Examination of the Reliability and Validity of the Triage Assessment Survey: Organizations

Christian Conte

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DUQUESNE UNIVERSITY
SCHOOL OF EDUCATION

Dissertation

Submitted in Partial Fulfillment of the Requirements
For the Degree of Doctor of Philosophy (Ph.D.)

Presented by:

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M.S., 2000
B.S., 1998

August, 2005

EXAMINATION OF THE RELIABILITY AND VALIDITY OF THE TRIAGE
ASSESSMENT SURVEY: ORGANIZATIONS

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EXAMINATION OF THE RELIABILITY AND VALIDITY OF THE TRIAGE
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by

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Submitted in Partial Fulfillment of

the requirements for the degree

Doctor of Philosophy (Ph.D.)

Department of Counseling, Psychology, and Special Education

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Duquesne University

August, 2005
ACKNOWLEDGMENTS

First, I would like to thank Dr. Rick Myer for creating the test that opened up the door for me to perform this research. I am also grateful to him for his support, leadership, availability, and encouragement. He has been a great mentor for me. I am sincerely indebted to Dr. Jeff Miller, who alone knows the journey I’ve traveled through the statistics for this study; his patience makes him undoubtedly the best statistics person with whom I have ever come into contact. Next, I would like to thank Dr. Bill Casile, who not only made himself available to me no matter what he was doing throughout this dissertation process, but who has consistently made his supervisory wisdom available to me throughout the entire doctoral program.

My parents have closely followed my career from birth through this present day. I would not have had the means to experience this doctoral program or present research if it were not for their intellect, drive, and support they have provided me all these many years. Thank you both. Lastly, I would like to thank my wife Kristen for the unconditional love and support she has given me throughout this entire dissertation process. She has made me countless meals, stayed up many hours waiting for me to come home from the library, and pushed me to complete this research. While I know it is her desire to put my needs and wishes first, I am truly thankful to her for being my first need and wish.
This study evaluated the reliability and validity of the Triage Assessment Survey: Organizations (TAS:O), a 27-item, 5-point, Likert summated rating scale. The participants consisted of 117 graduate students. All participants responded to the TAS:O after reading mild, moderate, marked and severe organizational crisis scenarios. Statistical analyses were performed on the data to determine the instrument’s reliability and validity. The overall Cronbach’s alpha and Spearman-Brown reliability tests were both .93. An item total correlation revealed that all but one item had statistically significant correlations. Factor analysis revealed three factors, confirming the hypothesis that the TAS:O is comprised of three distinct factors (Affect, Behavior, and Cognition). However, with .50 used as a cutoff level for factor loadings, 6 of the 27 items did not load onto any factor. An ANOVA revealed that the TAS:O has the capacity to distinguish among mild, moderate, marked, and severe crises. Thus, overall statistical analyses revealed that the TAS:O appears to be a reliable and valid measure of individual responses to organizational crises. Because this is the first study to evaluate the TAS:O, further studies are needed to strengthen confidence in the psychometric properties of this scale.
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CHAPTER ONE
INTRODUCTION

In the aftermath of the event known as 9/11, conflict that has stretched worldwide, and impending terrorist attacks, the word crisis has become prevalent around the world. A crisis is a perception of an event as an unbearable difficulty that exceeds a person’s immediate resources and coping mechanisms (James & Gilliland, 2001; Myer, 2001). Because crises are perceptions of events rather than events themselves, what constitutes a crisis differs from person to person (Aguilera, 1998; James & Gilliland; Myer). A universal feature of crises is that given the right constellation of circumstances, no individual can be immune to them (James & Gilliland). In other words, all people are susceptible to experiencing a crisis.

Whereas definitions of a crisis for individuals abound, a review of the literature revealed no commonly held definition for an organizational crisis. Though Pearson & Clair (1998) offered a definition of organizational crisis, some viable questions need to be raised about their definition. Pearson & Clair define organizational crisis as a low-probability, high-impact incident that threatens the viability of the organization and is distinguished by uncertainty of cause, effect, and means of resolution, as well as by a belief that decisions must be made quickly. What prevents this definition from being a universally acceptable definition is it makes the assumption that an event with a certain cause, course of action and/or means of resolution cannot constitute a crisis. In other words, by defining organizational crisis this way, events with known causes (i.e., earthquakes), events that produce specific
effects (i.e., having to move production from one center to another), and events that have certain means of resolution (i.e., well-thought out crisis management plans), do not constitute crises. Furthermore, this definition does not include people’s perceptions of what is occurring in their organizations, which contrasts how other authors (e.g., Barton, 2001; Fink, 2002; Laye, 2002; Mitroff, 2004; Mitroff & Anagnos, 2001; Mitroff et al., 1996; Parsons, 1996; Shrivastava, 1993) use perception in their descriptions of organizational crises.

In many cases, authors in the field of organizational crises do not provide a specific definition of an organizational crisis. Rather than providing a specific definition of an organizational crisis, authors (e.g., Barton, 2001; Fink, 2002; Laye, 2002; Mitroff, 2004; Mitroff & Anagnos, 2001; Mitroff et al., 1996; Parsons, 1996; Pauchant & Mitroff, 1992; Shrivastava, 1993) tend to describe examples, characteristics, and effects of organizational crises. For example, many books (e.g., Barton; Fink; Mitroff; Mitroff & Anagnos; Mitroff et al.; Pauchant & Mitroff) begin by describing previous crises and how organizations handled them. Some characteristics of organizational crises are that they affect organizations in either positive or negative ways (Fink), and mark turning points that can affect all, or part of an organization (Mitroff et al.). Mitroff et al. noted that organizational crises occur in phases, and produce effects in which systems, mechanisms and stakeholders are all affected. Whereas this information describes examples and components of organizational crises, these components of organizational crises lack the universality needed for an effective definition of organizational crises.
Three primary reasons can be deduced from the literature to explain the lack of a universally accepted definition of an organizational crisis. First, regardless of the phenomena acting on an organization, perception defines the view of the phenomena. Secondly, scholars in the field of organizational crises tend to take a multidisciplinary approach (Pearson & Clair, 1998) and hence, a widespread view of the same topic is created (Shrivastava, 1993). Thirdly, organizational crises can be generated either externally or internally, and affect one part, or all of an organization (Mitroff et al., 1996). For example, an event perceived as a crisis by some members of an organization can be viewed as an opportunity for other members of the same organization. However, regardless of the lack of specificity in defining organizational crisis, a definition of organizational crisis can be adapted from the literature: an organizational crisis is an experience of an event that alters the homeostasis of the organization, disrupting the organization’s routine functioning.

Literature overwhelmingly supports that organizational crises are inevitable (e.g., Fink, 2002; Laye, 2002; Mitroff & Anagnos, 2001; Parsons, 1996; Shonfeld, Lichtenstein, Kline Pruett, & Speese-Linehan, 2002; Weick & Sutcliffe, 2001). Crises can happen at any time or place to any company (Fink). The conclusion that organizational crises are inevitable stems from countless examples of all types of organizations. From workplace violence to terrorism, from layoffs to mergers, crises have permeated the workforce as long as the workforce has existed.

Crises provide challenges to organizations because by their very nature, crises disrupt the existing homeostasis (Burgess & Baldwin, 1981). Crises affect human
beings in significant ways and, because people are the foundation of organizations (Viola, 1977), almost any disruption of homeostasis can have a profound effect on the organization as a whole. Whereas it has been noted that organizations’ responses to crises often determine the future of those organizations (Braverman, 1999; Mitroff & Anagnos, 2001), it has also been noted that organizations’ responses to crises are often determined by their preparedness (Weick & Sutcliffe, 2001).

Fink (2002) noted that in recent history, as many as three-fourths of the Fortune 500 companies have experienced what they would consider a serious crisis. Determining the number of organizations that have suffered a crisis in any given year is impossible since no central reporting location exists. Nonetheless, Fink suggested that every organization can expect to have at least one crisis every four or five years. Existing data does, however, indicate that organizations that respond well to crises (meaning those who return their organization to a state of equilibrium) experience recovery, whereas those who do not respond well to crises tend to experience decline (Blythe, 2003). For example, Blythe (2003) found that when organizations responded well to crises, they had a 22% higher stock price than those who did not respond well. Therefore, it is in the best economic interest of organizations to respond well to crises.

An abundance of literature has recently focused on how organizations prepare for crises (e.g., Braverman, 1999; Fink, 2002; Mitroff & Anagnos, 2001; Mitroff, Pearson, & Harrington, 1996; Pauchant & Mitroff, 1992; Shonfeld et al., 2002). Some studies have indicated that organizations that are not prepared for crises are, in
fact, crisis-prone (Pauchant & Mitroff). Crisis-prone organizations tend to not address the areas that make themselves more susceptible to crises (Pauchant & Mitroff). In fact, organizations that choose not to be crisis-prepared tend to expend more financially than prepared organizations (Mitroff et al., 1996; Pauchant & Mitroff). Greater financial burdens and disruption of organizational homeostasis can be accrued through rebuilding costs, production decline, frequent consulting fees, higher turnover rates and managerial changes (Mitroff & Anagnos; Mitroff et al.; Pauchant & Mitroff). Therefore, crisis preparation is crucial for organizations because it diminishes the disruption of homeostasis caused by crises (Braverman; Mitroff & Anagnos; Pauchant & Mitroff), and makes better financial sense.

Historically, organizations have used two types of crisis preparation: risk assessment and business impact analysis (Laye, 2002; Mitroff et al., 1996; Paton, Smith, & Violanti, 2000). Organizations use risk assessment to understand the type of threats that might occur and the acceptability of the predictable outcomes (Laye; Paton et al., 2000). In contrast, organizations use business impact analysis to evaluate the ruin that may be caused by crises (Laye). More specifically, risk assessment entails assessing organizations’ vulnerability or weaknesses, whereas business impact analysis entails assessing the damage that can be caused by crises. A simple way to state this is, “Where are our weak spots?” (risk assessment) versus, “What might happen if we experience damage here?” (business impact analysis). Yet, regardless of the level of preparation, organizations inevitably encounter disruptions of some
kind (Blythe, 2003; Braverman, 1999; Fink, 2002; Mitroff et al.; Pauchant & Mitroff, 1992; Shonfeld et al., 2002).

Regardless of their level of preparedness, organizations will encounter crises. The primary goal for crisis-struck organizations needs to be handling the crisis in a manner that restores organizational homeostasis (Mitroff & Anagnos). The necessary first step for addressing crises is assessment (Braverman; James & Gilland, 2001; Laye, 2002; Mitroff & Anagnos; Mitroff et al.; Myer, 2001). In the same way that assessment is generally regarded as an indispensable tool for understanding human behavior (Maxmen & Ward, 1995), post-crisis organizational assessment is essential for organizations to understand how they might recover from a crisis effectively (Levinson, 2002).

Organizations, like individuals, need a model to guide their assessment process (Myer & Conte, 2004). Currently, few different models of organizational assessment can be found (e.g., Brown, Pryzwansky, & Schulte, 2001; Fink, 2002; Levinson, 2002). Unfortunately, little emphasis is placed on assessing organizations after crises have occurred. Even though literature exists that describes organizational assessment models that explain what type of data to collect (e.g., Brown et al.; Fink; Levinson), no literature describes specific post-crisis organizational assessment tools.

Information extant organizational assessment models describe appears to leave out how the human impact of crises is assessed. For example, Mitroff et al. (1996) noted that organizations should be assessed based on 4 major factors: (a) types, (b) phases, (c) systems, and (d) stakeholders. Though this model describes
systems and stakeholders, it does not account for individual types of reactions. Brown et al. (2001) suggested a model of organizational assessment that includes 4 types of data collection: (a) genetic data, (b) current descriptive data, (c) process data, and (d) interpretive data. The specialized assessment model (Braverman, 1999) describes a general approach to assessment that involves organizations using a team approach to solve crisis situations heuristically. Conversely, Adlerian and Behavioral models of organizational assessment are meticulously structured and based on algorithms (Brown et al.). Unfortunately, a common aspect of these models of organizational assessment is that the human impact of crises is often overlooked.

Assessing the totality of an organizational crisis means including understanding the effect the crisis had on the organizational members (Blake & Mouton, 1961). People are the cornerstones of organizations (Moorhead & Griffin, 1989; Viola, 1977); subsequently, people should not be forgotten in times of crisis. Organizations actually react the same way human beings do to crises (Weaver, 1988). More specifically, Pearson & Clair (1998) suggested that organizations, like individuals, react affectively, behaviorally, and cognitively to crises. In fact, the concept of organizations reacting affectively, behaviorally, and cognitively to crises is the crux of the present study.

Myer and Conte (2004) hypothesized specific ways organizations react affectively, behaviorally, and cognitively. For example, organizations responding affectively to crises may be experiencing difficulty with morale. Organizations experiencing disrupted meeting agendas would be responding behaviorally to crises;
while organizations responding cognitively to crises would be experiencing problems with decision-making. The conclusion Myer and Conte drew from hypothesizing that organizations demonstrate specific affective, behavioral, and cognitive reactions, is that accurate organizational assessment must include individuals’ perceptions of their organization’s affective, behavioral and cognitive reactions to crises.

A model that assesses affective, behavioral and cognitive responses to crises is the Triage Assessment Model (TAM) (Myer, Williams, Ottens, & Schimdt, 1992). Paton et al. (2000) noted that the best way to assess an organizational crisis is on a human level, and the TAM does this by addressing individual reactions. However, Paton et al. also noted that power exists in evaluating the aggregate score of a group of people. In other words, the most effective way to gather post-crisis assessments of an organization is to sample individuals’ perceptions of how their organization is handling the extant crisis. It is from this context that Myer (2002) developed the Triage Assessment Survey: Organizations (TAS:O), an instrument that was designed to sample individuals’ perceptions of their organization’s affective, behavioral and cognitive responses to crises.

Statement of the Problem

Whereas a bevy of organizational literature centers on crisis preparation (e.g., Braverman, 1999; Fink, 2002; Mitroff & Anagnos, 2001; Mitroff et al., 1996; Pauchant & Mitroff, 1992; Shonfeld et al., 2002), little is offered that describes what organizations should assess after the crisis has occurred. In fact, literature suggests that many organizations have a history of not assessing themselves well after a crisis
(e.g., Braverman; Fink; Mitroff & Anagnos; Mitroff et al; Pauchant & Mitroff; Shonfeld et al.). The organizational assessment models that exist offer general assessment guidelines (Brown et al., 2001), but fail to assess the collective human impact of crises. Thus, this study was performed to enhance organizational assessment, specifically addressing the collective human impact of crises by sampling individuals’ perceptions of how their organizations are responding to crises.

Purpose of the Study

The purpose of this research was to analyze the structure of the Triage Assessment Survey: Organizations (TAS:O), developed by Myer (2002). Specifically, construct validity of the TAS:O was evaluated using confirmatory factor analysis. Reliability was tested using an internal consistency model. In addition, this research analyzed the capacity of the TAS:O to distinguish among mild, moderate, marked and severe reactions of organizations to crises.

Rationale

Viola (1977) judged the failure to address the impact of crises on humans in an organization as a disconcerting practice. By ignoring the effects of crises on their workers, organizations do a great injustice to their members and affiliates (Braverman, 1999; Williams, 1978). The first step in addressing the human impact of crises is to assess how people have been affected by the particular crisis at hand (Levinson, 2002; Maxmen & Ward, 1995; Myer et al., 1992; Myer, 2001). Still, a review of the literature revealed no concise organizational assessment tool that measures the impact crises have on organizational workers. Specifically, no
organizational assessment tool was found that measures the affective, behavioral, and cognitive reactions of organizations after a crisis. Filling this void is the point of departure for the current study. Although not all crises are similarly traumatic, varying degrees of trauma can still reduce the capacity of individuals to fulfill their duties and advance the cause of the organization for which they work.

Significance of the Study

Most organizations tend not to think about being prepared for a crisis (Weick & Sutcliffe, 2001), and that lack of forethought ultimately causes problems with productivity (Mitroff et al., 1996; Pauchant & Mitroff, 1992). Along with a decrease in productivity, Greenstone & Leviton (2002) noted that when organizations experience a crisis, high stress levels become commonplace, absenteeism rises, teamwork dwindles, and very often, high turnover occurs. Successfully assessing organizational members’ reactions to a crisis, (or handling the human impact of a crisis), is an essential first step to curtail organizational turmoil and decline (Levinson, 2002).

Myer (2002) developed an assessment tool that measures organizational reactions to crises. By determining the reliability and validity of this instrument, this research will add to the field of crisis intervention by putting researchers and scholars a step closer to understanding organizational reactions to crises. More specifically, this research has been performed to help organizations to know if the TAS:O can be used to determine organizational affective, behavioral and cognitive reactions to
crises. This pragmatic research adds to the literature of crisis intervention by facilitating organizational assessment of the human impact of organizational crises.

Limitations

Limitations are restrictions on a study over which a researcher has no control (Rudestam & Newton, 2001). Three foreseeable threats to external validity exist for this study that may limit the ability of the results to be generalized (Houser, 1998). The Hawthorne Effect, the novelty effect, and disruption effect could possibly threaten external validity (Houser). The Hawthorne Effect occurs when people are aware that they are participating in a research experiment (Houser). Specifically, the Hawthorne Effect means that participants may alter their answers because they know that they are being observed (Houser). Novelty effects occur when any dependent measure gains are a result of being exposed to something that is new (i.e., the independent variable), rather than the actual effects of the treatment (Houser). Disruption effects occur when an unexpected disruption occurs during the experiment (Houser). While the Hawthorne, novelty and disruption effects are similar, they diverge in that in the Hawthorne Effect, participants actively attempt to alter the outcome, while the novelty and disruption effects are more like experiencing a new gadget, in that attention is diverted (Houser).

Delimitations are limitations on studies that researchers impose (Rudestam & Newton, 2001). A delimitation for this study occurs because participants will be responding to hypothetical scenarios rather than actual organizational crises. Therefore, a discrepancy may arise between the participants of this research
(responding to artificial crises) and organizational members’ responses to actual crises. While a participant may respond to behavioral questions on the TAS:O in one way, there can be no accounting for the extraneous variable of social influence. For example, responses to number 27, “People have to do other people’s jobs” may be altered by individual reactions to the crisis. Whereas participants may mark that they do not believe that people will have to do other people’s jobs, in actuality, that may not be the case. In other words, just because individuals indicate that they will act a certain way in a crisis situation does not mean that they will. Thus, the use of hypothetical scenarios is a delimitation for this study.

The rationale for imposing this delimitation on the study is that by using case scenarios, participants will not themselves be victims of a crisis. Serious implications and ethical constraints exist in performing field studies on highly emotionally individuals. Therefore, to perform an ethical study with the best interests of the participants involved, case scenarios were used. However, because this research took place in a laboratory, it is likely to have lower external validity than if the study took place as a field experiment. Thus, the laboratory setting itself also becomes a delimitation for this study.

Definitions

Organization – The entire personnel of a business.

Organizational crisis - An experience of an event that alters the homeostasis of the organization, disrupting the organization’s routine functioning.
Mild reaction – In regard to the TAS:O, a response to a crisis that indicates the need for minimal and indirect crisis intervention.

Moderate reaction – In regard to the TAS:O, a response to a crisis that indicates the need for reasonable and collaborative crisis intervention.

Marked reaction – In regard to the TAS:O, a response to a crisis that indicates the need for more direct crisis intervention.

Severe reaction – In regard to the TAS:O, a response by to a crisis that indicates the need for rigorous and direct crisis intervention.

Summary

Crises are inevitable for organizations, and the way an organization prepares for a crisis often determines how that organization will respond to the crisis. Having an effective assessment process is integral for an organization to handle a crisis. Myer (2002) developed an instrument (Triage Assessment Survey: Organizations) that appears to assess organizations’ affective, behavioral and cognitive reactions to crises. The present study was designed to test the reliability and validity of the TAS:O.
CHAPTER TWO

LITERATURE REVIEW

Since the tragic event known worldwide as 9/11, the subject of organizational crises has become a rapidly expanding field. The importance of understanding the effects of crises on organizations has gained a new immediacy. This research was performed to add to the literature of organizational crisis management. Specifically, the purpose of this research was to analyze the structure of the Triage Assessment Survey: Organizations (TAS:O), developed by Myer (2002). Construct validity of the TAS:O was evaluated using confirmatory factor analysis. Reliability was tested using an internal consistency model. In addition, this research analyzed the capacity of the TAS:O to distinguish among mild, moderate, marked and severe reactions of organizations to crises.

The subject of organizational crises does not have a long history in scholarly literature (Fink, 2002). However, because of new threats that have fundamentally changed the organizational world (Mitroff, 2004), literature on this topic is rapidly expanding. Though the goal of this study is to analyze the psychometric properties of an instrument that purports to measure organizational reactions to crises, this literature review is not a review of empirical research. Primarily, this is because crisis literature has focused on providing aid and support rather than empirical data (Myer & Moore, 2004). This is not unusual considering the first response in crisis
intervention is to provide aid and support (McFarlane, 2000), not to perform systematic research (Raphael, Wilson, Meldrum, & McFarlane, 1996).

This literature review is divided into three main sections. The first section explores the structure of modern organizational crisis management, which is generally considered to be a little over 20 years old. The second section describes characteristics of organizational reactions to crises. Evaluating organizational reactions to crises demonstrates that a model of crisis management is more effective for handling organizational crises than haphazard methods. Finally, the third section of this literature review describes the Triage Assessment Model (Myer et al., 1992) and its relevance to organizational crises.

Organizational Crisis Management

Organizational crisis management begins with planning for a crisis (Fink, 2002), and includes resolving the uncertainty by allowing organizations to regain homeostasis (Fink; Mitroff, 2004; Mitroff et al., 1996). Four main phases appear to emerge from the literature that summarize organizational crisis management. These four major phases of organizational crisis management are: (a) prevention, (b) preparation, (c) response, and (d) recovery. Each of these phases can be regarded as a means to facilitate organizational management of crises.

Prevention primarily involves the physical precautions organizations take to ensure safety. Prevention entails the tasks organizations actually complete to safeguard the workers, stakeholders and surrounding community (Rapoport, 1965). By not taking preventative steps, disasters can happen. For example, after Union
Carbide’s infamous disaster that killed 4,000 people at their Bhopal, India plant in 1984, their American counterparts thoroughly examined the specific preventative steps they used for containing the lethal gas methyl isocyanate (MIC). Prevention, therefore, not only occurs at the start-up phase of organizations, but is also a part of their ongoing crisis management.

In the business world, efforts continue to be made in regard to preparing organizations for what might occur (Braverman, 1999; Fink 2002; Mitroff & Anagnos, 2001; Pauchant & Mitroff, 1992; Winter & Steger, 1998). Research has demonstrated that effectively prepared organizations can significantly lessen the damage that results from crises (Fink; Weick & Sutcliffè, 2001). Mitroff et al. (1996) found a positive correlation between crisis prepared organizations and their ability to effectively handle crises. Though literature for organizational crises differs on methods that constitute specifically what crisis preparation means, organizational crisis literature (e.g., Barton, 2001; Fink, 2002; Laye, 2002; Mitroff, 2004; Mitroff & Anagnos, 2001; Mitroff et al., 1996; Parsons, 1996; Pauchant & Mitroff, 1992; Weick & Sutcliffè, 2001) seems to agree that having a crisis plan is a necessary though not sufficient aspect of crisis preparation. A crisis plan is therefore vital to organizational crisis management (e.g., Braverman; Fink; Laye; Mitroff; Mitroff & Anagnos; Pauchant & Mitroff; Weick & Sutcliffè).

Unfortunately, regardless of the time and effort put into preparing organizations for crises, ultimately, nothing can stop some crises from occurring (Fink, 2002; Mitroff & Anagnos, 2001). Once a crisis occurs, the immediate
behavior an organization exhibits is the response phase. Many authors (e.g., Braverman, 1999; Fink; Mitroff & Anagnos; Mitroff et al., 1996; Weick & Sutcliffe, 2001) have described reactions that have enhanced or destroyed organizations at this phase of organizational management. An example of an effective organizational response occurred in 1982. Johnson & Johnson responded to having their Tylenol capsules laced with cyanide, and seven subsequent deaths, by being open with the press, and willing to recall their product at all costs (Fink). This response saved the company, and is generally regarded as a model of effective organizational response to crisis (Fink; Mitroff & Anagnos; Pauchant & Mitroff, 1992; Winter & Steger, 1999).

Thus, the response phase is usually defined as the acute phase (Roberts, 2000). Once the response phase has been initiated, the focus becomes assessing the situation.

Whether it is formal or informal, the first step organizations usually take during the response phase is assessment (Laye, 2002; Levinson, 2002). Only a limited amount of time exists to do post-crisis assessments (Myer et al, 1992), but assessing the damage done is vital to planning how organizations will handle crises (Levinson). Albrecht (1983) noted that assessing organizational reactions to a crisis entails understanding the culture of the organization, and at least part of the organizational culture can be understood by examining the bureaucratic hierarchy (Brown et al., 2001). Examining the hierarchy is often an early, if not first step in organizational assessment (Brown et al.). Primarily, the hierarchy is examined early so the most pragmatic channels of communication can be established (Brown et al.).
However organizations choose to assess a crisis, assessment is a vital part of the response phase.

Based on a summary of current crisis literature, the final phase in organizational crisis management appears to be the recovery phase. During this phase, organizations implement strategies to address the results of their assessment. Whether or not this implementation is ill-prepared and ineffective, as in the case of Bhopal (Fink, 2002), or well prepared and effective, as in the case of the 1982 Tylenol crisis, organizations focus on what they deem appropriate from their assessment. Generally, during the recovery phase, organizations implement short-term and long-term business recovery programs to assist the recommencement of normal business operations (Mitroff et al., 1996).

A complete literature review thus seems to divide organizational crisis management into four main phases: prevention, preparation, response and recovery. Each of these phases is an important part of crisis management, and each appears interconnected to the next. Historically, regardless of the level of effectiveness, organizations appear to move through all four phases. The more ineffective organizations are during earlier stages, the less likely they are to do well in the recovery phase.

Characteristics of Organizational Reactions

Organizations, like human beings, have energy and emotion, and are affected by other systems (Levinson, 2002). Organizations undergo damage from their environments (Levinson), and like human beings, react in disparaging ways (Weaver,
Therefore, just as human beings react affectively, behaviorally and cognitively to crises (Myer, 2001), organizations react the same way (Pearson & Clair, 1998). In fact, just as human beings have complicated reactions to crises, so do organizations (Brown et al., 2001).

Specific indicators exist that describe how organizations react to crises. For example, organizations react affectively to crises (Myer, 2002; Pearson & Clair) through difficulties with morale (Paton et al., 2000; Sagini, 2001), rumors (DiFonzo & Bordia, 2000) and loyalty (Schein, 1985). Organizations exhibit behavioral responses through problems with meeting agendas (Greenstone & Leviton, 2002), organizational roles (Paton et al., 2000) and level of functioning (Myer). Organizational reactions that are cognitive in nature exhibit obstructions in decision-making, system dynamics and organizational goals (Myer). Hence, organizations appear to specifically react to crises in affective, behavioral and cognitive ways.

**Affective Reactions**

People’s work performances can be affected by their emotions (Sagini, 2001), and organizational crises affect how people feel. Thus, affect plays a significant role in organizational crises (Pearson & Clair, 1998) because it has an impact on people in their work. In reality, the emotional state that organizations undergo after a crisis is one of the most important aspects of any crisis situation (Mitroff et al., 1996). Some organizations have a tendency to suppress emotional reactions, which leads to an increase in their vulnerability (Paton et al., 2000). Others take immediate action and can halt the emotional pain that is created by organizational crises (Greenstone &
Leviton, 2002). Thus, organizations that effectively and immediately assess their affective responses to crises seem to have a better success in the long run than organizations that suppress affective responses.

Myer (2002) noted that affective responses are most often exemplified through problems with morale, rumors and loyalty. Morale is the basic tenet by which organizations gauge their emotional selves (Brenneman, 2000). Managers are often deemed effective if they can boost organizational morale (Greenstone & Leviton, 2002). Morale boosting and dismemberment are accomplished through communication (Williams, 1978). For morale to be boosted or maintained, an organization must become successful at communicating information to its employees (Mitroff et al., 1996). In fact, in times of crises, Lernbinger (1997) noted that employers have a responsibility to communicate fully to their employees. Unfortunately, miscommunications occur frequently after crises (James & Gilliland, 2001; Myer, 2001), and this often leads to dismemberment (Williams).

Rumors are unconfirmed bits of information that are important to people (DiFonzo & Bordia, 2000). Because crises leave many questions unconfirmed, after crises organizations become susceptible to rumors. People tend to use rumors to bring a sense of meaning and control to events that are perceived as overwhelming or uncontrollable (DiFonzo & Bordia). Before, during, or after crises, rumors are used as defense mechanisms to clarify or justify the situation (Mitroff et al., 1996). Unfortunately, simply understanding that rumors are used as defense mechanisms does not lessen the harmful effects on recovering organizations (DiFonzo & Bordia).
However, if an organization is aware of the causes and effects of rumors, it will be much less likely to allow rumors to be used as defense mechanisms (Pauchant & Mitroff, 1992).

Organizations are damaged by rumors because rumors tend to produce anxiety (Wetlaufer, 2000). Anxiousness typically stems from feeling threatened with no way out (May, 1950). In other words, anxiety comes from the perception of not having control over a situation. Anxiety is deleterious to an organization because it tends to cue a state of anxiety in the members of an organization (Pauchant & Mitroff, 1992). Counselors from many theoretical approaches would agree that the best way to deal with anxiety is to confront it (Corey, 1996; Sharf, 2004). But as the tenets of Freudian thought have taught us, we cannot confront what we do not know exists (Corey; Sharf). Unfortunately, identifying rumors is not a part of extant organizational crisis assessment instruments.

The strength of organizations’ cultures is positively correlated with loyalty (Schein, 1985). Loyalty is the degree to which an organization can accept and use a set of beliefs through the use of language and symbols (Sagini, 2001). Sagini noted that loyalty produces an effective conformity in that the goals of the individual and the organization are the same. Without loyalty, the strength of organizations can rapidly deteriorate (Sagini). In fact, Braverman (1999) noted that when loyalty is low an increase in potential violence occurs. Thus, loyalty is an essential aspect of organizations’ affective responses to crises.
Affective responses are measures of organizations’ morale, rumors and loyalty. Because ineffective communication appears to lessen the quality of each, it is important for organizations to identify sub-par communications as quickly as possible. By identifying specific aspects of organizations’ ineffective affective responses, organizations will have the opportunity to address troubled areas more precisely.

**Behavioral Reactions**

Pearson & Clair (1998) noted that a crisis pushes an organization into action. Action is the keystone of behavioral responses of organizations to crises. Behavioral responses can be described as empirically observable events (Glassman, 2000). It is significant to understand the post-crisis behavioral responses of organizations because these responses affect the future of the entire organization (Banner & Gagne, 1995). Three empirically observable ways that organizations respond to crises are: disrupted meeting agendas, distorted roles and altered levels of functioning (Myer, 2002; Myer & Conte, 2004).

Meeting agendas dictate the direction of organizations (Moorhead & Griffin, 1989). When an organization is preoccupied with a crisis, however, the agenda of a meeting can be significantly altered (Greenstone & Leviton, 2002). The agendas are altered to focus on the present crisis (Wetlaufer, 2000); and as Myer & Conte (2004) noted, common sense dictates that in a time-limited meeting, whatever time an organization devotes to a crisis takes away time from the normal business agenda. Though it is effective for post-crisis meeting agendas to become solution-focused
until the crisis is resolved, that does not always happen (Braverman, 1999; Fink, 2002).

Anytime rules and procedures are a dominant part of an organization, roles are important (Moorhead & Griffin, 1989). Roles can be defined as the part individuals play in a work group (Moorhead & Griffin). Specifically, roles encompass sets of expected behavior patterns attributed to individuals occupying a given position in an organization (Robbins, 1993). Healthy organizations have well defined roles, and those who carry out the stated roles do so without role ambiguity (Moorhead & Griffin; Robbins).

Frequently during a crisis, organizational roles can become distorted due to the disruption of day-to-day routines (Paton et al., 2000). When roles are distorted, role conflict occurs (Robbins, 1993), and organizations cannot communicate and/or respond to previously stated expectations (Moorhead & Griffin, 1989; Schermerhorn et al., 1994). Distorted roles cause problems for organizations because they inhibit effective distribution of responsibilities (Myer & Conte, 2004). Therefore, roles must be clear and unambiguous for the crisis to be resolved, and for the organization to recover. Once roles are clearly defined and implemented, organizations begin to operate at a higher level of functioning (Moorhead & Griffin; Schermerhorn et al.).

Whether it is effective or ineffective functioning, organizations operate at a certain level of functioning (Myer & Conte, 2004). The goal of organizations in regard to functioning is to maintain homeostasis (Sagini, 2001). By its very definition, a crisis has an impact on an organization’s level of functioning. A
pragmatic example of an organization’s level of functioning being impacted is the statistic that employees tend to take excessive time off work after a crisis (Greenstone & Leviton, 2002). Another example occurs when decision makers ignore threats that have the potential to physically take them out of the situation (Myer & Conte). For instance, it is difficult to maintain a certain level of functioning when decision makers are either incommunicado or in absentia (Fink, 2002).

Organizations’ behavioral responses are explicit in that they can be empirically measured. Meeting agendas, roles, and levels of functioning are all aspects of organizations’ behavioral responses to crises. Theoretically, if organizations can identify maladaptive behavioral responses to crises, they augment their chances of handling crises effectively.

**Cognitive Reactions**

As with affective and behavioral responses, an organization will also react in specific cognitive ways (Pearson & Clair, 1998). People’s thoughts play a major role in creating vulnerabilities (McEntire, 2001). Myer (2002) noted that the cognitive reactions of organizations center on decision-making, organizational goals and system dynamics. Whereas all three of these organizational cognitive responses are interdependent (Myer & Conte, 2004), they are also independently significant. The interdependence of decision-making, goals and dynamics occurs in many combinations. For instance, organizational decisions can affect organizational goals, which, in turn, affect the dynamics of the system (Myer & Conte). Another example of this interdependence could occur if the dynamics of the system influence the goals,
and thus the way organizations make decisions. Mathematically, there would be six combinations demonstrating the interdependence of the three proposed cognitive responses of organizations. If the intention of organizations is to get to the root of the problem, it is important to single out the most significant cognitive response.

The staple of any organization is decision-making (Moorhead & Griffin, 1989). Without decision-making, there can be no organizational goals (Moorhead & Griffin; Sagini, 2001). Simply put, an organization cannot subsist without decision-making (Myer & Conte, 2004). After all, little can be accomplished when decision-making goes awry. Banner & Gagne (1995) noted that it has been demonstrated through systems theory that everything affects everything else. During or after a crisis, the decisions made affect the entire organization (Myer & Conte).

Unfortunately, it is common for organizations to have difficulty with decision-making during and after a crisis (Greentstone & Leviton, 2002). During crises, pressure to make effective decisions is augmented by perceived time constraints and strained by cognitive limitations (Pearson & Clair, 1998). Difficulty occurs, according to Fink (2002), when decision-makers demonstrate premature closure; that is, when decision-makers act without considering all of the available alternatives. Fink also noted that during a crisis, organizations tend to rely too much on cognitive rather than behavioral decision-making. In other words, it is important for decision-makers to ask the question, “What do we have to do to produce the best solution?” (Fink). Often what needs to be done is a reevaluation of organizational goals (Myer & Conte, 2004).
Mitroff et al. (1996) noted that after, and even during a crisis, the goals of organizations change. The severity of the crisis determines whether or not these changes signify a problem for organizations (Myer & Conte, 2004). At a minimum, organizations have to expel some energy toward resolving a crisis, because to not do so is too ineffective (Braverman, 1999; Mitroff et al.). Seen in this light, organizational goals are affected in some way by a crisis.

To understand the impact of an organization’s inability to see how its goals are being altered during a crisis, an analog can be drawn from counseling. Individuals often come to counseling with little or no insight into their problems (Corey, 1996; Sharf, 2004), but with only a vague idea that something is wrong. Effective counselors challenge client’s introjections (Perls, 1973) and assumptions about the world (Corey; Sharf) to increase insights. Similarly, if organizations can become aware of their introjected ways of responding to a crisis, they can establish more clear goals (Myer & Conte, 2004).

Both the decisions and goals of an organization affect the system dynamics. System dynamics are the interactions among groups and individuals in a given system. Decision-makers establish organizational goals, and organizational goals directly affect the system dynamics. Problems enter a system when responsibility is not accepted (M. Krushinski, personal communication, September 28, 2003). Unfortunately, a natural tendency exists for decision-makers to shift blame away from themselves during a crisis (Banner & Gagne, 1995). As a different entity in the situation, blame directly affects system dynamics (Banner & Gagne).
Like the affective and behavioral responses of organizations to crises, cognitive responses also must be evaluated to accurately complete an effective post-crisis assessment (Myer & Conte, 2004). Cognitive responses are observed through organizational decisions, goals, and system dynamics (Myer & Conte). While each of these is independently important, each is interdependent on the other. As with affective and behavioral responses, Pearson & Clair (1998) noted that identifying ineffective cognitive responses early leads to more effective handling of organizational crises.

The Triage Assessment Model

A careful examination of the literature reveals that few existing models of organizational crisis management address the human impact of crises. The Triage Assessment Model (TAM) (Myer, Williams, Ottens, & Schmidt, 1992) addresses the human impact of crises, but was developed for individuals. However, the TAM can be an analog for organizations because, as Fink (2002) noted, the way that people plan for or respond to personal crises is not much different than the way organizations plan for or respond to crises.

The TAM has been demonstrated to be an effective crisis management model for individuals (Myer et al., 1992). The Triage Assessment Survey: Organizations (TAS:O) (Myer, 2002) has been adapted from the TAM. The TAS:O, which has been created from a rational-theoretical approach (Lanyon & Goldstein, 1997) and has legitimate face validity, was developed to determine whether the TAM
might be used as an effective comprehensive model for assessing organizational reactions to crises.

The TAM is based on the concept that has been around since the birth of psychology: namely, that understanding pathology can be a resource for improving health (Brown, 1997; Glassman, 2000; Maxmen & Ward, 1995). Specifically, the model was intended to assess individual responses to crises across three domains: (a) affective, (b) behavioral, and (c) cognitive (Myer et al.). These three domains are further subdivided into three categories each.

Myer et al., (1992) determined that the affective domain includes reactions based on research of primary emotions: anger, fear and sadness. According to Myer et al., the three behavioral reactions to crises occur as some form of: approach, avoidance and immobility. Lastly, the cognitive reactions of individuals are classified as a threat, loss or transgression (Myer et al.). While Myer (2001) noted that these three domains (affect, behavior and cognition) should be viewed in light of individual cultural backgrounds, Kluckhohn (1961) demonstrated that peoples of all cultures feel, act and think. Thus, though individual cultural backgrounds are important to consider, it is more significant to note that all human beings react affectively, behaviorally and cognitively to crises. Pearson & Clair (1998) noted that organizations, despite vast differences in culture, also react affectively, behaviorally and cognitively to crises.
The Triage Assessment Model Adapted for Organizations

Myer & Conte (2004) theorized that the TAM can be adapted by organizations to assess their reactions to crises. As stated previously, no matter how well prepared an organization is, crises will occur (Braverman, 1999; Fink, 2002; Pauchant & Mitroff, 1992). Any given organization will react with affective, behavioral and cognitive responses (Pearson & Clair, 1998), which are the three primary target areas of the TAM.

A healthy recovery for crisis-struck organizations involves using pattern exploration as a diagnostic tool (Brown, 1997). In other words, rather than evaluating people as isolated entities, pattern exploration is a means to observe the aggregate of organizational behavior. The TAM does this by assessing the patterns that individuals demonstrate after a crisis (Myer, 2001). The use of pattern exploration allows organizations to focus their time, energy and resources in the most appropriate direction (Myer & Conte, 2004). As Brown noted, pattern exploration enables organizations to see, hear and feel what they otherwise would not be able to. The TAM has been adapted for organizations to use for post-crisis pattern exploration (Myer & Conte).

Several advantages exist to using the TAM in organizational assessment. An important advantage is the TAM promotes autonomy. Deetz et al. (2000) noted that autonomy alone sustains organizations. Because organizations benefit from increased autonomy (Brown et al., 2001), the TAM emphasizes managerial rather than outside support (Myer & Conte, 2004). The advantage to managerial support goes beyond
self-sufficiency. Unfortunately, a reality is that crisis workers may have seen a particular crisis problem so many times in the past that they may generalize individual reactions (Myer, 2001). It is a logical progression to assume that by teaching the TAM to managers, organizations will increase their autonomy. After all, instead of relying on outside consultants for effective crisis treatment, organizations whose managers are trained in the TAM can contain crises without outside help.

Summary

This chapter explored the structure of modern organizational crisis management, characteristics of organizational reactions to crises, and how the Triage Assessment Model applies to organizational crises. First, each of the four major phases of organizational crisis: (a) prevention; (b) preparation; (c) response; and (d) recovery, were described. The first phase involves risk assessment, the second entails business impact analysis, the third describes organizations’ responses to a crisis, and the fourth depicts how organizations attempt to recover from a crisis. Understanding these four phases allows organizations to have a better chance of effectively handling crises.

Next, this chapter explored characteristics of organizational reactions to crises. The crux of the present study relied on Pearson and Clair’s (1998) statement that organizations, like people, react affectively, behaviorally, and cognitively to crises. Thus, the manifestations of organization’s affective, behavioral, and cognitive reactions were evaluated.
Finally, this chapter explored the Triage Assessment Model and its relevance to organizational crises. The Triage Assessment Model for crisis management is based on the premise that people react to crises in affective, behavioral, or cognitive responses. Adapting the Triage Assessment Model to organizations set the context for the present study; namely, to analyze the structure of an instrument that measures organizations' affective, behavioral, and cognitive responses to crises.
CHAPTER THREE
METHODOLOGY

The purpose of this research was to analyze the structure of the Triage Assessment Survey: Organizations (TAS:O), developed by Myer (2002). Specifically, construct validity of the TAS:O was evaluated using confirmatory factor analysis. Reliability was tested using an internal consistency model. In addition, this research analyzed the capacity of the TAS:O to distinguish among mild, moderate, marked and severe reactions of organizations to crises. In this chapter, participants, the instrument being used for the research, the research design, materials needed for the study, the procedure, data analysis, and hypotheses for this study will be described. This chapter introduces the reader to the methodology used.

Sample

The target population for this study is any person working in an organization. The accessible population for this study was collected through convenience sampling. Specifically, the participants consisted of 117 college students enrolled in graduate programs. Of the 117 participants who volunteered for this study, 56% were female, and 44% were male. The average age of the participants was 28 years old. The participants had an average work experience of 5.48 years. Twenty-one percent of the participants had work experience with non-profit organizations, 24% with for-profit organizations, 33% with human service organizations, 9% with service enterprise organizations, 5% with merchandiser organizations, 1% with
manufacturing firms, and 2% had experience with “other” organizations. Eighty-one percent of the participants had Bachelor’s degrees, while 19% had Master’s degrees. The ethnic backgrounds of the participants were as follows: 91% White; 7% Black; 1% Asian; and 1% Hispanic. All of the participants were U.S. citizens.

Instrument

The purpose of the Triage Assessment Survey: Organizations (TAS:O) is to sample people's perceptions of how their organization is reacting to a crisis (Myer, 2002). This instrument was designed from a rational-theoretical approach (Lanyon & Goodstein, 1997) that assigned meaning to the items presented. In other words, the instrument’s author believed that the items tap into the constructs in which he was interested (Lanyon & Goodstein). Thus, an example of the author’s sampling from the universal content for organizational responses to crises occurs in item number 2, “Assigned responsibilities have not changed.” This item specifically asks respondents about behavior that indirectly reflects the construct of organizational behavioral responses via understanding whether or not any “assigned responsibilities” have changed.

It was through this rational-theoretical approach that content validity was established for the TAS:O. Content validity is determined by an in-depth analysis of an instrument by an expert who is knowledgeable about the content domain (Friedenberg, 1995). More specifically, the TAS:O was created and revised by an expert consultant who used research and experience to establish that the items on the TAS:O drawn from the universal content are actually representative of the three
constructs (affect, behavior and cognition). For example, the author used experience to determine that the number and content of the items on the TAS:O adequately represent the concept of organizational affect. In other words, for the TAS:O to exhibit content validity, the items should be of a proportional number and type of the universal content.

The items for the TAS:O were examined using qualitative item-writing criteria (Edwards, 1957), including (a) writing items in the present tense; (b) avoiding double-barrelled items; (c) avoiding ambiguous statements; (d) avoiding statements that were irrelevant to organizational crises; (e) avoiding the words “never,” “all,” “always,” and “none” (often named specific determiners); and (f) avoiding statements longer than 20 words. Items deemed unacceptable were revised or eliminated (R. Myer, personal communication, December 3, 2004), and the remaining 27 items served as the TAS:O. A copy of the TAS:O can be found in Appendix A.

The TAS:O is a 27-item, 5-point Likert summated rating scale. Likert responses range from Strongly Disagree to Strongly Agree. According to Myer (2002), the score for each item ranges from 1 to 5. Items marked Strongly Disagree are assigned 1 point; items marked Disagree are assigned 2 points, items marked Agree are assigned 4 points, and items marked Strongly Agree are assigned 5 points. For all items, Not Sure is assigned 3 points (R. Myer, personal communication, June 10, 2004).

The rationale for assigning items marked Strongly Disagree 1 point can be understood by examining item number 5, “Pride in the organization has faded.”
People who do not perceive that pride in the organization has faded will likely mark Strongly Disagree. The more items that are marked Strongly Disagree will lead to a lower composite score, indicating that the organization is perceived to be experiencing a less severe crisis. Following this rationale, Disagree is assigned 2 points and Agree is assigned 4 points. Strongly Agree is assigned 5 points because it is assumed that people who believe that pride in the organization has faded will mark Strongly Agree to item number 5; thus leading to a higher composite score and an indication of a more severe crisis. It should be noted that for items 1, 2, 7, 8, 18, 19, 20, 25, and 26, reverse scoring occurs.

The total summated raw scores for this instrument ranges from 27 - 135. If more than six items are omitted, the form is considered incomplete (R. Myer, personal communication, April, 20, 2004). Myer (2002) theorized that the total scores for the TAS:O will be arbitrarily classified, but based on a cross tabulation between expected scores and actual scores. In other words, composite scores that fall between 108 -135 will be classified as a severe reaction to a crisis. Scores that fall between 81-108 will be classified as a marked reaction to a crisis. Scores that fall between 54 - 81 will be coded as a moderate reaction to a crisis. Finally, scores that fall between 27-54 will be identified as mild reactions to a crisis. Table 2 illustrates the hypothesized classification system for scoring the TAS:O. This classification scheme was examined using a chi-square goodness of fit test.

Along with the total scores, the total subscale scores were also analyzed. The TAS:O has three subscales (Myer, 2002). The subscales are Affective responses,
Behavioral responses, and Cognitive responses. Each subscale has nine items devoted to it. Specifically, items 1, 3, 5, 9, 13, 15, 17, 18, and 21 fall within the Affective subscale. Items 2, 4, 7, 8, 11, 19, 22, 24, and 25 fall within the Behavioral subscale; and items 6, 10, 12, 14, 16, 20, 23, 26 and 27 fall within the Cognitive subscale. Higher scores on a particular subscale indicate an organizational need to address that area (Myer). For example, the higher the collective total score on the affective subscale, the greater the necessity for the organization to address affective responses (Myer).

Design

This study is a quantitative, true-experiment that utilizes a one way, between-subjects experimental design. The participants were exposed to the entire treatment (X). Specifically, the participants took the TAS:O in response to a mild, moderate, marked and severe crisis scenario. Each participant read all four scenarios and responded to the TAS:O four times. Participants were given the scenarios in a random order. One example of the possible combinations of the independent variables was to present the participants with the moderate crisis scenario first, followed by the severe crisis scenario, then the mild crisis scenario, and lastly the marked crisis scenario. Participants had a random chance of being exposed to one of 24 possible combinations of the four scenarios. After reading all four organizational crisis scenarios and responding to four TAS:O surveys, the total scores that the participants provided make up one observation of the dependent variable (O). The subscale scores were another observation of the dependent variable. An illustration
of this design can be found in Table 1.

Table 1

*Illustration of the Design of the Study*

<table>
<thead>
<tr>
<th>R  (Random assignment)</th>
<th>X1  (Response to the TAS:O after reading the mild crisis scenario)</th>
<th>O1  (Score on TAS:O after reading the mild scenario)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X2  (Response to the TAS:O after reading the moderate crisis scenario)</td>
<td>O2  (Score on TAS:O after reading the moderate scenario)</td>
</tr>
<tr>
<td></td>
<td>X3  (Response to the TAS:O after reading the marked crisis scenario)</td>
<td>O3  (Score on TAS:O after reading marked scenario)</td>
</tr>
<tr>
<td></td>
<td>X4  (Response to the TAS:O after reading the severe crisis scenario)</td>
<td>O4  (Score on TAS:O after reading severe scenario)</td>
</tr>
</tbody>
</table>

Procedure

Before any research was performed, the Institutional Review Board (IRB) was contacted for approval. The appropriate guidelines outlined by the American Counseling Association’s Code of Ethics, specifically *Section G: Research and publication* (Welfel, 2002) were followed. A pilot study was conducted before the present research was performed. A description of the pilot study can be found in Appendix E.

Participants were introduced to the study and informed of any potential risks or benefits that may occur from participating in this research. A copy of the informed consent can be found in Appendix B. Participants were given pencils and a copy of either a mild, moderate, marked, or severe crisis scenario, and a copy of the TAS:O. The scenarios are provided in Appendix C. Participants were asked to read the
scenario and then fill out the TAS:O. The specific directions that the participants heard were:

“Your packet contains four case scenarios for you to read and four surveys for you to fill out. Each scenario describes an organization experiencing a crisis. Please read the scenario and then fill out the corresponding survey as if you were a member of the organization described in the scenario. Please mark your answers with a number 2 pencil on the scantron answer sheet provided. When you have finished filling out all four scenarios, please leave the room until everyone is finished. Does anyone have any questions? If any questions come up while you are taking the survey, please raise your hand and I’ll be happy to answer them for you.”

Participants filled in their responses to the TAS:O on a scantron answer sheets. The scantron sheets were scored and a copy of the answers in alphabet form (a, b, c, d, or e) were obtained. A program was written to convert the data to numerical form. The numerical answers were put in Microsoft Excel before being pasted into SPSS.

Scenarios were used to simulate organizational crisis situations. When researchers are evaluating test validity, scenarios are used for their predictive qualities (Hirschhorn, 1980). Hirschhorn described two different approaches to writing scenarios: process approach and developmental approach. The process approach is used when the goal of the scenario is to provide a sequence of events that led to the present condition (Hirschhorn). Developmental scenarios are based on the
assumption that the entire happenings in the scenarios are interconnected (Hirschhorn). For this study, the scenarios were created based on a combination of the process approach and developmental approach. The process approach was used insofar as the scenarios incorporated a series of events that occurred and continue to occur throughout an organization. The developmental approach was utilized because crises affect organizations as a whole. In other words, a rumor on the first floor of an organization can affect the moral on the second floor, which can affect production on the third floor and alter decision making on the top floor. The scenarios can be found in Appendix C.

Data Analysis

Because the TAS:O has not yet been empirically tested to determine its validity and reliability, data will be analyzed using the SPSS 12.0 RELIABILITY and FACTOR ANALYSIS programs (Norusis, 1988). First, the reliability of the TAS:O was determined by running the following three tests: Cronbach’s alpha, a Spearman-Brown formula split-half reliability, and item total correlation. To determine whether or not mean differences exist among the four scenarios, an ANOVA was run on the total score and a MANOVA was run on the three (affect, behavior, cognition) total subscale scores. In order to test the construct validity of the TAS:O, factor analysis was used. Specifically, confirmatory factor analysis was run on the data to determine to what degree the three factors (affect, behavior and cognition) on the TAS:O are represented by individuals’ responses of an organization’s reaction to mild, moderate, marked, and severe crisis scenarios. Confirmatory factor analysis was used for three
reasons: (a) the a priori hypothesis stated that the TAS:O would measure 3 factors, (b) interpretability of the factor solution followed the a priori hypothesis, and (c) the Scree test indicated that the TAS:O would best be described by a 3 factor solution.

Instruments in the social sciences must have reliability (Friedenberg, 1995). Reliability refers to the degree of consistency with which an instrument measures whatever it is measuring (Cozby, 2001; LaFountain & Bartos, 2002). Reliability can be tested three different ways: test-retest reliability, alternate forms reliability, or internal consistency (Friedenberg). However, reliability is most frequently reported through the use of internal consistency (Houser, 1998). Internal consistency demonstrates reliability by describing the homogeneity of the items (Friedenberg, 1995; Heppner et al., 1999).

The test-retest reliability method was not chosen because in order to conduct a repeated measures design, four equivalent scenarios would have to be created. Because a crisis is defined as a perception of an event, creating equivalent scenarios would have posed significant threats to the reliability. Alternate forms reliability was not an option because only one form of the TAS:O currently exists. Thus, the TAS:O was tested using an internal consistency model. Specifically, a Cronbach’s alpha, Spearman-Brown test, and an inter-item total correlation were run on the TAS:O.

To conduct an internal consistency study, the instrument only has to be administered one time (Heppner et al., 1999). One test of internal consistency is the Cronbach’s alpha. The Cronbach’s alpha calculates the correlation of each item with every other item (Cozby, 2001). A Cronbach’s alpha was completed on the data
using SPSS computer software. First, a Cronbach’s alpha was run on the total score. Next, individual Cronbach’s alphas were run on the predicted Affect, Behavior, and Cognitive subscales. By doing so, all the items were compared on the TAS:O that involve affect with only the Affective subscale scores, all the items that correspond with behavior with only the Behavioral subscale scores, all the items that describe the cognition with only the Cognitive subscale scores.

To more thoroughly examine the internal consistency of this instrument, a Spearman-Brown formula was also run on the data. Like Cronbach’s alpha, the Spearman-Brown formula, or split-half reliability test, also only requires a single admission to participants (LaFountain & Bartos, 2002). For the Spearman-Brown formula, the items on the TAS:O were divided into two comparable odd/even halves. The scores from the two halves were correlated and calculated. However, since the split-half technique tends to overestimate the reliability (LaFountain & Bartos), a third method of testing reliability was used.

The final step used to determine the internal consistency of the TAS:O was the use of item total correlation. Item total correlation analyzes the correlation between each item and the total test score (Murphy & Davidshofer, 2001). Typically researchers hope for a positive correlation, as a correlation coefficient near zero shows no association, and a negative correlation coefficient demonstrates that the item actually disagrees with the test (Murphy & Davidshofer). A key advantage to using item total correlation is the data can be treated as a correlation coefficient and the variance can be explained (Murphy & Davidshofer).
A goal of this research is to gather preliminary information on the differences among mild, moderate, marked and severe crises. Four groups of scores were analyzed for this study. The statistical test that is typically used to compare the means of more than two groups is an ANOVA (LaFountain & Bartos, 2002). In other words, an ANOVA is typically used when a statistical design utilizes more than two independent variables (Cozby, 2001).

Three main assumptions exist that must be met for an ANOVA to be the appropriate statistical test (Green, Salkind, & Akey, 2000). The three assumptions are: (a) the dependent variable is normally distributed for the different factors, (b) the variances of the dependent variable are the same for all the groups, and (c) the cases must represent random samples from the population, and the scores on the test variable are independent of each other (Green et al., 2000). With these assumptions met, an ANOVA was run on the data to evaluate whether or not a statistically significant difference exists among the responses to the mild, moderate, marked and severe scenarios.

Because running several ANOVAs on the same data increases the familywise error rate, a multivariate analysis of variance test or MANOVA is used to evaluate multiple dependent variables (Field, 2000). A MANOVA reduces the possibility of making a type I error when multiple dependent variables are involved (Field). Like the ANOVA, three main assumptions underlie the MANOVA (Green et al., 2000). The three assumptions underlying a MANOVA are: (a) the dependent variables are multivariately normally distributed for each population, with the different populations
being defined by levels of the factor; (b) the population variances and covariances among the dependent variables are the same across all levels of the factor; and (c) the subjects are randomly sampled, and the score on a variable for any one participant is independent from the scores on this variable for all other participants (Green et al.). With these assumptions in mind, a MANOVA was run on the three (affect, behavior, cognition) total subscale scores. The three total subscale scores comprised the three dependent variables.

While the rational-theoretical approach to test-construction is a necessary step, it is not sufficient to establish a useful and valid test (Lanyon & Goldstein, 1997). Therefore, the construct validity of the TAS:O was examined next. In order to test the validity of the TAS:O, factor analysis was used. Factor analysis is typically used in the social sciences in the development of objective tests measuring concepts (Tabachnick & Fidell, 2001), such as affect, behavior, or cognition. More precisely, factor analysis is a reductive statistical technique that is used to describe a relatively small number of factors that are used to represent relationships among sets of many interrelated variables (Norusis, 1985). The goal of factor analysis, then, is to identify factors that cannot be observed based on variables that can be seen (Norusis). What this means for this research is that factor analysis can determine whether the 27-items on the TAS:O measure the three constructs it purports to measure: affect, behavior, and cognition.

Factor analysis can be further divided into confirmatory or exploratory facto analysis (Tabachnick & Fidell, 2001). Exploratory factor analysis is typically used in
initial studies of instruments, because test constructors are usually interested in the 
structure of the tests (Tabachnick & Fidell). Confirmatory factor analysis, on the 
other hand, is based on the premise that an a priori hypothesis exists (Tabachnick & 
Fidell). For this study, because an a priori hypothesis exists, (namely that the TAS:O 
will describe affect, behavior, and cognition), confirmatory factor analysis was run on 
the data to determine whether or not a relationship existed among the responses o the 
TAS:O and the a priori hypothesis.

A single assumption underlies both exploratory and confirmatory factor 
analysis: the measured variables are linearly related to the factors (Green et al., 2000). 
For this research, that specifically means that the responses on the TAS:O need to be 
linearly related to the three proposed factors of affect, behavior, and cognition. This 
assumption is likely to be violated with instruments with very limited response scales 
(e.g., two point response scales or true-false items). However, the 5-point scale of the 
TAS:O ensures that this assumption is not violated in the present study.

Table 2

<table>
<thead>
<tr>
<th>Scenarios</th>
<th>Hypothesized Scoring for the TAS:O</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild</td>
<td>27 – 54</td>
</tr>
<tr>
<td>Moderate</td>
<td>55 – 81</td>
</tr>
<tr>
<td>Marked</td>
<td>82 – 108</td>
</tr>
<tr>
<td>Severe</td>
<td>109 – 135</td>
</tr>
</tbody>
</table>
Hypotheses

1. The TAS:O will be a reliable instrument (i.e., results of this study will produce a Cronbach’s Alpha score of at least .70 or higher for the TAS:O, a Spearman-Brown coefficient of .70 or higher, and a positive correlation in regard to item total correlation).

2. Data received from the administration of the TAS:O will indicate a discrimination among the three proposed factors (affect, behavior, cognition).

3. The TAS:O will distinguish among mild, moderate, marked and severe crisis scenarios.

4. There will be a statistically significant internal consistency (.70 or greater) among the predicted Cognitive subscale on the Triage Assessment Survey: Organizations.

5. There will be a statistically significant correlation between the “affective” subscale scores on the Triage Assessment Survey: Organizations and “affect” as a measured construct of the Triage Assessment Survey: Organizations.

6. There will be a statistically significant correlation between the “behavioral” subscale scores on the Triage Assessment Survey: Organizations and “behavior” as a measured construct of the Triage Assessment Survey: Organizations.
Null Hypotheses

1. There will be no statistically significant internal consistency (.70 or greater) among the overall questions on the Triage Assessment Survey: Organizations.

2. There will be no statistically significant internal consistency (.70 or greater) among the predicted Affect subscale on the Triage Assessment Survey: Organizations.

3. There will be no statistically significant internal consistency (.70 or greater) among the predicted Behavior subscale on the Triage Assessment Survey: Organizations.

4. There will be no statistically significant correlation between the “cognitive” subscale scores on the Triage Assessment Survey: Organizations and “cognition” as a measured construct of the Triage Assessment Survey: Organizations.

5. Factor analysis performed on the overall scores on the Triage Assessment Survey: Organizations will not match the three (affect, behavior, cognition) hypothesized constructs.

Summary

This chapter described the methodology used in the present study. Specifically, reliability was discussed in terms of internal consistency (i.e., Cronbach’s alpha, Spearman-Brown formula, and item total correlation). Validity was discussed through the use of confirmatory factor analysis. This chapter also
described participants, the instrument being used for the research, the research design, materials needed for the study, the procedure, data analysis, and hypotheses for this study.
CHAPTER FOUR

RESULTS

This chapter describes the results of the data analyses. The purpose of this research was to analyze the structure of the Triage Assessment Survey: Organizations (TAS:O), developed by Myer (2002). Specifically, construct validity of the TAS:O was evaluated using confirmatory factor analysis. Reliability was tested using an internal consistency model. In addition, this research analyzed the capacity of the TAS:O to distinguish among mild, moderate, marked and severe reactions of organizations to crises. In this chapter, the results of the data analysis for this study will be described.

In order to determine the reliability and validity for the TAS:O, several statistical analyses were done using SPSS 12.0. Specifically, the reliability of the TAS:O was determined by running a Cronbach’s alpha, a Spearman-Brown formula, and an item total correlation procedure. An ANOVA was run on the total score to determine whether or not a difference existed among scores that were responses to mild, moderate, marked and severe organizational crisis scenarios. A MANOVA was run on the three hypothesized subscale scores. Lastly, Factor Analysis was performed on the data to determine to what degree the three factors (affect, behavior, cognition) were represented by participants’ responses.
Statistics

There will be no statistically significant internal consistency (.70 or greater) among the overall questions on the Triage Assessment Survey: Organizations.

The Cronbach’s alpha for the overall score on the 27-item TAS:O with 117 participants providing 468 responses was .93. A Spearman-Brown reliability test for the overall score on the TAS:O was .93, indicating that the TAS:O has very high split-half reliability. As a result, this hypothesis is rejected.

The Cronbach’s alpha on the 27 items after participants responded to a mild crisis scenario (117 responses) was .89. The Cronbach’s alpha on the 27 items after participants responded to a moderate crisis scenario (117 responses) was .84. The Cronbach’s alpha on the 27 items after participants responded to a marked crisis scenario (117 responses) was .81. The Cronbach’s alpha on the 27 items after participants responded to a severe crisis scenario (117 responses) was .86. The result of the overall Cronbach’s alpha is presented in Table 3. The results of the Spearman-Brown formula are presented in Table 4.

Table 3

<table>
<thead>
<tr>
<th>Cronbach’s alpha for the Total Scores on the TAS:O</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cronbach’s Alpha</td>
</tr>
<tr>
<td>Alpha</td>
</tr>
</tbody>
</table>

Table 4

<table>
<thead>
<tr>
<th>Spearman-Brown Formula for the Total Scores on the TAS:O</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spearman-Brown Coefficient</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
An item total correlation revealed that 26 of the 27 items had significant correlations at the .001 level. The range of the item total correlation was .277 – .787. Only item 20, “Routine decision making procedures have not been effective” was not significant. The complete item-total correlation is presented in Table 5.

Table 5

<table>
<thead>
<tr>
<th>Item Total Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>6</td>
</tr>
<tr>
<td>7</td>
</tr>
<tr>
<td>8</td>
</tr>
<tr>
<td>9</td>
</tr>
<tr>
<td>10</td>
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<tr>
<td>11</td>
</tr>
<tr>
<td>12</td>
</tr>
<tr>
<td>13</td>
</tr>
<tr>
<td>14</td>
</tr>
<tr>
<td>15</td>
</tr>
</tbody>
</table>

** Correlation is significant at the .01 level (2 tailed)
There will be a statistically significant internal consistency (.70 or greater) among the predicted Affective subscale on the Triage Assessment Survey: Organizations. Items 1, 3, 5, 9, 13, 15, 17, 18, and 21 comprised the predicted Affective subscale. A Cronbach’s alpha run on the predicted Affective subscale yielded a .79, which indicated a good reliability within the subscale. As a result, the second hypothesis is accepted.

There will be a statistically significant internal consistency (.70 or greater) among the predicted Behavior subscale on the Triage Assessment Survey: Organizations. Items 2, 4, 7, 8, 11, 19, 22, 24, and 25 comprised the Behavior subscale. The predicted Behavior subscale produced a Cronbach’s alpha of .88, indicating a high reliability within the subscale. As a result, this hypothesis is accepted.

There will be a statistically significant internal consistency (.70 or greater) among the predicted Cognitive subscale on the Triage Assessment Survey: Organizations. Items 6, 10, 12, 14, 16, 20, 23, 26, and 27 comprised the Cognitive subscale. The predicted Cognitive subscale produced a Cronbach’s alpha of .79, which indicates a good reliability within the subscale. As a result, this hypothesis is accepted.
The TAS:O will distinguish among mild, moderate, marked and severe crisis scenarios.

An analysis of variance (ANOVA) was used to determine whether or not a difference existed among the scores on the TAS:O in reaction to the mild, moderate, marked and severe organizational crisis scenarios. The ANOVA (F (3, 467) = 202.93, p<.001) indicated a statistically significant difference among the responses to the mild, moderate, marked and severe scenarios. As a result, this hypothesis is accepted.

Table 6

Results of the One-way ANOVA

<table>
<thead>
<tr>
<th>Test Composite</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>85498.001</td>
<td>3</td>
<td>28499.334</td>
<td>202.928</td>
<td>.001</td>
</tr>
<tr>
<td>Within Groups</td>
<td>65164.468</td>
<td>464</td>
<td>140.441</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>150662.47</td>
<td>467</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The ANOVA determined that a significant difference existed among the four groups. However, the ANOVA does not indicate specifically where those differences occur. Thus, a post-hoc analysis was performed to determine exactly where the differences among the groups occurred. A post-hoc analysis revealed that a statistically significant mean difference existed among all of the groups at the .001 significance level. The mean composite score on the TAS:O in response to the scenarios produced the following results: mild = 71.45, moderate = 90.5, marked = 99.21, and severe = 107.95. A Tukey HSD performed on the homogeneous subsets
resulted in a significance level of 1.00, indicating that no significant interactions existed among the four independent variables (i.e., mild, moderate, marked, and severe scenarios). Tables 7 and 8 show the results of the post-hoc analysis.

Table 7

*Post Hoc Test of Multiple Comparisons*

<table>
<thead>
<tr>
<th>(l) Group</th>
<th>(J) Group</th>
<th>Mean Difference (l – J)</th>
<th>Std. Error</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild</td>
<td>Moderate</td>
<td>-19.05896*</td>
<td>1.54942</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>Marked</td>
<td>-27.76707*</td>
<td>1.54942</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>Severe</td>
<td>-36.50175*</td>
<td>1.54942</td>
<td>.001</td>
</tr>
<tr>
<td>Moderate</td>
<td>Mild</td>
<td>19.05896*</td>
<td>1.54942</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>Marked</td>
<td>- 8.70811*</td>
<td>1.54942</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>Severe</td>
<td>-17.44279*</td>
<td>1.54942</td>
<td>.001</td>
</tr>
<tr>
<td>Marked</td>
<td>Mild</td>
<td>27.76707*</td>
<td>1.54942</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>Moderate</td>
<td>8.70811*</td>
<td>1.54942</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>Severe</td>
<td>-8.73468*</td>
<td>1.54942</td>
<td>.001</td>
</tr>
<tr>
<td>Severe</td>
<td>Mild</td>
<td>36.50175*</td>
<td>1.54942</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>Moderate</td>
<td>17.44279*</td>
<td>1.54942</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>Marked</td>
<td>8.73468*</td>
<td>1.54942</td>
<td>.001</td>
</tr>
</tbody>
</table>

Table 8

*Tukey’s HSD on the Homogenous Subsets*

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mild</th>
<th>Moderate</th>
<th>Marked</th>
<th>Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild</td>
<td>117</td>
<td>71.4451</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate</td>
<td>117</td>
<td>90.5040</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marked</td>
<td>117</td>
<td></td>
<td>99.2122</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severe</td>
<td>117</td>
<td></td>
<td></td>
<td>107.9468</td>
<td></td>
</tr>
<tr>
<td>Sig.</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
</tbody>
</table>
Data received from the administration of the TAS:O will indicate a discrimination among the three proposed factors (affect, behavior, cognition).

The dimensionality of the 27 items from the TAS:O was measured using confirmatory factor analysis. Three criteria were used to determine the number of factors to rotate: the a priori hypothesis that the measure would produce 3 factors, the Scree test, and the interpretability of the factor solution. The a priori hypothesis was that data received from the administration of the TAS:O would discriminate among the constructs of affect, behavior, and cognition (i.e., three factors). Results of the Scree test demonstrated that the data would fall into three factors. The Scree plot is shown in Figure 1.
Figure 1: The scree plot above demonstrates that the data can best be interpreted by a three factor solution.

Since the a priori hypothesis and Scree plot both indicated that the data would produce a three-factor solution, the last step of the factor analysis was to interpret the rotated factor solution. Initially, with eigenvalues set at 1, a four-factor solution emerged from the data. However, only item 20 loaded onto the fourth factor. Item 20 was also the only item on the item-total correlation that yielded a non-significant
correlation. Therefore, for experimental purposes, item 20 was removed from the solution. Three factors were then extracted using a principal axis factoring analysis with a Varimax rotation.

Since the goal of this research was to test the TAS:O as it was, item 20 was reintegrated with the data. Using the criteria for the confirmatory factor analysis described above, the solution was forced into three factors to extract the final factors. Again, principal axis factoring analysis with a Varimax rotation was used to determine the factor solution. Factor loadings are the correlation between the items and the newly created factor (Tabachnick & Fidell, 2001). For this study, a minimum factor loading of .5 was required for an item to be interpreted as part of a factor. With a factor loading of .5 or greater, 8 items loaded onto factor 1 (items 4, 6, 10, 12, 16, 19, 21, 23), 7 items loaded onto factor 2 (items 3, 5, 13, 14, 15, 17, 24), and 6 items loaded onto factor 3 (items 1, 2, 9, 11, 25, 27). Six items (7, 8, 18, 20, 22 and 26) did not load at the .5 level onto any factor. The rotated solution, as shown in Table 9, yielded the hypothesized three factors.
Once the factors were established, further reliability analysis was performed.

On the 8 items that loaded onto factor 1 (items 4, 6, 10, 12, 16, 19, 21, and 23), the Cronbach’s alpha was .86. On the 7 items that loaded onto factor 2 (items 3, 5, 13, 14, 15, 17, and 24), the Cronbach’s alpha was .87. Finally, of the 6 items that loaded onto factor 3 (items 1, 2, 9, 11, 25, and 27), the Cronbach’s alpha was .86. Thus, all three empirical factors appear to have relatively high reliability.
Three predicted subscales existed (affect, behavior, and cognition). A MANOVA was performed on the data to determine the effect of the organizational crisis scenarios on the three dependent variables (i.e., the predicted Affect subscale, predicted Behavior subscale, and the predicted Cognitive subscale). A MANOVA examines the hypothesis that the population means for the dependent variables (in this case, the affect, behavior, and cognitive subscales) are the same across the groups (Green, Salkino, & Akey, 2000). An assumption of a MANOVA is that if the population means are equal for all groups, then the population means for any linear combination of these dependent variables is also equal for all groups (Green et al., 2000). The MANOVA revealed that statistically significant differences were found among the four organizational crisis scenarios on the three predicted subscales, Wilks’ \( \Lambda \) .24, \( F(9, 1124.54) = 100.58, p<.001 \). In other words, the MANOVA revealed that a statistically significant difference existed among the Affect subscale mean, Behavior subscale mean, and Cognitive subscale mean, and any linear combination of these means.

There will be no statistically significant correlation (.70 or greater) between the Affective subscale scores on the Triage Assessment Survey: Organizations and “affect” as a measured construct of the Triage Assessment Survey: Organizations.

Factor analysis performed using principal axis factoring and a Varimax rotation yielded three factors. Fifty-six percent (5 of the 9 predicted items) of factor 2
aligned with the predicted Affect subscale. As a result, this hypothesis is accepted.

*There will be no statistically significant correlation (.70 or greater) between the Behavioral subscale scores on the Triage Assessment Survey: Organizations and “behavior” as a measured construct of the Triage Assessment Survey: Organizations.*

Thirty-three percent (3 or the 9 predicted items) of factor 3 accounted for the predicted Behavior construct. As a result, this hypothesis is accepted.

*There will be no statistically significant correlation (.70 or greater) between the Cognitive subscale scores on the Triage Assessment Survey: Organizations and “cognition” as a measured construct of the Triage Assessment Survey: Organizations.*

Fifty-six percent (5 or the 9 predicted items) of factor 1 accounted for the predicted cognitive construct. As a result, this hypothesis is accepted.

A final statistical conundrum existed for the present study. All 117 participants responded to the four levels of independent variable (i.e., the four organizational crisis scenarios). When the means that are examined derive from the same participants measured under different conditions, further statistical analyses are needed (Tabachnick & Fidell, 2001). In these designs, the between subjects design is equal to the sums of squares and mean square for the effect of the independent variable; however, the error term is further divided into individual differences due to participants, and interaction of individual differences due to treatment (Tabachnick &
Thus, in the design of the present study, the between subjects design is equal to the sums of squares and mean square for the effect of the four different organizational crisis scenarios, and the interest lies in determining whether or not the differences occurred due to the same participants reacting to different levels of organizational crisis scenarios, or because of the organizational crisis scenarios themselves.

A one-way ANOVA was run on the person variable and composite score. The group variable produced a mean square of 28499.33. The person variable produced a mean square of 115.95. Using hand calculations to divide the group variable by the interaction mean squared (or person variable), an F score of 245.78 was found. This statistically significant F score demonstrated that the person variable had no significant effect on the dependent variable. In other words, despite the fact that the same participants responded to different levels of the independent variable (i.e., the four organizational crisis scenarios), the repeated measures design did not have a statistically significant effect on the dependent variable.

Summary

This chapter described the results of the present study. Specifically, the overall Cronbach’s alpha was .93, the Spearman-Brown correlation was .93, and the item total correlation revealed all items except item 20 were positively and significantly correlated, all of which appear to describe the TAS:O an apparently highly reliable instrument. As the a priori hypothesis predicted, factor analysis
produced three distinct factors. Lastly, an ANOVA revealed that the TAS:O was able to distinguish among mild, moderate, marked, and severe scenarios.
CHAPTER FIVE

DISCUSSION

Summary of Major Findings

This study investigated the reliability and validity of the Triage Assessment Survey: Organizations (TAS:O), a 27-item instrument designed to measure the reactions of organizations to crises. Specifically, construct validity of the TAS:O was evaluated using confirmatory factor analysis. Reliability was tested using an internal consistency model. In addition, this research analyzed the capacity of the TAS:O to distinguish among mild, moderate, marked and severe reactions of organizations to crises. In this chapter, a summary of the study, discussion of the results, and further recommendations will be described.

Summary of the Study

From the onset, the goal of this research was to determine whether the TAS:O was a reliable and valid instrument. Reliability was tested with an internal consistency model. The Cronbach’s alpha and Spearman-Brown tests both were .93, indicating a very high internal consistency. Validity was tested using confirmatory factor analysis. The factor analysis yielded the three predicted factors that the a priori hypothesis suggested. An ANOVA demonstrated that the TAS:O has the capacity to distinguish among mild, moderate, marked, and severe reactions of organizations to crises. Furthermore, post hoc analyses revealed that no statistically significant interactions existed among the scores in response to the mild, moderate, marked, and
severe organizational crisis scenarios. Thus, while this was only the first statistical test performed on the TAS:O, the findings indicated that the TAS:O is a reliable and valid instrument of organizational reactions to crises.

Discussion

The model on which the TAS:O was constructed (i.e., the Triage Assessment Model) provided the rationale for predicting that factor analysis would yield three distinct factors. Results of the principal axis analysis provided support for the existence of three distinct factors (affect, behavior, and cognition). Specifically, with .5 used as a cutoff level for factor loadings, 56% of factor 2 accounted for the proposed Affect subscale. Likewise, 56% of factor 1 accounted for the proposed Cognitive subscale. While factor analysis yielded a distinct third factor, only 33% of factor 3 accounted for the proposed Behavior subscale. Six items did not load onto any factor at the .5 level. The three factors that were found accounted for an impressive 51% of the variance.

Factor 2 provided the items that most closely loaded on the predicted Affect subscale (items 3, 5, 13, 14, 15, 17, and 24). Recall that items 1, 3, 5, 9, 13, 15, 17, 18, and 21 comprised the predicted Affect subscale. Item 1, “Motivation to work has remained steady,” item 9, “Absenteeism has become more commonplace,” item 14, “Confidence in leadership to make good decisions is diminished,” item 18, “Gossip has remained steady,” and item 21, “More people than usual are talking about finding a new position,” did not load onto the Affect subscale as hypothesized.
Interestingly, item 3, “Rumors are more widespread,” loaded onto the predicted Affect subscale, while item 18, “Gossip has remained steady,” and item 21, “More people than usual are talking about finding a new position,” did not load onto the Affect subscale. A possible reason for this could be that in item 3 the actual word *rumors* was included, while in items 18 and 21, the concept of rumors could only be inferred. Perhaps the word *rumors* has a strong affective affiliation, as rumors tend to be associated with harm.

Item 1, “Motivation to work has remained steady,” and item 9, “Absenteeism has become more commonplace,” appear to be similar items. Both items loaded on factor 3, which most closely aligns with the predicted Behavior subscale. An argument can be made that without motivation to work, absenteeism is likely to rise. Absenteeism is an observable event, and can thus fit in the Behavior subscale.

Item 14, “Confidence in leadership to make good decisions is diminished,” which loaded on Factor 2, also does not align with the predicted Affect subscale. This is the only item that uses the term *confidence* directly. A possible rationale for this item falling under factor 2 with the other predicted Affect questions is that confidence can be used to describe an emotional state.

Factor 1 provided the items that most closely aligned with the predicted Cognitive subscale (items 4, 6, 10, 12, 16, 19, 21, and 23). Recall that items 6, 10, 12, 14, 16, 20, 23, 26, and 27 comprised the predicted Cognitive subscale. Item 14, “Confidence in leadership to make good decisions is diminished,” item 20, “Routine decision making procedures have not been effective,” item 26, “Organizational goals
are secure,” and item 27, “People have to do other people’s jobs,” all did not load on the predicted Cognitive subscale as hypothesized.

In hindsight, item 27, “People have to do other people’s jobs,” appears to be a behavioral item. Support for this rationale can be found in that this item loaded onto factor 3, which most closely aligned with the predicted Behavior subscale.

As discussed previously, item 14, “Confidence in leadership to make good decisions is diminished,” aligned with the Affect subscale.

Item 20, “Routine decision making procedures have not been effective,” can be discussed separately. Item 20 is the only item on the inter-item total correlation that did not produce a significant correlation. Furthermore, when an initial exploratory factor analysis was performed, a four-factor solution was found. However, the only item that loaded onto the fourth factor was item 20. Thus, the decision was made to force the data into a three-factor solution. Between the inter-item total correlation and the response from the exploratory factor analysis, it appears that item 20 is not an effective measure of anything the test is attempting to determine. When item 20 was thrown out of the data set, three factors were found even using eigenvalues over 1.

Item 26, “Organizational goals are secure,” was the final item that did not load on the predicted Cognitive subscale. Item 10, “Organizational goals have altered,” did load with the predicted Cognitive subscale, so it was surprising that item 26 did not also load on the predicted Cognitive subscale. However, a closer examination reveals that, while item 26 did not load with the predicted Cognitive subscale at the .5
level, the factor loading was .46 on factor 1, which, while it was below the cutoff score for this study, does indicate a tendency for this item to align with the predicted Cognitive subscale.

Factor 3 provided the items that most closely aligned with the Behavior subscale. Items 1, 2, 9, 11, 25, and 27 loaded at the .5 level on Factor 3. Recall that items 2, 4, 7, 8, 11, 19, 22, 24, and 25 comprised the predicted Behavior subscale. Of the three factors found, only 33% of the factors found aligned with the predicted Behavior subscale. Item 1, “Motivation to work has remained steady,” item 4, “Standard operating procedures have been suspended,” item 7, “Agendas for meetings are constructive,” item 8, “Interaction with others is unchanged,” item 19, “Meeting agendas are unchanged,” item 22, “Day-to-day business has been disrupted,” and item 24, “People are more distracted than usual,” all did not load at the .5 level on the Behavior subscale as hypothesized.

As discussed previously, item 1, “Motivation to work has remained steady,” appears to make sense to load on the Behavior subscale, because motivation can be measured in terms of objective phenomena.

Item 4, “Standard operating procedures have been suspended,” did not load on the Behavior subscale. It is possible that this item was more accurately viewed as a command, and thus, a cognitive direction.

Items 7, “Agendas for meetings are constructive,” and item 8, “Interaction with others is unchanged,” do not load onto any factor at the .5 level. Both items appear to be behavioral constructs, but the results of the data do not support these
items loading onto the Behavior subscale. It should be noted that if item 20 is thrown out of the data set, item 7 then loads onto the Behavioral subscale, and item 8 still does not load onto any factor at the .5 level.

Finally, item 22, “Day-to-day business has been disrupted,” was hypothesized to load on the Behavior subscale, but did not load on any factor at the .5 level. In fact, the factor loadings for item 22 were, factor 1: .48, factor 2: .44, and factor 3: .43, indicating that at best, with a lower factor loading, item 22 would cross load on all three factors.

To conclude the discussion on the factor analysis, it should be noted that the TAS:O appears to have the capacity to discriminate among the three constructs of affect, behavior, and cognition. While factor analysis revealed that three distinct factors exist, it did not confirm a perfect match to the hypothesized ideas of what constitutes affective, behavioral and cognitive organizational responses to crises. Instead, a total of 48% of the predicted items loaded as hypothesized. Twenty-two percent of the total items did not load onto any factor, and the remaining 40% of the items did not load as predicted. Perhaps new considerations should be made with this last 40%. In fact, a review of the items that did not load as predicted, found that the questions appeared to be worded in ways that align with the concept of affect, behavior and cognition, and could thus be reinterpreted from the factors under which they fell. In other words, factor analysis produced three factors. While 40% of these items did not load onto the predicted factors, the factors produced from the statistical analyses could still be called Affect, Behavior, and Cognition.
The results of the reliability tests appear to indicate that the TAS:O is a highly reliable instrument. The overall Cronbach’s alpha was .93, which is an indicator of remarkably high reliability. Impressively, a Spearman-Brown split-half reliability test also produced a reliability coefficient of .93. The item-total correlation likewise verified the reliability of the TAS:O, and demonstrated that 26 of the 27 items yielded positive correlations, with a range of .277 - .787.

For this study, participants filled out the TAS:O after responding to four organizational crisis scenarios. Each scenario was designed to be perceived as a progressively more intense organizational crisis. The four scenarios represented a mild crisis, a moderate crisis, a marked crisis, and a severe crisis. However, participants did not respond to these scenarios in any particular order. Instead, a counterbalance precaution was taken by having the order of the scenarios randomly assigned to the participants. Considering participants were given scenarios in a random order, it seemed impressive that such a clear distinction existed among the four groups.

The goal of providing scenarios for the participants to respond to was two-fold. First, it would have been unethical to ask people suffering from crises to respond to research. Second, by having participants respond to hypothetical situations, a spectrum of organizational crisis intensity was researched, thus providing information as to whether the TAS:O can discriminate among mild, moderate, marked and severe crises. Nonetheless, this method led to the limitation that the
concocted organizational crises could not have elicited the same level of experience as actual organizational crises.

The ANOVA run on the data indicated that a significant difference existed for the main effects. In other words, statistical analyses determined that the TAS:O was able to distinguish among mild, moderate, marked and severe organizational crises. More impressively, while the data indicated that a significant difference existed among the different levels of organizational crises, it was also found that no interactions existed among the responses to the mild, moderate, marked and severe scenarios. The statistical analyses from this research thus indicated that the TAS:O can provide information as to what aspect of the organization was most significantly affected (affect, behavior, or cognition), and also to what degree the crisis has affected the organization (i.e., mild, moderate, marked, or severe crises).

Scoring the TAS:O

Work still needs to be done in regard to scoring the TAS:O. Initially, the author of the TAS:O used an arbitrary classification based on a cross tabulation. In other words, he believed that mild scores would fall between 27-54, moderate scores would fall between 54-81, marked scores would fall between 81-108, and severe scores would fall between 108-135. However, the data revealed that responses to the mild scenario ranged from 31-119, responses to the moderate scenario ranged from 62-122, responses to the marked scenario ranged from 66-127, and responses to the severe scenario ranged from 44-133. It appears that outliers may have influenced the range for these scores.
To calculate a reasonable scoring range by which the intensity of the crisis would be able to be determined, the mean scores for each group were found. Then, by adding and subtracting the standard deviation from the mean, a range was determined. The actual scoring range for the TAS:O has some overlap. Responses to mild crisis scenarios would fall between 58-84, responses to moderate crisis scenarios would fall between 80-100, responses to marked crisis scenarios would fall between 99-109, and responses to severe crisis scenarios would fall between 96-120. Since overlap on the scoring range does not provide clear information in regard to the level of crisis an organization is experiencing, it is recommended that the test be scored with the idea that only three levels of crises exist, mild, moderate and severe. Thus, the scoring range should be that responses less than 80 indicate a mild organizational crisis, responses ranging from 81 – 99 indicate a moderate organizational crisis, and responses above 101 indicate severe organizational crisis. An illustration of the actual scoring range compared with the suggested scoring range is provided in Table 10.

Table 10

<table>
<thead>
<tr>
<th>Scoring Range</th>
<th>Actual Scoring</th>
<th>Suggested Scoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild</td>
<td>54 – 84</td>
<td>Mild = &lt; 80</td>
</tr>
<tr>
<td>Moderate</td>
<td>80 – 100</td>
<td>Moderate = 81 – 99</td>
</tr>
<tr>
<td>Marked</td>
<td>99 - 109</td>
<td>Severe = 100 +</td>
</tr>
<tr>
<td>Severe</td>
<td>96 – 120</td>
<td></td>
</tr>
</tbody>
</table>
Implications of the Study

Though this study was only an initial evaluation of the TAS:O, statistical analyses appear to indicate that the TAS:O is a reliable and valid measure of how organizations respond to crises. Considering Lewis and Roberts (2001) noted the need for crisis assessment instruments with strong psychometrics, the results of this study appear to demonstrate that the TAS:O may have been developed at an opportune time. A reliable and valid brief organizational crisis assessment instrument is advantageous to both organizations and consultants. The TAS:O is especially advantageous in that it not only appears psychometrically sound, but it also accounts for the human impact of crises by assessing which construct (affect, behavior, or cognition) of the human beings comprising the organization is most significantly effected.

The relevance of the TAS:O being a sound psychometrical organizational crisis assessment instrument is that organizations that use the TAS:O to assess a crisis will have an opportunity to understand more clearly exactly how the organization is being effected. The impact is far reaching in that potentially countless people will have the opportunity to have their impending crisis identified. Consultants could use the identified information from the TAS:O to facilitate organizations’ addressing areas (affect, behavior, cognition) that are deficient at some level.

Recommendations for Further Study

It was the TAS:O author’s intention to have the instrument describe organizations’ affective, behavioral and cognitive responses to crises. Statistical
analyses provided support for the TAS:O having the capacity to do exactly that. The TAS:O can clearly differentiate among three distinct factors, and those factors could reasonably be labeled Affect, Behavior, and Cognition. However, further modification of the instrument is necessary to categorize what items fall under Affect, Behavior, and Cognition.

The TAS:O appears to be a highly reliable instrument for measuring some effects of organizational crises. Though the reliability for this instrument is extremely high, further revision of the test can be performed to augment the reliability. For example, item number 20 is suspect, and should be thrown out or modified. A recommendation for revising item 20, “Routine decision making procedures have not been effective,” is to make the sentence more active; e.g., “Routine decision making procedures are no longer effective.” Also, items 7, 8, 18, 20, 22, and 26 did not load at the .5 level on any factor. Thus, a recommendation for augmenting reliability of the TAS:O would involve looking at these items for modification.

Statistical analyses revealed that the TAS:O appeared to be able to discriminate among different types of crises. In fact, by evaluating a person variable, a MANOVA indicated that the interaction among groups was not due to repeated measures. However, because 117 participants responded to the same survey four times, future research should involve ANOVA testing of the TAS:O in regard to different levels of crises with different participants exposed to the different treatment groups, rather than all the participants being exposed to all the groups. Furthermore,
the TAS:O should be tested with an organization that is not experiencing a crisis, so a baseline can be established.

Finally, this research demonstrated that the TAS:O appears to be a reliable and valid instrument in an experimental setting. Thus, perhaps the most significant recommendation is to have the TAS:O tested in a real situation. It would not have been ethical to do preliminary research on the TAS:O using participants experiencing actual crises. However, now that initial testing has provided results indicating an apparent strength in the TAS:O, it would be important to evaluate the TAS:O in a field setting.
References


Lewis, S., & Roberts, A. R. (2001). Crisis assessment tools: The good, the bad, and


Appendix A
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CONSENT TO PARTICIPATE IN A RESEARCH STUDY

TITLE: Examination of the Reliability and Validity of the Triage Assessment Survey: Organizations

INVESTIGATOR: Christian Conte
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(412) 352-7941

ADVISOR: Rick A. Myer, Ph.D.
Counselor Education Department
(412) 396-4036

SOURCE OF SUPPORT: This study is being performed as partial fulfillment of the requirements for the Ed.D. degree in Counselor Education and Supervision at Duquesne University.

PURPOSE: You are being asked to participate in a research project that seeks to investigate individual perceptions of organizations in crisis. You will be asked to read a scenario about an organization in crisis, and then fill out a 27-item survey.

RISKS AND BENEFITS: There are no risks or benefits to participants in this study.

COMPENSATION: You will not receive any compensation for participation in this research.

CONFIDENTIALITY: Your name will never appear on any survey or research instruments. No identity will be made in the data analysis. All written materials and consent forms will be stored in a locked file in the researcher’s home. Your responses will only appear in statistical data summaries. All materials will be destroyed within 5 years of this research.

RIGHT TO WITHDRAW: You are under no obligation to participate in this study. You are free to withdraw your consent to participate at any time.

SUMMARY OF RESULTS: A summary of the results of this research will be supplied to you, at no cost, upon request.

VOLUNTARY CONSENT: I have read the above statements and understand what is being requested of me. I also understand that my participation is voluntary and that I am free to withdraw my consent at any time, for any reason. On these terms, I
certify that I am willing to participate in this research project.

I understand that should I have any further questions about my participation in this study, I may call Dr. Paul Richer, Chair of the Duquesne University Institutional Review Board (412-396-6326).

_________________________________                              ______________________
Participant’s Signature     Date

___________________________________   _______________________
Participant’s Signature     Date
Appendix C
Mild Crisis Scenario

A week ago your company underwent its first audit. Several key pieces of paper were not where they were supposed to be. Hence, your organization was given a warning to straighten out its paper trail. Concerns have been expressed among the managers, and some employees began to wonder who misplaced what, and what was going to be done about it. Your coworkers’ moods, while affected, have remained relatively stable. However, while no one appeared to believe that this incident was an inherent fault of the foundation of the organization, some people seemed to be troubled with where they believe the organization is headed.

Some initial small group meetings distributed information throughout the organization about the audit, and all and all, there were no major disruptions of the normal routine. In fact, consumers have appeared to be unaware of this slight disturbance to the company. Management provided incentives for employees to work toward positive solutions to the current task. Control of the organization remained stable, and the decision-makers continued to function normally. Though the typical organizational goals have been altered somewhat, productivity has remained the same.

Moderate Crisis Scenario

Ten days ago a fire broke out in your organization. Some damage was done to the payroll office, and subsequently, several sub-groups of employees in the organization did not get paid on time. As if this wasn’t enough, the fire happened less than two weeks after a bomb threat, and hence, a constant “buzz” went around the organization about possible connections. In fact, some people became frustrated that more was not being done to clarify exactly what was going on. Not only have people begun to surmise, “How safe is this organization,” but also, people seem to be wondering if they are in for a financial crisis. At least one person has been heard asking, “Is the company going belly up?”

While several people have been contributing negative attitudes toward the situation, others have become frustrated with the negativity in general. Though management seems to be confident that production will remain relatively stable, an interoffice memo indicates that meetings appear to be necessary to quell the apparent “buzz” in the organization.

Marked Crisis Scenario

Your organization moved into its present workspace one year ago. The building, relatively new, had not previously been occupied. Within, the building had all the trappings of new offices, and the accouterments all seemed normal.

At the onset no one took note of the mild coughs and aches that several employees experienced. Then absenteeism proliferated, with some employees missing work on a noticeable basis because of chronic illness.

Over the last two weeks, people began to say that the “sick building” caused the illnesses. From the custodial staff through the secretaries the talk spread into the middle echelons of the organization. Ten days ago, a grievance was filed to seek management’s intervention in what is perceived as a health crisis with three out of every ten employees missing at least four workdays per month.
Accompanying the absenteeism is an excess work burden on those reporting for work, and the company is beginning to fall short of achieving some of its business goals. At times workers have been heard to ask, “Why isn’t management doing something about the conditions around here?” In at least one incident, a secretary blurted to her boss, “We could all be dying, but no one would care.”

**Severe Crisis Scenario**

Less than a week ago your organization was hit by a hurricane that destroyed the main infrastructure to the point where the building had to be declared condemned. Two custodial workers were severely injured and one was killed by the tempest. Productivity for the organization has virtually stopped. Because little has been able to be salvaged, people are in a panic about what jobs might “not be needed” when business resumes. Talk has already begun about your organization possibly having to move its main building 45 minutes south of its current location.

The management has had to have several meetings to discuss the immediate future of the organization. To make matters worse, the CEO is on a two-week sailing vacation, and has still not been in contact with anyone from the organization. Without the usual leader in charge, management has divided into factions and remains in opposition about what steps to take first. Many of the employees doubt that a “real recovery” can be made, and many of them hustle to look for new jobs. The employees that don’t or “can’t” leave have begun to align themselves with the different managerial factions.
Appendix D
Demographic Information

1. **AGE ____________**

2. **GENDER** (Circle):  Male  Female

3. **YEARS OF PROFESSIONAL WORK EXPERIENCE ____________**

4. **CURRENT WORK SETTING** (Check appropriate box/boxes):
   - [ ] NON-PROFIT
   - [ ] FOR PROFIT
   - [ ] HUMAN SERVICES (Mental health, social work, etc.)
   - [ ] MANUFACTURING FIRM (Automobile producers, computer producers, etc.)
   - [ ] MERCHANTISER (Retailers or wholesalers)
   - [ ] SERVICE ENTERPRISE (Repair stores, restaurants, hospitals, hotels, etc.)

5. **ACADEMIC DEGREES** (Check highest degree earned):
   - [ ] HIGH SCHOOL DIPLOMA
   - [ ] BACHELOR'S DEGREE
   - [ ] MASTER'S DEGREE
   - [ ] DOCTORAL DEGREE

6. **ETHNIC BACKGROUND** (Check appropriate box):
   - [ ] BLACK – Afro-American or African origin
   - [ ] ASIAN OR PACIFIC ISLANDER – Japanese, Chinese, Korean, Indian origin
   - [ ] HISPANIC – Mexican, Puerto Rican, Cuban, Central or South American origin
   - [ ] WHITE (Not Hispanic) – European, North African or Middle Eastern origin
   - [ ] AMERICAN INDIAN OR ALASKAN NATIVE

7. **U.S. CITIZEN** (Circle):  Yes  No
Appendix E
Appendix B
Pilot Study

A pilot study was conducted before the main study was performed. The study consisted of 25 graduate students who were enrolled in a crisis intervention course. Each participant was given all four crisis scenarios (mild, moderate, marked and severe) in random order. After reading each scenario, they responded to the TAS:O, so that each participant produced scores for four TAS:O forms.

Statistical analysis was performed on the data. A Cronbach’s Alpha reliability test yielded a score of .95, which appeared to indicate that the TAS:O is highly reliable. Using the extraction method: Principal Axis Factoring and a Varimax rotation with Kaiser Normalization in SPSS, factor analysis revealed 3 factors. The first factor matched 4 of the 9 hypothesized items for the behavioral subscale, and accounted for 8 items. The second factor matched 6 of the 9 hypothesized items for the cognitive subscale, and accounted for 6 items. The third factor matched 8 of the 9 hypothesized items for the affective subscale, and accounted for 13 items. Thus, the results of the factor analysis indicated that the three factors could be renamed. However, because only 25 participants were used, yielding 100 responses, enough significant data was not established to effectively run factor analysis.