/20150924123159/https://instituteforpr.org/wp-content/uploads/CoombsFinalWES.pdf
Coombs, W. T., & Holladay, S. J. (1996). Communication and attributions in a crisis: An experimental study in crisis communication. *Journal of Public Relations Research, 8*, 279–295. https://doi.org/10.1207/s1532754xjprr0804_04

Coombs, W.T., & Holladay, S.J. (2002). Helping crisis managers protect reputational assets: Initial tests of the situational crisis communication theory. *Management Communication Quarterly, 16*(2), 165–186. https://doi.org/10.1177/089331802237233

Cummings, A. D. (1992). The Exxon Valdez oil spill and the confidentiality of natural resource damage assessment data. *Ecology Law Quarterly, 19*(2), 363–412. https://www.jstor.org/stable/24113134

Dowell, J. (2016). Coordination of decision-making in crisis management. In P. Scott & G. Rogova (Eds.), *Fusion methodologies in crisis management: Higher level fusion and decision-making* (pp. 489–499). Springer. https://link.springer.com/chapter/10.1007/978-3-319-22527-2_23

Duffy, J., & Brasileiro, A. (2016, January 23). Zika virus outbreak linked to World Cup. The Sunday Herald (Glasgow). Archived at https://web.archive.org/web/20190806042427/https://www.heraldscotland.com/news/14226384.zika-virus-outbreak-in-brazil-linked-to-world-cup

Farrell, L. C. (2015). Tension of openness: An examination of Menu Foods organizational disclosure during the 2007 pet-food recall. In R. S. Littlefield & T. L. Sellnow (Eds.), *Risk and crisis communication: Navigating the tensions between organizations and the public* (pp. 39–56). Lexington Books.

Fearn-Banks, K. (2016). *Crisis communications: A casebook approach* (5th ed.). Routledge. https://doi.org/10.4324/9781315684857

Goffman, E. (1974). *Frame analysis: An essay on the organization of experience*. Northeastern University Press. Reprinted 1986 by arrangement with Harper & Row.

Goodhue, D. (2016, January 21). Local health officials wary of Latin America, Caribbean Zika Outbreak. FLKeys News: Tribune Content Agency. Archived at https://web.archive.org/web/20200605140923/https://www.flkeysnews.com/news/local/environment/article79622427.html
Gribas, J., DiSanza, J., Legge, N., & Hartman, K. L. (2018). Organizational image repair tactics and crisis type: Implications for crisis response strategy effectiveness. *Journal of International Crisis and Risk Communication Research, 1*(2), 225–252. https://doi.org/10.30658/jicrcr.1.2.3

Ha, J. H., & Boynton, L. (2014). Has crisis communication been studied using an interdisciplinary approach? A 20-year content analysis of communication journals. *International Journal of Strategic Communication, 8*(1), 29–44. https://doi.org/10.1080/1553118X.2013.850694

Harrower, E. (2012). *Inside reporting: A practical guide to the craft of journalism* (3rd ed.). McGraw-Hill Companies, Inc.

Helsloot, I., Boin, A., Jacobs, B., & Comfort, L. K. (Eds.). (2012). *Mega-crisis: Understanding the prospects, nature, characteristics and effects of cataclysmic events*. Charles C. Thomas Publishers, LTC.

Hermann, M. G., & Dayton, B. W. (2009). Transboundary crisis through the eyes of policymakers: Sense making and crisis management. *Journal of Contingencies and Crisis Management, 17*(4), 233–241. https://doi.org/10.1111/j.1468-5973.2009.00590.x

Johnson, C. (2003). Enron’s ethical collapse: Lessons for leadership educators. *Journal of Leadership Education, 2*(1), 45–56. https://doi.org/10.12806/v2/i1/c2

Kaplan, R. S., & Mikes, A. (2012, June). Managing risks: A new framework. *Harvard Business Review, 90*(6), n.p. Archived at https://web.archive.org/web/20130424060432/https://hbr.org/2012/06/managing-risks-a-new-framework

Lachlan, K. A., Spence, P. R., Omilion-Hodges, L., Rice, R. G., & Brink, A. (2018). Responding to campus shootings: Two studies exploring the effects of sex and placement strategy on knowledge acquisition and organizational reputation. *Journal of International Crisis and Risk Communication Research, 1*(2), 83–110. https://doi.org/10.30658/jicrcr.1.1.5

Littlefield, R. S. (2013). Communicating risk and crisis communication to multiple publics. In A. J. DuBrin (Ed.), *Handbook of research on crisis leadership in organizations* (pp. 231–251). Edward Elgar. https://doi.org/10.4337/9781781006405.00021
Littlefield, R. S., Farrell, L., Beauchamp, K., & Rathnasinghe, S. (2012). *Maintaining relationships with the public: Applications of relational dialectics theory in crisis situations*. Paper presented at the meeting of the National Communication Association, Orlando, FL.

Littlefield, R. S., & Sellnow, T. L. (Eds.). (2015). *Risk and crisis communication: Navigating the tensions between organizations and the public*. Lexington Books.

Liu, B. F. (2019). The critical need for crisis and risk communication research. *Journal of International Crisis and Risk Communication Research*, 2(1), 7–11. https://doi.org/10.30658/jicrcr.2.1.1

McCombs, M. E., & Shaw, D. L. (1972). The agenda-setting function of mass media. *The Public Opinion Quarterly*, 36(2), 176–187. https://doi.org/10.1086/267990

McKnight, B., & Linnenluecke, M. K. (2016). How firm responses to natural disasters strengthen community resilience: A stakeholder-based perspective. *Organization & Environment*, 29(3), 290–307. https://doi.org/10.1177/1086026616629794

Mumby, D. K. (2005). Theorizing resistance in organizational studies: A dialectical approach. *Management Communication Quarterly*, 19(1), 19–44. https://doi.org/10.1177/0893318905276558

Neuendorf, K. A. (2002). *The content analysis guidebook*. Sage.

Partlow, J. (2016, January 24). Women warned over Zika outbreak. The Washington Post. Archived at https://web.archive.org/web/20160124090653/http://www.scmp.com/news/world/article/1903987/women-warned-over-zika-outbreak

Perelman, C., & Olbrechts-Tyteca, L. (1958/1971). *The new rhetoric: A treatise on argumentation* (J. Wilkinson & P. Weaver, Trans.). Notre Dame University Press.

Reierson, J. L., Sellnow, T. L., & Ulmer, R. R. (2009). Complexities of crisis renewal over time: Learning from the case of tainted Odwalla apple juice. *Communication Studies*, 60, 114–129. https://doi.org/10.1080/10510970902834841

Reynolds, B., & Seeger, M. W. (2005). Crisis and emergency risk communication as an integrative model. *Journal of Health Communication Research* 10(1), 43–55. https://doi.org/10.1080/10810730590904571
Romero, S. (2016, January 2). In Brazil, epidemic of malformed infants; Government suspects Zika virus of causing microcephaly in babies. News (p. 6). Retrieved from www.lexisnexis.com

Seeger, M. W. (2006). The ten best practices of risk and crisis communication. *Journal of Applied Communication Research, 34*(3), 232–244. https://doi.org/10.1080/00909880600769944

Seeger, M. W., & Ulmer, R. R. (2002). A post-crisis discourse of renewal: The cases of Malden Mills and Cole Hardwoods. *Journal of Applied Communication Research, 34*(2), 126–142. https://doi.org/10.1080/00909880216578

Sellnow, T. L., Ulmer, R. R., Seeger, M. W., & Littlefield, R. S. (2009). *Effective risk communication: A message-centered approach.* Springer.

Stern, E. K. (2003). Crisis studies and foreign policy analysis: Insights, synergies, and challenges. *International Studies Review, 5*(2), 183–202. https://doi.org/10.1111/1521-9488.5020016

Stewart, M. C., & Young, C. (2018). Revisiting STREMII: Social media crisis communication during Hurricane Matthew. *Journal of International Crisis and Risk Communication Research, 1*(2), 279–302. https://doi.org/10.30658/jicrcr.1.2.5

Ubelacker, S. (2016, January 14). Spreading mosquito-borne virus may pose pregnancy risk: researchers. The Record. Archived at https://web.archive.org/web/20200605003137/https://www.thererecord.com/news/world/2016/01/14/spreading-mosquito-borne-virus-may-pose-pregnancy-risk-researchers.html

Ulmer, R. R., Sellnow, T. L., & Seeger, M. W. (2018). *Effective crisis communication: Moving from crisis to opportunity* (4th ed.). Sage.

Umeha, C. (2016, February 9). What does the Zika virus mean for travel? Daily Independent (Nigeria). Archived at https://web.archive.org/web/20190527074400/https://www.independent.ng/zika-virus-mean-travel-forbes
Veil, S. R., Anthony, K. E., Sellnow, T. L., Staricek, N., Young, L. E., & Cupp, P. (2020, in press). Revisiting the best practices in risk and crisis communication: A multi-case analysis. In H. D. O’Hair, & M. J. O’Hair (Eds.), The handbook of applied communication research: Volume 1 (pp. 378–396). John Wiley & Sons, Inc.

Vickery, K. (2016, February 6). Fears of northern exposure. Northern Territory News (Australia). Archived at https://web.archive.org/web/20200826162607/https://www.territorystories.nt.gov.au/bitstream/10070/261300/33/Northern%20Territory%20News_20160206_page22_NTNews_News_22.PDF

Washington: CDC warns pregnant women to avoid 14 countries in the Americas. (2016, January 18). U. S. Official News: Plus Media Solutions. www.lexisnexis.com

Weick, K. (1993). The collapse of sensemaking in organizations: The Mann Gulch disaster. Administrative Science Quarterly, 38, 628–652.

World Health Organization. (2015a, October 21). Zika virus infection—Brazil and Colombia Disease Outbreak News: Emergencies preparedness, response. Archived at https://web.archive.org/web/20151124091632/https://www.who.int/csr/don/21-october-2015-zika/en/

World Health Organization. (2015b, November 27). Zika virus infection—El Salvador. Disease Outbreak News: Emergencies preparedness, response. Archived at https://web.archive.org/web/20151202032729/https://www.who.int/csr/don/27-november-2015-zika-el-salvador/en/

World Health Organization. (2015c, December 3). Zika virus infection—Venezuela. Disease Outbreak News: Emergencies preparedness, response. Archived at https://web.archive.org/web/20151208125801/https://www.who.int/csr/don/03-december-2015-zika-venezuela/en/
World Health Organization. (2015d, December 21). Zika virus infection—Honduras. Disease Outbreak News: Emergencies preparedness, response. Archived at https://web.archive.org/web/20151227033046/https://www.who.int/csr/don/21-december-2015-zika-honduras/en/

World Health Organization. (2016a, February 8). Zika virus infection—Maldives. Disease Outbreak News: Emergencies preparedness, response. Archived at https://web.archive.org/web/20160215174708/https://www.who.int/csr/don/8-february-2016-zika-maldives/en/

World Health Organization. (2016b, February 12). Microcephaly—United States of America. Disease Outbreak News: Emergencies preparedness, response. Archived at https://web.archive.org/web/20160215183548/https://www.who.int/csr/don/12-february-2016-microcephaly-usa/en/

Yen, V. Y-C., & Salmon, C. T. (2017). Further explication of mega-crisis concept and feasible responses. SHS Web of Conferences (33) 00034. https://doi.org/10.1051/shsconf/20173300034