# Evaluating Crisis Communication Using a Methodical Holistic Sampling (MHS) Prominence Evaluation (PE) Index

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**Abstract**

How effective is the Situational Crisis Communication Theory model? This research uses a quantitative approach, the methodical holistic sampling (MHS) process, to generate a prominence evaluation (PE) index, a measure of how prominent a crisis is. The MHS process uses a combination of age, source, and search engine rank of information pertaining to an event to generate a number representing the prominence of that particular event, with a higher number representing greater prominence. Since it is desirable to minimize the prominence of a crisis event, successful crisis communication minimizes the PE index number. Three preventable crises, internally induced structural failures (IISF), were analyzed to determine the effectiveness of the SCCT model, as each used varying degrees of the SCCT. The result of this analysis showed that there is a correlation between the use of the SCCT and the PE Index, with higher use of the SCCT resulting in better index numbers. Since the PE index is temporal, it can be used to track crisis response over time, giving the crisis manager a tool to gauge responses and adapt accordingly. Finally, the PE index can be easily adapted as a citation and a personality index.

## Introduction

Over the past two decades, there has been much research and discussion pertaining to crisis communication. The leading theory is the situation crisis communication theory (SCCT), first postulated by Coombs in the latter half of the 1990s (Coombs, 1995; Coombs, 1999; Kyhn, 2008; Lai, 2010). The crux of the theory is that for every crisis, there is an appropriate response, and that a successful communications manager can properly evaluate the crisis and select the appropriate response. Successful crisis communication minimizes the reputational damage of the organization involved in the crisis.

How is successful crisis communication measured? One method is to analyze the media coverage of a crisis, a content analysis method. This method was used by Villines (2011) to determine if BP was successful in responding to an oil spill in the Gulf of Mexico. In the BP study, Villines analyzed both the content and the tone of newspaper coverage of the crisis, and from this analysis inferred a level of success of BP's crisis communication. Kyhn (2008) used a similar approach to analyze Scandinavian Airlines' grounding of its Dash 8-Q400 aircraft, and infer the success of not only the crisis communication, but the SCCT strategies used. Cooley and Cooley (2011) used the content analysis method in their study of the use of SCCT by General Motors during its bankruptcy. Lai (2010) expanded media coverage to include online and non-media sources such as a company newsletters in an analysis of the TJX crisis where over 45 million credit and debit card numbers were stolen from the company. Media coverage can be good indicator of the scope of a crisis and how successfully the crisis is being managed, because it is documentable, and most importantly, quantifiable, which permits different researchers to conduct the same research and come up with the same results, which is an

important validation of them. However, neither study was quantitative but qualitative, with the analysis focusing not on the quantity of coverage but the quality of the coverage, specifically the content and the tone, to determine the level of success of the crisis communication. Because of the subjective nature of these analyses, neither the research nor the results can be objectively validated, as no two researchers will have the same interpretation of the content and the tone of the media coverage. Thus the dilemma- how to objectively evaluate the level of success of crisis communication?

The purpose of this research is to solve this dilemma, and produce an objective measure of evaluation and comparison of the relative success of crisis communication and management strategies. As the SCCT has been refined (Coombs and Holladay, 2002; Coombs, 2006) to a much simpler matrix of crisis clusters and response clusters, yielding fewer potential responses for a particular crisis (as the appropriate responses to a particular crisis are limited to those responses within the cluster associated with the crisis' cluster), researchers are finding that the available responses may not be the best for that particular crisis. (Kyhn, 2008; Wright, 2009; Claeys, Cauberghe and Vyncke, 2010; Villines, 2011) In other words, the crisis-response matrix of SCCT may be too limiting and specific. Wright (2009) suggests that the SCCT should be tested more in depth. Avery, Lariscy, Kim and Hocke (2010) go one step further, and calls for not only more testing of SCCT, but that future testing of the theory be more methodical and prescriptive and less descriptive; this research answers that call.

## Literature Review

Since its introduction in the 1990s, (Coombs, 1995; Coombs, 1999) SCCT has quickly come to dominate crisis communication research. In 1999, Coombs specifically defined the parameter of SCCT- "Crisis management application is improved when crisis managers have evidence to support their actions (i.e. proven reasons to back their choices)." (p. 138) To paraphrase, the reaction to a crisis

should be appropriate for the action that caused the crisis. A great allegory to crisis management, and the theory of SCCT, is the story of Goldilocks and The Three Bears- when Goldilocks sees the three bowls of porridge, she has to decide which one to eat to satisfy her hunger, and if she chooses wrong, she acerbates the situation. So too, the crisis manager must play Goldilocks, and hope that he or she guesses the "just right" response, so as not the acerbate the crisis. If the response is too much or too little, the crisis will worsen; if the choice is the right choice, it will not. Unlike Goldilocks, the crisis manager can properly assess the situation and make the choice necessary for a satisfactory outcome. The guiding paradigm of SCCT, then, is that for crisis communication to be successful, one must choose the correct communication for that particular crisis.

In 2002, Coombs and Holladay began refining this broad paradigm to be of use to practitioners with the identification of clusters of crises and responses, and mathematically modeling which clusters on the response side should go with which clusters on the crisis side. Coombs further refined the cluster matrix in 2006. Subsequently, Coombs has continued to refine his matrix model. (2007a, 2007b). Lai (2010), Cooley and Cooley (2011), Kyhn (2008), David and Chiciudean (2011), Villines (2011) , and Wright (2009) go into great detail about the SCCT and how it works (theoretically). Lai (2010), Villines (2011), Kriyantono (2012), Kyhn (2008), David and Chiciudean (2011) use real-life examples in their tests of SCCT, while Wright (2009) and Claeys *et al.* (2010) use hypotheticals in theirs.

Two different methods have been used to test the SCCT model – content analysis and surveys. As explained previously, content analysis entails the analysis of media coverage of a crisis or event, and can include quantitative factors such as word count, length, and page placement (i.e., which page), as well as qualitative factors such as tone, bias, context, editorialization, omissions, quality (of both the coverage and the source), and the like. Villines (2011), Cooley and Cooley (2011), Kyhn (2008), and

Lai (2010) and all used the content analysis method to test the SCCT model; of these studies, Villines' and Cooley and Cooley's were the narrowest in scope, Lai's the broadest, and Kyhn's was in the middle. Villines (2011) only analyzed newspaper articles; Cooley and Cooley (2011) only analyzed information originating from the organization experiencing the crisis; Kyhn (2008) used both newspaper articles and direct organizational communications; Lai (2010) used all sources of information about the crisis. Not only were the scopes (with respect to the sources used) varied, the degree of quantitative and qualitative factors used in the analysis was too. Kyhn (2008) used an exclusively qualitative approach, and the researcher gave a vigorous editorial against the use of quantitative factors in context analysis. Villines (2011) and Cooley and Cooley (2011) also used an exclusive qualitative approach. Although Lai (2010) collected quantitative data, such as word counts, that data was ignored for the qualitative. Like Kyhn (2008), Lai (2010) also provides a vigorous argument in favor of a qualitative versus a quantitative approach. Of those using a qualitative content analysis study method, all concluded that the SCCT is a good model, although Kyhn noted that the model is limiting, as responses not in the appropriate cluster also worked.

The survey method was used to test the SCCT model by Kriyantono (2012), David and Chiciudean (2011), Wright (2009) and Claeys *et al.* (2010), with the former two using real-world events and the latter two using hypotheticals. Kriyantono's survey was an open-ended survey, which allowed respondents to state, in their own words, their opinions, which allowed for analysis of ethnic trends, namely whether different ethnic groups interpreted crisis communications differently. Kriyantono concluded that SCCT is a good model for crisis communication, as it yields the desired results of minimizing long-term organizational reputational degradation. David and Chicudean (2011) concluded that while SCCT is a good model overall, it is limiting and should consider anger. Wright (2009) and Claeys *et al.* (2010) discovered that the SCCT model does not always provide the superior

response strategy. Wright found that the SCCT matched response for a particular crisis is not always the superior response, and recommended further testing of the model. Claeys et. al. found no real connection between crisis type and response strategy on reputation, which questions the validity of the base paradigm on which SCCT is built. Given that these latter two researchers used hypothetical crises, it is possible that the model disconnect these researchers observed is because the crises were hypothetical and not real, because people may respond differently to a theoretical crisis than to a real one.

## Methodology

Because of the limitations of the previously discussed tests of the SCCT, it is challenging to draw any definite conclusion, positive or negative, about the model. As Avery *et al.* (2010) state,

> "crisis communication research in public relations may benefit both theoretically and pragmatically through more diverse contextual and methodical applications. Overall, it seems that the body of work could be less descriptive and more prescriptive..." (p.192)

*Question 1: Can the effectiveness of the SCCT be evaluated more methodically, prescriptively, and objectively?*

The methodology used for this study is an attempt to provide what Avery *et al.* suggest, a new way to evaluate crisis communications. It is a quantitative context analysis method, using real-world crises, and is replicable. The methodology creates a score from the source and age of search engine "hits" on a particular crisis topic, with a higher score representing higher prominence for that crisis.

The process use to create this prominence evaluation score, or PE index, is a methodical holistic sampling (MHS) technique- methodical, because of the prescriptive nature of the collection of the input data and the calculation of the output; holistic, because it is inclusive and not limited with respect to input data; sampling, because a sample of input data is collected. While the MHS process has some limitations, it does provide a quantifiable way to compare different crisis response strategies, and most important, is completely objective and replicable. The fatal flaw in qualitative tests is that the interpretation of the input data is open to debate, as two different researchers may often interpret the same piece of information very differently, depending on their own personal beliefs, environment, and worldview; the quantitative MHS process eliminates these biases.

For this study, three different crises were evaluated. For the sake of simplicity, all three cases involve the same type of event and all fall within the preventable crisis cluster. This cluster was selected because it is the most extreme type of crisis and successful crisis management within the cluster entails minimizing the amount of publicity about the crisis event, as preventable crises are those that are entirely caused by human failure. One of the most, if not the most, notorious type of preventable crisis is the internally induced structural failure (IISF). An IISF is one where the structure fails on its own accord, without any outside influence (e.g. fuel laden aircraft, truck bombs, errant ships) acting as a catalyst for the collapse. An IISF happens within seconds, without warning, and generally results in loss of life. Because an IISF is caused by poor design, construction, or maintenance of a structure, or a combination thereof, it is a crisis that is completely preventable. An IISF is the worst possible crisis an organization can have because of its completely preventable nature; thus, it elicits very strong negative emotions towards the organization responsible. In the case of an IISF, all news is bad news, as it serves as a reminder of the organization's total failure.

The three IISF cases selected all involved public places, and all resulted in loss of life – the Kansas City Hyatt Regency skywalk collapse; the Texas A&M bonfire collapse; the I-35W bridge collapse. The skywalk collapse occurred in 1981, well before the advent of SCCT theory, and resulted in the loss of 114 lives. This IISF is included as the control group because it occurred before SCCT, and therefore represents the non-SCCT case. The Texas A&M bonfire collapse in 1999 resulted in the loss of 12 lives; the I-35W bridge collapsed in 2007, resulting in 13 fatalities. Both the latter events occurred subsequent to the formulation of SCCT.

*Hypothesis 1: The more that appropriate SCCT responses are used, the lower the PE score.*

If H1 is correct, then the Hyatt Regency IISF should have the highest PE index, as it occurred prior to the formulation of the SCCT.

Because of the ubiquitousness of search engines in obtaining information, these were used to find the communication for each IISF crisis. As there are three major search engines, Bing, Google, and Yahoo, for each IISF analyzed, a search was performed on each of the three engines, yielding a total of nine searches. To ensure consistency in the results, for each IISF crisis, the same search terms were used on all three search engines. For the skywalks, the phrase "KANSAS CITY HYATT REGENCY WALKWAY COLLAPSE" was used; for the bonfire, "TEXAS A&M BONFIRE COLLAPSE"; for the bridge, "I-35W BRIDGE COLLAPSE".

Because of the large number of hits for each topic on each search engine, to extract data from all hits would be laborious and time consuming; therefore, it is necessary to pull a sample. As search engines rank hits based on relevance and the frequency a particular site is accessed, the higher the rank, the more relevant and more viewed a site it. The more a site is viewed, the greater likelihood that its

point of view will be accepted as factual or the best interpretation of the facts, and the more its information will be trusted. Given this relationship, the focus of the context analysis should be on the higher ranking hits. Because it is unlikely that people will look at information from sites listed beyond the first two pages of the search engine, it is prudent to limit the sample size to the number of listings found on the first two pages. As there are three different search engines that display information slightly differently, there is no one number that works for all three. As the number of hits displayed on the first two pages for all three search engines is greater than twenty but less than twenty-five, then twenty is an appropriate sample size, as the first twenty hits will occur within the first two pages for all three search engines.

For the first twenty hits on each search engine for each topic, the following information was recorded: (1) year the information was first published or presented; (2) the type of source of the information. With respect to the publication year, some sources are either updated continuously (like Wikipedia) or do not have any dates (private websites), and for these cases the publication date is considered to be current and is encoded as "NULL". The type of source is categorical, with categories assigned a number ranging from 1 to 9, with category 1 having the lowest amount of editorializing and category 9 having the highest. It is important to make this categorization as editorializing helps shape opinion about a particular event. These categories are: (1) photograph, with no or less than ten word caption; (2) raw video footage, with no narrative or narrative provided by person shooting the video; (3) educational, either from a university website, a library, an encyclopedia (including Wikipedia), a conference presentation, or any similar source that presents the facts of the event in a concise manner with little or no editorializing; (4) mainstream media, either newspapers or television news (coverage of a page or less in print or one minute or less on television); (5) blogs, either personal or business, and newspaper or magazine columns or letters, or social networking sites; (6) magazine articles or

television investigative reports; (7) journal articles; (8) written reports, websites (not blogs), or documentaries; (9) books or movies.

*Hypothesis 2: There is a correlation between the type of source and the PE score.*

*Hypothesis 3: Each of the three search engines should be consistent in the type of source it searches with respect to each other, regardless of topic.*

To test H2 and H3, an average source category value is calculated for each search for each search engine (yielding nine averages in all, three for each search engine and three for each search topic). For H2, for each search topic the three average source category scores are averaged to create one score per topic. If the hypothesis is true, the rankings of these three scores should correlate to the ranking of the PE scores. If H3 is true, each average should have the same relativity to the other two averages for each search topic. For example, if the average search category value for the walkway collapse in order of magnitude from smallest to largest is Bing-Google-Yahoo, then if H3 is true the Bing average search category value will be the smallest and the Yahoo one the largest for the bonfire collapse and the bridge collapse.

The age of a piece of information on a crisis is an indicator of the success of the crisis communication. When crisis communication is successful, the crisis is dealt with and the reputation is rebuilt; conversely, when the crisis communication is unsuccessful the crisis is not dealt with and resolved. Ongoing communication about a crisis indicates that the crisis has not been successfully resolved. Therefore, past communication about a crisis should not be given the same gravitas as in the present communication. To address this issue, a weighting factor was created based on the year the

information was first presented or published to give a higher weight to newer information.

The year weighting factor (Y) is defined by *Equation 1* as follows:

*[EQ 1]* $$Y = \frac{(Y_P+1)-Y_E}{(Y_C-Y_E)}$$

where:

$Y$ = year weighting factor
$Y_P$ = year communication presented or published
$Y_E$ = year of the event that the communication is referring to
$Y_C$ = current year

For those communications encoded with a "NULL", $Y = 1$.

For every hit recorded, the source category number is then multiplied by the year weighting factor to generate a weighted source score (S). The mathematical representation of this calculation is shown as *Equation 2* :

*[EQ 2]* $$S = Y \times C$$

where:

$S$ = weighted source score
$Y$ = year weighting factor
$C$ = source category number

As mentioned previously, when a search engine displays hits, the order in which the hits are displayed as based on relevance and number of visits to the site. Because order is important, all hits in the sample should not be treated the same, as the first hit has more value than the twentieth. To accommodate this difference, a ranking weighting factor is necessary. The mathematical expression for the ranking weighting factor ($R_F$) is shown as *Equation 3*:

*[EQ 3]* $R_F = 21 - R$

where:

$R_F$ = ranking weighting factor
R = order, rank, or position of hit in search

Finally, based on the weighted ranking and the weighted source score, a total prominence score ($T_P$) is calculated for each hit. *[Equation 4]*

*[EQ 4]* $T_P = S \times R_F$

where:

$T_P$ = total prominence score
S = weighted source score
$R_F$ = ranking weighting factor

For each crisis event, twenty individual total prominence scores were calculated for each search engine used. These twenty scores were then added together to create one total prominence score for each crisis event for each search engine; nine in all, three for each crisis. The three scores for each crisis were then averaged to create the PE Index. The PE Index is a number representing the current prominence of the event; since time is a factor in the generation of this index, it is dynamic and changes with time. For an IISF crisis, a successful crisis communication strategy will not only generate a smaller number, but the number will decrease over time. A large index or increases in the index over time are indicative of an unsuccessful crisis communication strategy.

## Results and Discussion

The results of the MHS analysis are shown in *Table 1*. As can be seen from the table, there is not a strong correlation between the type of source and the PE Index. While for all three case studies, the highest average source category yielded the highest PE Index, the lowest average source category

did not result in the lowest PE Index. Furthermore, for all nine analyses, the highest average source category did not produce the highest overall PE Index, but the fourth highest. The second hypothesis (H2) cannot be proven.

TABLE 1. Results of the MHS analysis for the three crisis events.

| KANSAS CITY WALKWAYS | | | TEXAS A&M BONFIRE | | | I-35W BRIDGE | | |
|---|---|---|---|---|---|---|---|---|
| Search Engine | Avg Source Category | PE Index | Search Engine | Avg Source Category | PE Index | Search Engine | Avg Source Category | PE Index |
| BING | 4.30 | 852.64 | BING | 4.75 | 591.07 | BING | 4.80 | 632.86 |
| GOOGLE | 5.05 | 870.97 | GOOGLE | 4.65 | 563.13 | GOOGLE | 4.40 | 694.57 |
| YAHOO | 4.60 | 817.94 | YAHOO | 3.95 | 567.87 | YAHOO | 5.85 | 758.43 |
| AVG | 4.65 | 847.18 | AVG | 4.45 | 574.02 | AVG | 5.02 | 695.29 |

The third hypothesis (H3) must also be rejected, as there is no pattern of either the average source categories or the PE Index of each of the search engines with respect to the other two. With respect to the source categories, the average values, from lowest to highest, are Bing-Yahoo-Google for the Kansas City walkways, Yahoo-Google-Bing for the Texas A&M bonfire, and Google-Bing-Yahoo for the I35W bridge. This indicates that there is not an intrinsic bias within the search engines for a particular type of source of information. The PE Indexes show a similar pattern, with the lowest-to-highest PE indexes being Yahoo-Bing-Google for the Kansas City walkways, Google-Yahoo-Bing for the Texas A&M Bonfire, and Bing-Google-Yahoo for the I-35W bridge. What this means to the public relations practitioner is that all sources of information are important, as the algorithms used by the search engines do not indicate any biases towards some sources over others, nor do the three major search engines rank the importance of a particular source the same. It also means that prominence of information about an event more than likely correlates to the strategies used to respond to the crisis,

which necessitates a more in-depth analysis of the response strategies.

According to Coombs (2007b), the best practices for a preventable crisis like an IISF are to provide instructing information, express sympathy, provide information about corrective actions and trauma counseling, and either provide compensation, an apology or both. H1 states that the more of the SCCT that is followed, the lower the overall PE Index will be, as proper crisis communication results in fewer references to the crisis, especially in the long-term, as the crisis will have been resolved. If this hypothesis is true, then the response to the bonfire will have utilized more of SCCT than either the response to the bridge or the walkways, with the response to the walkway collapse utilizing the fewest SCCT methods, as the PE Index for that event is the highest.

*Kansas City Hyatt Regency Skywalk Collapse, 1981*

The oldest of the three cases, the collapse of the skywalks in the lobby of the Kansas City Hyatt Regency in, 1981 remains the most catastrophic IISF with respect to the loss of life. The owners of the hotel immediately rebuilt the atrium and reopened the hotel 75 days later. (Fivecoat-Campbell, 2013) An article published in the *Star-News* of Wilmington, North Carolina, one year after the collapse ("City avoids memories...", 1982), reported that the hotel and the city of Kansas City were not going to commemorate the anniversary of the collapse, but were trying to ignore it and pursue "business as usual". In other words, with the rapid reopening of the hotel and the refusal to commemorate the tragedy, the owner of the hotel adopted a "denial" response, which according to SCCT should not be used for a preventable crisis. Initially, the collapse was blamed on the victims, the "attack the accuser" response, that if they hadn't been standing on the skywalk looking out on the crowd below, that it wouldn't have collapsed. (Schrader, 2004) As with the "denial" response, the "attack the accuser" response is not appropriate for a preventable crisis. (Coombs, 2007b) An investigation into the

collapse revealed a design flaw, a flaw that the engineer blamed on the fabricator. ("Lives forever changed...", 2001) Although the owner did compensate the victims monetarily (Schrader, 2004), a memorial to the victims has still not been constructed ("25 years later....", 2006; Fivecoat-Campbell, 2013).

The crisis responses strategies used for the Hyatt Regency IISF were: denial, attacking the accuser, scapegoating, and compensation. Of the recommended strategies for a preventable crisis, only one, compensation, was used. Since memorials are considered a physical manifestation of an apology, the lack of a memorial can be construed as a lack of an apology. Three of the strategies used, denial, attacking the accuser, and scapegoating, are not appropriate strategies. A method to determine how well SCCT is followed is by creating a numerical value representing adherence, the adherence index (A). Assigning appropriate responses a value of "1", and inappropriate responses of "-1", the adherence index is the summation of the response values, as shown in *Equation 5.*

*[EQ 5]* $$A = \Sigma R_V$$

Where:

A = adherence index

$R_V$ = response value, either 1 or -1

For the Kansas City Hyatt Regency collapse, the adherence index is -2, with one appropriate response and three inappropriate ones. (A=1-1-1-1)

*Texas A&M Bonfire Collapse, 1999*

For the better part of a century, the undergraduate engineering students at Texas A&M showed their school spirit in the week prior to the football game against their most hated rival, Texas, by constructing a massive bonfire. The bonfire was not a typical bonfire, but a massive structure 90' tall built with logs stacked end-on-end, like the layers of a cake. The tradition ended in 1999, when the

bonfire collapsed, killing twelve of the students who were actively constructing it. A subsequent investigation revealed a design flaw, and the inexperience of those building the bonfire, caused the collapse. (Schrader, 2004) After the collapse, the university banned the construction of Bonfire on campus ("Texas A&M settles...", 2008; Hlavaty, 2013) Immediately after the collapse, the university held a memorial service for those killed, and a permanent memorial was constructed on the site of the tragedy within five years. (Hlavaty, 2013). The university also compensated the victims families financially. ("Texas A&M settles....")

The crisis response strategies used by Texas A&M were: corrective actions and sympathy, parts of the "care" response; compensation; apology. The corresponding A score is 3, as the university did not use inappropriate strategies. Based on the A score, Texas A&M followed SCCT better than the Kansas City Hyatt Regency. If H1 is true, the PE Index for Texas A&M should be lower than that for the Hyatt Regency, and it is, 574.02 for Texas A&M and 847.18 for the Hyatt Regency. A comparison of these two cases validates H1, that adherence to SCCT yields a lower PE index.

*I-35W Bridge collapse, 2007*

On August 1, 2007, the I-35W bridge across the Mississippi River, suddenly fell into the river, taking the vehicles on the bridge with it. Emergency response was swift. (Collapse, 2014) As is customary with an IISF, an investigation was performed, and determined that the bridge had a design flaw that caused the collapse. The resulting litigation involved four different organizations: the state of Minnesota, the original design firm, the firm hired to inspect the bridge, and the contractor hired to resurface the bridge when it fell, and ultimately the victims and their families received financial compensation. (Schotter and Rhineberger-Dunn, 2013) Blame was placed on the contractor who was working on the bridge (Subramanian, 2008). The engineer hired to inspect the bridge claimed that

reviewing the design was outside the scope of services. (Forliti, 2010) Four years after the collapse, a memorial was dedicated to the victims of the collapse. ("The I-35W 'Remembrance Garden'..., 2011) However, the good will created by the dedicating of the memorial has quite possibly been offset by revelations that the engineering firm hired to inspect the firm is still receiving government contracts ("Firm linked to bridge collapse...", 2012).

TABLE 2. Results of the SCCT adherence analysis for the three crisis events.

| KANSAS CITY WALKWAYS *Strategies* | | | | TEXAS A&M BONFIRE *Strategies* | | | | I-35W BRIDGE *Strategies* | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Recommended | | Not Recommended | | Recommended | | Not Recommended | | Recommended | | Not Recommended | |
| TYPE | $R_V$ | TYPE | $R_V$ | TYPE | $R_V$ | TYPE | $R_V$ | TYPE | $R_V$ | TYPE | $R_V$ |
| Compensate | 1 | Attack | -1 | Compensate | 1 | | | Compensate | 1 | Excuse | -1 |
| | | Deny | -1 | Apology | 1 | | | Apology | 1 | Scapegoat | -1 |
| | | Scapegoat | -1 | Care | 1 | | | Information | 1 | | |
| **TOTAL $R_V$** | **1** | **TOTAL $R_V$** | **-3** | **TOTAL $R_V$** | **3** | **TOTAL $R_V$** | **0** | **TOTAL $R_V$** | **3** | **TOTAL $R_V$** | **-2** |
| A = 1 - 3 = -2 | | | | A = 3 - 0 = 3 | | | | A = 3 - 2 = 1 | | | |
| A RANK= 3rd | | | | A RANK= 1st | | | | A RANK= 2nd | | | |
| PE INDEX = 847.18 | | | | PE INDEX = 574.02 | | | | PE INDEX = 695.29 | | | |
| PE INDEX RANK = 1st | | | | PE INDEX RANK = 3rd | | | | PE INDEX RANK = 2nd | | | |

Unlike the crisis responses by Texas A&M, which clearly followed the SCCT model, the responses to the bridge crisis are mixed. One the one hand, three of the recommended responses, provide information, compensate the victims, and apologize, were followed. On the other hand, two of the responses, scapegoating and excusing, are not recommended for this type of crisis. By hiring one of the firms involved in the litigation, the government did not express the willingness to take the corrective action necessary required for the "care" response. The corresponding A score for this crisis

is 1, which ranks second among the three cases. Since the PE Index for the bridge crisis is also ranked second, this case solidifies the conclusion that H1 is true, that there is a correlation between the adherence to the SCCT and the PE Index. As can be seen from *Table 2*, when the A score, the level of adherence to SCCT, increases, the PE Index, the level of prominence of the crisis, decreases. Since in a crisis prominence is bad (as attention is being kept on the crisis), good crisis management is indicated by a lower PE Index. Since higher adherence to the SCCT yielded a lower PE Index, then the SCCT is a good model. This is a numeric verification of the validity of the SCCT model, and an affirmative answer to Q1 - the effectiveness of the SCCT can be evaluated more methodically, prescriptively, and objectively.

## Conclusion

This research shows that using a methodical, holistic, sampling (MHS) method, the prominence of an event can be determined through a prominence index (PE). The PE index can be used to objectively compare the prominence of different events; in the area of crisis management, this comparison is useful to determine the success or failure of crisis communication strategies, with lower prominence the better. By being able to make these objective comparisons, the PE Index provides a metric to test the SCCT. This study compared the responses of three internally induced structural failure (IISF) crises, as each had a different amount of adherence to the SCCT, to determine if the SCCT is a good model. For each crisis, a model adherence score was create, and the rankings of the adherence scores corresponded inversely with the PE Index, which indicates that the more crisis communication adheres to the SCCT, the better the results, a quantitative validation of SCCT.

Not only can the SCCT be used to compare the effectiveness of crisis communication for different crises at a static point in time, it can also be used to dynamically gauge the effectiveness of

crisis communication. Since time is a factor in the index, a crisis communication manager could compute the index at various points in time for the same crisis, and then compare those PE indexes to each other to gauge the effectiveness of the crisis performance, analogous to how the Dow Jones Industrial Average is used as a real-time gauge of the stock market. For a new crisis, days can be substituted for years in the year weighting factor, allowing the crisis manager to gauge the prominence of the crisis daily, thus providing a tool for the crisis communication strategies to be adapted dynamically. As a crisis matures, this prominence gauge can be changed to weekly, monthly, and finally annually simply by changing the time period used in the year weighting factor.

The application of the MHS process and the PE Index is not limited to crisis events. The PE Index could also be used as a citation index by substituting a publication for a crisis event. This would provide a means to compare the importance of a particular piece of research, as a higher PE Index would be indicative of greater importance, and because of the holistic nature of the process, would also take into account sources outside of peer-reviewed journals, as there has been much research published outside of the traditional peer-reviewed journals. Analogous to the use of the PE Index as a citation index is its use as a personality index, a gauge of the prominence of a particular researcher, the individual "brand name". This can be accomplished by substituting a person for a crisis. Although the concept of a personal index may strike many as pure vanity, such an index could be an important tool to arrest to current trend of substituting quality research for quantity to increase the probability of being cited. The problem with this concept is the dilution of the "brand name" of the researcher. Many decisions, such as where to pursue a doctorate, or whose research to fund, are made based on a personal brand; thus, it is important to ensure the integrity of the personal brand name. The MHS process, and the PE Index, are tools that can be used in this endeavor.

## REFERENCES

25 years later, hotel hard to forget. (2006, 17 July) *Lawrence Journal-World.* Retrieved April 8, 2014, from http://www2.ljworld.com/news/2006/jul/17/25_years_later_hotel_tragedy_hard_forget/

Avery, E.J., Lariscy, R.W., Kim, S., & Hocke, T. (2010) A quantitative review of crisis communication research in public relations from 1991 to 2009. *Public Relations Review 36 (2010),* 190-192.

City avoids memories of hotel disaster. (1982, July 18) *Wilmington, NC, Star-News*, p. 4E.

Claeys, A.S., Cauberghe, V., & Vyncke, P. (2010) Restoring reputations in times of crisis: an experimental study of the situational crisis communication theory and the moderating effects of locus of control. Public Relations Review 36 (2010), 256-262. doi: 10.1016/j.pubrev.2010.05.004.

*Collapse- a case study of the Minneapolis I-35W bridge disaster with exercises*. Retrieved April 12, 2014, from George Mason University, Center for Infrastructure Protection and Homeland Security Web site: http://tuscany.gmu.edu/centers/cip/cip.gmu.edu/wp-content/uploads/2013/06/Collapse-Learner-Version_June-2013-Update1.pdf

Cooley, S.C., & Cooley, A.B. (2011) An examination of the situational crisis communication theory through the General Motors bankruptcy. *Journal of Media and Communication Studies, 3(6),* 203-211.

Coombs, W. T. (1995) Choosing the right words: the development of guidelines for the selection of the 'appropriate' crisis-response strategies. *Management Communication, 8(4), 447-476.* doi: 10.1207/s1532754xjprr1102_02

Coombs, W. T. (1999) Information and compassion in crisis responses: a test of their effects. *Journal of Public Relations Research, 11(2),* 125-142. doi: 10.1207/s1532754xjprr1102_02

Coombs, W. T. (2006) The protective powers of crisis management strategies: managing reputational assets during a crisis. *Journal of Promotion Management, 12(3)*, 241-260. doi: 10.1300/J057v12n13_13

Coombs, W.T. (2007a) Protecting organizational reputations during a crisis: the development and application of situational crisis communication theory. Corporate Reputation Review, (2007) 10, 163-176. doi: 10.1057/palgrave.crr.1550049

Coombs, W.T. (2007b) Crisis management and communications. *Institute for Public Relations.*

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: 165. doi: 10.1177/089331802237233

David, G., & Chiciudean, I. (2011) Using the situational crisis communication theory (SCCT) in technical and human breakdown accidents: a case study. National University of Political Studies and Public Administration, Bucharest.

Firm linked to bridge collapse receiving contracts. (2012, May 31) *Associated Press.*

Fivecoat-Campbell, K. (2013, December 4) Kansas City hotel redefining its legacy. Hotel News Now. Retrieved April 6, 2014, from http://hotelnewsnow.com/Article/12757

Forliti, A. (2010, July 8) URS says it didn't know I-35W bridge would fall. *Associated Press.*

Hlavaty, C. (2013, November 15) A&M marks 14 years since fatal collapse of the Aggie Bonfire. *Houston Chronicle.* Retrieved April 12, 2014, from http://www.chron.clom/news/articles/A-M-marks-14-years-since-fatal-collapse-of-the-4985417.php

Kriyantono, R. (2012) Measuring a company reputation in a crisis situation: an ethnography approach on the situational crisis communication theory. *Journal of Business and Social Science, (3) 9,* 214-223.

Kyhn, H. (2008) Situational crisis communication theory: its use in a complex crisis with Scandinavian Airlines' grounding of Dash 8-Q400 airplanes. Aarhus School of Business.

Lai, Y. (2010) *An application of situational crisis communication theory case study of TJX-leak of customer information* (Master's research paper). Ball State University.

Lives forever changed by skywalk collapse. (2001, 15 July) *Lawrence Journal-World*. Retrieved April 8, 2014, from http://www2.ljworld.com/news/2001/jul/15/lives_forever_changed/

Schrader, M.H. (2004) Ethical v. legal responsibilities of engineers: three case studies. *Presented at the 83rd Annual Meeting of the Transportation Research Board*, Washington, DC.

Shotter, C.J., & Rhineberger-Dunn, G. (2013) The I-35W bridge collapse: crimes of commission and omission resulting from the confluence of state processes and political-economic conditions. *Crit Crim* (2013) 21:477-492. doi: 10.1007/s10612-013-9184-5

Subramanian, N. (2008) I-35W Mississippi river bridge failure – is it a wake up call? *The Indian Concrete Journal*, February 2008, pp. 29-38.

Villines, A. (2011) Communicating during crisis: a case study of the BP Gulf oil spill. *Undergraduate Honors Thesis Collection*, Paper 90.

Wright, C. (2009) Responding to crises: a test of the situational crisis communication theory (Thesis). *Graduate School Theses and Dissertations*.