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“A Model of Crisis”

by

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Richmond, VA

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INTRODUCTION

During the spring 1996 semester, the Jepson School of Leadership Studies offered a special topics course titled “Leadership in Crisis.” The course, co-taught by Dr. Richard Couto and former Virginia Attorney-General Mary-Sue Terry, intended to “offer students CPR instruction to sustain organizational and personal vision” (Couto) for a group or organization dealing with crisis. Members of the class were instructed in crisis taxonomy and classification, crisis in diverse contexts, crisis management plans, crisis perspectives from both inside and outside of organizations, and the role of the personal in dealing with crisis. The faculty instructors determined that although the course had many valuable components and would be an asset to the Leadership Studies curriculum, the course would be most useful broken down into elements that could be added into other courses, decision making and conflict resolution, for example (Couto).

The instructors recognized the importance of the content of this course as crises situations hit us in many facts of life ranging from personal, to organizational, to national or world wide. It is often through these situations that leaders emerge in our societies and lives to lead us through these experiences. Thus, this leadership environment as Dr. Couto and Professor Terry realized, is important to the field of leadership studies as from many of these situations emerge the leaders of our generations.

Personal experiences in the crisis course awakened this realization of the importance of crisis research as well as a desire to impact this field of study. This desire met fruition in the fall of 1996 with the discussion of the Jepson School of Leadership Studies senior thesis. Because of a strong interest in the material from the Leadership in Crisis course, an initial
proposal was created proposing the redesign of the course curriculum for this class. However, because of numerous ideas, and specific concerns about the course's existing curriculum, one facet of the material had to be chosen. Under recommendation of Dr. Couto, the decision was made to extend the work of Michael Helsel, a classmate from the Leadership in Crisis course. Michael's work involved a paper with a model that measured crisis magnitude. Specifically, the index measured the actual/potential number of persons affected by a circumstance to the degree of actual or potential negativity of the same situation. Intrigued by the model, it was decided that an investigation into model's accuracy and implications allowed thorough investigation of crisis research and granted an opportunity to contribute to this field of study. Finally, this investigation allows personal development and understanding of a phenomenon that proliferates today's world, the world from which our leaders emerge.

LITERATURE REVIEW

In order to understand the scope of the Helsel model, that is, understand the model's limitations and the range of its use, an effort must be made to understand the context in which the model was developed: crisis. This would invoke the determination of the nature of crisis and the components of this phenomenon. This investigation will address these two questions with the hope of establishing a framework for defining crisis and assumptions which may be applied to the "Scale of Crisis Magnitude"
What is crisis?

In an electronic dictionary search, Miriam-Webster’s Collegiate Dictionary identified three items relevant to the requested query, crisis. The reference defined a crisis, an identity crisis, and a midlife crisis. Within the range of the crisis definition, Miriam-Webster identifies three different contexts of the word, a physiological usage, an environmental usage, and a point usage (i.e. a point of juncture). Although each of these contexts and definitions have commonalities in representing crisis as a turning point or decisive moment, this example from a common reference source demonstrates on a small scale, the complexity of defining a crisis.

Thomas Kuhn and Patrick Lagadec suggest that in general, crisis is characterized by a disturbance of a normal course of events or specifically a “technical breakdown of a normal process” (Kuhn 69). Jack Gottschalk also recognizes this deviance from the norm in a business context. He states, “In business, a crisis is a situation that, left unaddressed, will jeopardize the organization’s ability to do business normally. The term is used frequently to describe everything from a nagging problem to a busy day” (Gottschalk 397). Lagadec takes this concept one step further, addressing the idea Gottschalk acknowledges: that the term crisis is becoming a ready-to-use catch-phrase for all problematic situations (Lagadec 25). He points out that a deviation from the norm only becomes a crisis once the deviation has passed a certain limit or an accident occurs in a system that was already unstable or close to a breaking point, when the event occurred. This limit thus recognizes a differentiation between normalcy, conventional incidents, and crisis (Lagadec 3). Lagadec clarifies the difference between conventional incidents and crisis by characterizing conventional incidents as:
A well understood event, of limited scale
- Clearly defined emergency procedures
- A limited number of actors
- The organizations involved know one another
- Clear cut roles and responsibilities
- A well acknowledged authority structure
- A situation that is perceived to be manageable
- A breakdown that is quickly brought under control

In contrast to these characteristics, Lagadec also notes factors that characterize a crisis situation. These factors include:

- A large scale breakdown
- A very destabilizing type of breakdown
- Grave situations that degrade exponentially
- Emergencies that do not play by the rules
- Unknowns
- A growing number of authorities involved
- Critical communications problems
- Huge stakes
- The issue of time

These distinguishing elements thus make it possible, at a basic level, to distinguish between normalcy, conventional incidents, and crisis.

The idea that a problem can be distinguished from a crisis brings us back to the original complexity of defining crisis. This concept will now be examined from the viewpoints of context and perspective. Although the characteristics which Lagadec describes to distinguish between normalcy, conventional incidents, and crisis are interdisciplinary, his work is contextually written for organizations attempting to understand and interpret crisis. Like Lagadec, the ideas of most individuals regarding crisis are contextual as well. Thus, many notions and definitions ultimately come together to form the term crisis. For example, Steve Albrecht states that “A business based crisis is an event specific episode that can make
or break you, depending upon the size of your company, the number of people you employ, the products and services you sell, and the resources of people, assets, and money you can aim at the problem” (Albrecht 7). Here, Albrecht addresses the situational properties of a business crisis relating that the perspective taken to handle a situation of this context is a high determinant in the outcome of the crisis. From a scientific viewpoint, Kuhn suggests that “excepting those that are exclusively instrumental, every problem that normal science sees as a puzzle can be seen, from another viewpoint, as a counterinstance and thus as a source of crisis” (Kuhn 79). This idea demonstrates another contextual use of crisis, allowing one to see a crisis as an instrument for loosening the rules of normal research to allow change to occur (80). Other definitions taking a multidisciplinary approach state that, “crisis is an aspect of transformation” (Capra 26), it is “a warning that a turning point is near” (Holusha 5), or it is “an unstable time or state of affairs in which a decisive change is impending- either one with the distinct possibility of a highly undesirable outcome or one with the distinct possibility of a highly desirable and extremely positive outcome” (Fink 15). These viewpoints of crisis demonstrate a spectrum of crisis definition grounded on different contexts and field perspectives. So, beyond identifying a crisis based on its escalation from a conventional incident, which is itself dependent upon the interpretation of the individuals involved, it is difficult to pen a concrete definition of a crisis.

Lagadec again recognizes the conceptual diversity of crisis and addresses this complexity in his work Preventing Chaos In a Crisis. In his chapter “Crisis, or the loss of the reference framework” Lagadec identifies twelve general crisis attributes from the abyss of crisis definition. In addition, he recognizes crisis characteristics from other disciplines
including psychology and sociology. These definitions acknowledge characteristics of change, loss of control, stress and anxiety, inadequate information, and a threat to goals, often experienced in crisis situations. The compilation of these characteristics as well as those distinguishing between conventional incidents and crisis implies the difficulty and perhaps impossibility of setting a universal definition for the notion of crisis. Thus, the work of Lagadec as well as the notions expressed in each contextual definition observed above, come together to comprise the diverse and malleable term ‘crisis’ (Lagadec 30).

Aside from the issue of one common universal definition for crisis, there are two concepts mentioned but not explored in the literature, crisis as a matter of perspective, and the possibilities of crisis possessing positive connotations. Several of the authors mentioned demonstrate through the context in which their work was authored, that the discipline in which a crisis is researched and defined contains both the author's personal perspective and also that of their field. In addition, Albrecht mentions the role of perspective in determining the outcome of a crisis. However, it is important to note that while these authors do not specifically address crisis as perspective dependent, this idea is implied in crisis literature. Particularly, it is suggested that the concept of crisis is relative, what may be a crisis for one is simply a problem for another (Lagadec 4). Lagadec addresses this idea with his distinguishing characteristics between conventional incidents and crisis. However, taking this a step further, he does not account for distinguishing between these two incidents based on the position of people within an organization, an organization within an environment, or a combination of both. For example, some confrontations escalate into crisis because groups have learned that the use of crisis-provoking tactics is effective in gaining management
attention (Lerbinger 6). This situation might be a crisis for the management involved, but only a problem for those higher up, depending upon the perspective. In addition, letting a crisis occur may actually be in someone's personal best interest or may be in the best interest of a facet opposing the entity in crisis (Dougherty 8). Thus, a crisis becomes a relative and highly subjective term that gains meaning through the individual needs of a person or organization and the environment in which they exist (Littlejohn 8).

The ideas of a provoked crisis, or one in which a group's personal best interest are involved, are demonstrated in the 1971 Attica State Correctional Facility riots. The crisis at Attica occurred as a result of minimal response by prison authorities to inmate grievances regarding overcrowding problems and inadequate facilities. Although initially not intending to riot, the inmates became incensed though a series of events, rebelled against the authorities, and took the prison. Their demands in ensuing negotiation, attempted to attain positive outcomes for their situation, and gain the awareness and support of outside parties to their conditions. The crisis at Attica unfortunately ended with a hostile retake of the prison by authorities. However, these events are a good example of the use of crisis by a group attempting to achieve positive outcomes.

Complicating the understanding of the role of perspective in defining crisis, are the positive and negative viewpoints of different parties involved in a crisis situation. As Fink mentions in his definition, a crisis may possess highly desirable or undesirable outcomes (15). This occurs as a crisis represents both dangers and opportunities depending upon the reaction of the people involved (Antokol 2). Thus, a characteristic of crisis is the event's ability to create a certain degree of risk and uncertainty (Fink 15). Whether this event is an
unanticipated opportunity for an entity or a potential for bringing it into disrepute will be an interpretation of perspective by the individuals involved. In a sense then, a duality occurs in that a crisis will be fueled by internal energy, that is from the initial catalyst, but the reality of the situation itself will be related by the outside forces which impact the positive or negative outcome (Lagadec 21).

Within a crisis, it is possible to identify differing crisis types as well as the stages through which a crisis progresses. Types of crisis are contextually dependent, but like contextual definitions have commonalities in their defining characteristics. The stages of crisis differ however, as phases of activity are possible to identify with a large degree of certainty

Types of Crisis

In a sense, types of crisis bring this discussion back to defining what a crisis is, or to understanding that there are common characteristics among all crisis types (Lagadec 32-2). These types can be broken down into disciplines, fields, etc. based on the context in which the crisis occurs. In his book on avoiding chaos in crisis, Lagadec investigates commonalities in crisis typology characteristics in his discussion of business, corporate, and military crisis. Lagadec's examination includes the work of Uriel Rosenthal who suggests general guidelines for typing crisis including:

- the unimaginable crisis requires that we think about what is truly unthinkable (these are actually very rare)
- the neglected crisis.
- the quasi-unavoidable crisis occurs despite attempts at prevention.
- the compulsive crisis results from a sort of innate ineptitude on the part of the relevant actors to manage the crisis (instead, through their actions these actors
help create a crisis situation)
-the wanted crisis, desired by certain actors (such actors are not limited to Terrorists; they may even include managers themselves)
-the wilful crisis is apparently secretly desired by all involved. (Lagadec 33)

When compared and contrasted to typologies by Lerbinger and Dougherty the characteristics of these guidelines make allowances for the simplistic aspects of almost any approach. To explain, Lerbinger defines four types of crisis:

- Technological crisis - caused by human error or unforeseen side effects in the equipment and processes designed to produce goods and services
- Confrontational crisis - actions of government or social action groups that oppose organization policies and behaviors or its employees
- Crisis of malevolence - individual or groups with criminal intent or malevolence toward the organization
- Crisis of managerial failure - ineptitude, negligence, callousness, or misconduct (6)

These categories incorporate into Rosenthal’s typology based on each category's defining characteristics. A technical crisis would be a quasi-unavoidable crisis, a confrontational crisis would fall under a wanted or wilful crisis, a crisis of malevolence would type as a wanted crisis, and a crisis of managerial failure would type as neglected crisis or a quasi-unavoidable crisis. Similarly, Dougherty suggests two categories of potential crisis, those that can be averted and those which can not be averted. This dichotomy divides Rosenthal’s guidelines but successfully incorporates Dougherty’s ideology.

A specific typology for universally characterizing crisis is difficult to accomplish because of the diversity and multidisciplinary nature of crisis and will not be utilized within the scope of this investigation. Instead, it is possible to create guidelines for classification which base on characteristics of the event
Stages of Crisis

The stages of a crisis are possibly one of the more concrete aspects of the concept itself. This certainty results from the ability to identify the beginning stages or catalytic events of a crisis, a period of dealing with or experiencing a crisis, as well as the conclusion or resolution of the situation. Research shows a strong agreement within this path of thinking. In the works of Holusha and Fink both a precrisis stage and a conclusion to the event are identified. However, although these authors possess similarities of thought, differences are observed in the development of Holusha’s model of stages compared to that of Fink.

Holusha identifies three stages of crisis, the precrisis, crisis, and postcrisis dimensions which he identifies on a pain curve [Figure 1] (Holusha 16). He explains the precrisis stage as a time of uncertainty marked by the characteristics of nonperformance, denial, and fear or anger. This period of crisis is not normally seen by the outside world, but a situation is recognized by invested parties (14). A crisis period follows precrisis. This time frame is characterized by the event itself as well as a type of failure and panic as the climax of the event occurs (19). Finally, the end approaches with a postcrisis period. This phase consists of shock and uncertainty from the proceeding events, but ultimately results in a radical change of some sort (21). This model evaluates the development of the average crisis situation. However, it perceives a crisis as a negative event, expressing ideas of failure.
Similar to Holusha, Fink examines stages of a crisis, but evaluates the activity in a different manner. He sees a crisis as having four distinct phases rather than three:

- Prodromal crisis stage: precrisis/warning stage
- Acute crisis stage: the point at which some damage has been done (shortest stage)
- Chronic crisis stage: clean-up/post-mortem, time for analysis, recovery (this stage can be indefinite)
- Crisis resolution stage: fourth and final stage - everything is well again (Fink 20)

The stages Fink describes compare to Holusha excepting the viewpoint which Fink's phases suggest and the addition of the last phase, crisis resolution. Fink's prodromal stage is compatible to Holusha's precrisis. The acute stage compares to the crisis stage. Discrepancy
occurs between these two frameworks though, as Fink breaks Holusha’s postcrisis into a chronic crisis and crisis resolution stage. The question arises though as to whether Fink’s crisis resolution stage is just a signal to the end of crisis or if this stage actually holds significance in the event itself. The merit of Fink’s phases in comparison to those of Holusha is that Fink’s phases make no implications as to the negativity of crisis. The model merely describes how the event progresses unlike that of Holusha. This discussion thus suggests, that Fink’s phases take a more holistic and encompassing view of the progression of a crisis.

Conclusion and Application

The ideas expressed in this study formulate a conceptual framework in which to view a crisis situation. Is the situation a normal occurrence, a conventional incident, or a crisis? From what perspective is the occurrence being evaluated? Through which stage of development is the crisis currently progressing? Within this framework it is now possible to evaluate the scope of “Scale of Crisis magnitude” looking at the models limitations and applications for the further study of crisis.

METHODOLOGY

This project will explore the scope of the Helsel model of the “Scale of Crisis Magnitude” within the conceptual framework of crisis. The investigation will evaluate the accuracy of how the model currently characterizes crises, the weaknesses in this characterization, and areas or possibilities for the expansion of the model. Based upon the
results of this analysis and the components of the conceptual framework, a new model will be created to facilitate the measurement of crises.

The fundamental elements of this investigation are the Helsel “Scale of Crisis Magnitude” [Figure 2], an index plotting the actual/potential number of persons affected by a crisis against the degree of actual or potential negativity of the incident, and the Helsel model, a written explanation. Other sources include course materials from the Leadership and Crisis class.

A qualitative research approach, based on literature analysis, will be used to determine the scope of this model. Specifically, several propositions emerge from crisis research:

At a basic level, it is possible to distinguish between normalcy, conventional incidents, and crisis.
Crisis is perspective dependent.
Crisis has both positive and negative connotations.
Crisis occur in distinguishable stages.

These propositions constitute the conceptual framework in which the Helsel scale is evaluated.

The accuracy of the Helsel model will be determined in two ways, that of comparing it to its written explanation and that of comparing its measurements against the conceptual framework of crisis. First, the visual representation will be compared to the written explanation authored by the model’s creator. The correlation of these two sources identifies the validity of this scale in its own right, that is, measuring the degree of negativity to the potential number of people involved. Is this model accurately measuring what it intends to? Second, accuracy will be measured by evaluating this scale by the conceptual framework. This comparison analyzes the accuracy of the ideas on which the model is based as well as the structure/organization itself. Understanding this model under these two sets of criteria
allows for weaknesses to be uncovered and areas of improvement to be noted. Using the results of this analysis, an attempt will be made to construct a new model for measuring crisis situations.

The developmental goals of the new crisis model are simplicity and the ability to span the multidisciplinary facets and infinite interpretations of crisis study. This framework will be created under two constraints, 1) The new model will contain the elements of the conceptual framework of crisis and 2) it will consider noted weaknesses of the Helsel model. The model will be constructed with the knowledge that limitations will occur and that the scale is two-dimensionalizing a dynamic phenomena. Nevertheless, the result should represent an advance in the understanding of crisis and how one might respond to it. To test the accuracy of the new model, a case will be applied to the scale, plotting the progression of the crisis situation to show the event's development and the usage of this instrument for leadership study.

ANALYSIS

The Helsel Model

In a short essay about the “Scale of Crisis Magnitude,” [Figure 2] Helsel\(^1\) describe the model and its purpose in the classification of different crises. He explains that the model, “is a measure of the magnitude of a crisis in terms of the actual or potential number of persons involved, measured on the y-axis, and the degree of actual or potential negativity, measured on the x-axis.” The categories (y-axis) ranging from personal, to organizational, to regional, to national, to international, to global, have unclear boundaries which are subjective, based on

\(^1\)The explanation of the scale of crisis magnitude was authored by Michael Helsel in conjunction with group members of the Attica project in the Leadership in Crisis course.
the perspectives of each individual involved in the situation/crisis. The same stipulations are placed on the factors of the x-axis, discomfort, failure, destruction, and death. Thus, each X placed on the graph with relationship to the factors on each axis, is not a specific point, but represents an area that extends in all directions. The semi-circular rings placed on the graph are labeled as types I-IV respectively. The intent of these rings is to categorize the severity of the crisis, moving from the inner ring outward.

**FIGURE 2**

- **SCALE OF CRISIS MAGNITUDE**
- **DEGREE OF ACTUAL OR POTENTIAL NEGATIVITY**

- Global
  - Urban Decay
  - Environmental crisis
- International
  - Cuban Missile Crisis
- National
  - Challenger
  - Attica
- Regional
  - Watergate
  - Cleveland Browns
  - Virginia Power
  - Hazing (involving death)
- Organizational
  - Flat tire
- Personal
Helsel makes four observations about crisis in relation to his model. These ideas describe what the model intends to portray in the continuum of Types I-IV:

- A shift from an internal to an external locus of control. (suggesting with this terminology that the reality of the crisis becomes defined by the outside environment as severity increases)
- A shift from stakeholder polarization to stakeholder uniformity. (The stakeholders become more aligned as the severity progress versus further apart when it is smaller)
- Increased media attention, ranging from local to international.
- An increasing difficulty resolving the crisis, while a decreasing difficulty diagnosing the problem or problems contributing to the crisis. (1)

These four observations demonstrate how the severity of crisis increases in each of the four Type rings on the model.

**Internal Analysis: Critique of the Helsel Model**

In comparing the explanation authored by the model’s inventors, with the physical representation, questions arise as to the usability of this scale as it is intended. In particular, two discrepancies appear, the inability of each y-axis category to be a factor in each of the four levels of severity for a crisis, and the ambiguity in the correlation of crisis severity Types I-IV to the four categories of the degree of actual or potential negativity along the x-axis.

Helsel includes Types I-IV in his model to differentiate severity levels of crisis. However, it is unclear why only the categories of personal and organizational crisis can attain all four types of crisis severity. The way the model is depicted, a regional crisis must be of the severity of a Type II, III, or IV. This suggests that these situations can not be minor at a regional level. However, the single quadrant format of the model accommodates plotting a
situation based on a coordinate of discomfort and one of regional...Following this ideology, the point categorizes as a Type II crisis, although it would only be causing the region discomfort. National, international, and global crisis are similarly limited. International and national crisis are depicted as only Type III or IV. Global crisis is only categorized as Type IV. This discussion then suggests that Helsel draws a correlation between the number of people affected by an incident and the severity of a crisis. This is supported by the y-axis categories, actual/potential number of persons affected, that are included within the rings of Types I-IV. Thus, what Helsel implies in explanation and what he depicts visually do not maintain a correlation.

The second discrepancy observed with this model is a perplexity in the connection of Types I-IV to the four categories along the x-axis, discomfort, failure, destruction, and death. The visual presentation of the model implies that these negative consequences are the degree of severity to be expected in the corresponding level of crisis. It is unclear though, whether this assumption is correct in light of the inability of the all y-axis categories to participate in all four x-axis categories. Thus, an analysis of the Helsel model, comparing the visual depiction with the written explanation yields a discrepancy in how the rings are laid out v. the plotting of examples based on the x and y axis. This structural analysis of the “Scale of Crisis Magnitude” tests the internal accuracy of the model: the correlation of the model's visual representation and written explanation. Also imperative to this investigation is an analysis of the content measure of the model against the conceptual framework established for crisis.
External Analysis: Application of the Conceptual Framework to the Helsel Model

The conceptual framework for this analysis is understood to encompass the following propositions:

- At a basic level, it is possible to distinguish between normalcy, conventional incidents, and crisis.
- Crisis is perspective dependent
- Crisis has both positive and negative connotations
- Crisis occurs in distinguishable stages.

This analysis will consider the accuracy of the Helsel model in light of each of the propositions. Does the model contain these elements, are they implied, suggested?

Proposition #1: At a basic level, it is possible to distinguish between normalcy, conventional incidents, and crisis

The first proposition tests the accuracy of the "Scale of Crisis Magnitude" based on the model's distinction between normalcy, conventional incidents and crisis. The structure of this model portrays two different approaches to measuring crises, measuring crisis by its severity as accomplished by the Type I-IV rings, and measuring crisis through plotting coordinates of magnitude on the y and x axes. The rings on the model categorize the severity of crisis: the categories they contain increase in severity as they move outward on the scale. This measurement relates to proposition one, as the measurement of the rings could be related to the increase of situational severity as an event moves from a critical incident to a crisis.

Specifically, a "flat tire" is placed within the first ring on the model. Depending upon perspective and situational factors, this event could categorize as a critical incident. Like the rings, the measurement by the axes suggest study of the magnitude of situations. In particular, this is observed in the x-axis categories: discomfort, failure, destruction, and death. The measurement of the x-axis correlates to proposition one as the degree of actual or potential
negativity increases along the continuum. The initial measurement of discomfort also holds potential correlation with a critical incident as this measurement only suggests a possible threat to a normal situation. Both measurement approaches of this model, the rings and the x-axis, contain a correlation between a separation between conventional incidents and crisis. However, because this separation is implied and not well distinguished from a crisis situation on the Helsel model, it is concluded that the "Scale of Crisis Magnitude" does not substantially support proposition one.

**Proposition #2: Crisis is perspective dependent**

The second proposition examines the accuracy of the Helsel model in the light of crisis as perspective dependent. This assumption is supported by the Helsel model: in the model's written explanation. This description states that the “Scale of Crisis Magnitude” was constructed in the knowledge that the placement of each X on the graph is based on the perspectives of the model's user. Thus, although perspective is not depicted in the visual representation of the Helsel model, perception is recognized as an accurate attribute of this model.

**Proposition #3: Crisis has both positive and negative connotations**

The third aspect of the framework in which to consider the Helsel model is the proposition that crisis has both positive and negative connotations. The “Scale of Crisis Magnitude” suggests that a crisis has a negative outcome. This statement bases on the label of the x-axis, “Degree of Actual or Potential Negativity.” Although it is understood that the model attempts to accomplish an understanding of the situation or what might negatively happen as a result of circumstances based on the number of people involved, some viewpoints
interpret crisis as positive. Thus, negative measurements of a situation limit this scale because they do not allow for positive situational outcomes or for changes in situation. All crisis do not end in failure, destruction, or death as implied by the scale. The discomfort factor on the x-axis grants leeway from the negative connotation of this model in that discomfort can be a factor of a change process or of a situation with a positive outcome. However, this observation is not substantiated with fact, nor is it discussed or used in a positive manner in the application of the Helsel model. Thus, the conclusion is drawn that the Helsel model only considers negative crisis situations in its measurement.

*Proposition 24: Crisis occurs in distinguishable stages*

Finally, the accuracy of the Helsel model is investigated in light of crisis occurring in distinguishable stages. As implied by the stages of crisis, prodromal, acute, chronic, and resolution, each stage has different levels of momentum and different circumstances are happening at different times. These stages suggest the dynamic nature of the phenomenon. Through the rings, the Helsel model demonstrates the severity of crisis. The categories of the x-axis allow the examination of crisis at different levels of negative outcome, discomfort, failure, destruction, and death. In spite of these classifications of a crisis situation, neither the rings, nor the x-axis factors refer to the stages of crisis development. References are only made for the observation of crisis progression toward negative outcomes, with no allowances for the restoration to normalcy (pre-prodromal) or movement towards resolution, factors of the stages of crisis. Thus, the deduction is made that the Helsel scale does not consider the stages of crisis in its measurement of the phenomenon.

This analysis of the Helsel “Scale of Crisis Magnitude” suggests that the Helsel model
does not accurately depict in the visual representation what is inferred by Helsel's own written explanation, nor does it take into account the criteria of the conceptual model proposed in this paper. It does not distinguish between normalcy, conventional incidents, and crisis, the model does not consider both the positive and negative connotations associated with crisis situations, and it does not account for the distinguishable stages of crisis. The positive merit of this model which gives credibility to the model’s accuracy, is its claim of observation of perspective. These findings in addition to the crisis factual framework are the backbone on which a new model to measure crisis is based.

**TRUDEL MODEL**

The analysis of the “Scale of Crisis Magnitude” concluded that the Helsel model, the visual depiction of the “Scale of Crisis Magnitude,” is neither accurate nor usable. A new model was thus designed that is accurate and usable across contexts. [Figure 3]

The new model measures the Center of Situational Control (CSC), y-axis, against the Degree/Nature of Threat, x-axis, in any given situation. The CSC derives from the ideology of Locus of Control (LOC) expressed in the Helsel model. Helsel uses the term LOC to describe the severity of a crisis situation. He describes this occurrence as happening as a shift is made in a situation from an internal to an external LOC, which in his model occurs as a situation moves though the continuum of Types I-IV [Figure 2]. However, this usage of the term is incorrect as the LOC is understood to imply a "self-assessment instrument to discriminate between people who feel their destiny is determined primarily by external forces... and people who feel their destiny is largely determined by internal forces" (Curphy
External
CSC

Internal
CSC

Prodromal Stage

Acute Stage

Crisis Resolution

Chronic Stage

Threat to
Normalcy/Stasis
[Conventional Incident]

DEGREE/NATURE OF THREAT

Threat to
Life

FIGURE 3

CENTER OF SITUATIONAL CONTROL
Thus, the idea behind the CSC incorporates the premise of LOC, internal and external control centers, and Helsel's idea that internal and external do not mean personal control influences, but different control environments which interact with one another in a crisis situation. So for the purpose of this model, the CSC (y-axis) acts to offer a range to identify the center of control in any situation. The control center has two components, an internal CSC and an external CSC. The internal CSC gradually diminishes up the continuum of the y-axis. In contrast, the external CSC increases up the y-axis. Obviously, external increases as internal decreases. The CSC's are presented separately however, to suggest the different participants in a crisis. Lagadec and Littlejohn suggest the utility of this double focus. In his description of the duality of crisis, Lagadec suggests that “crisis is fueled by internal energy but the reality of the situation is created by outside forces” (Lagadec 21). Similarly, Littlejohn notes that crisis “gains meaning through the individual needs of an organization and the environment in which the organization exists” (Littlejohn 8). These ideologies demonstrate the interaction of the internal and external environments which the Trudel model depicts. This suggests then, that a crisis is determined by the perspectives of the individuals involved, specifically, the individuals of an organization involved in the crisis and those individuals and groups of the organization's environment. These ideas thus form the ground for the creation of the continuum on the y-axis of the new index.

The Degree/Nature of Threat on the x-axis measures the threat to normalcy/stasis ranging to a threat to life. Similar to the depiction of categories in the Helsel model, these categories which set constraints on the beginning and the end of a situation have unclear boundaries as well as unclear middle ground. The Degree/Nature of Threat relates to the
stages of crisis, prodromal, acute, chronic, and resolution, with connections drawn between the conventional incident and prodromal stage. On this x-axis we omit normalcy, and note the distinction between a conventional incident and a crisis.

This model is intended for use in two capacities, understanding the implications and circumstances of one crisis and evaluating several crises. First, the model allows the user to categorize the perceptions and involvement of one crisis and to understand the relationships between the parties involved. This capacity of the model considers the dynamic nature of a conventional incident or crisis and allows the user to plot the movement as crisis progresses or as relationships between entities involved become interdependent. [Figure 5] Because the severity of crisis is lesser with an internal CSC, the idea this index promotes is the reduction of the external CSC and in turn the threat to life in order to make the crisis more controllable and to bring it back down into the realm of a conventional incident. To accomplish this intent, the index facilitates the use of external factors to help refocus the CSC internally or to show how the whole thing becomes uncontrollable.

The second way to use this model is to plot the relationships of several crisis. [Figure 4] Here however a spiral is used instead of a point to mark the situation’s place on the index. This spiral accommodates the dynamic nature of a crisis and demonstrates how the situation can potentially shift as the situation changes versus a plot mark which implies permanency.
FIGURE 4

CENTER OF SITUATIONAL CONTROL

External CSC

Internal CSC

Threat to Normalcy/Stasis
[Conventional Incident]

DEGREE/NATURE OF THREAT

Prodromal Stage

Acute Stage

Chronic Stage

Crisis Resolution

Threat to Life
Application of the Conceptual Framework to the Trudel Model

The conceptual framework of this investigation is one of two constraints under which the Trudel model was developed. As with the Helsel model, this new scale will be analyzed based on these four propositions.

Proposition 4.1: At a basic level, it is possible to distinguish between normalcy, conventional incidents, and crisis.

The first aspect of the conceptual framework questions the Trudel model's acknowledgement of the differences between normalcy, conventional incidents, and crisis. The way that the Trudel model is depicted, the x-axis, measuring the degree/nature of threat, assumes that a situation is in the realm of a conventional incident. Normalcy is omitted from this diagram as it is everyday. Although we measure crisis by this model, the point at which a shift occurs between a critical incident and a crisis is not depicted here. It is an unknown at this time. The stages of crisis listed beneath the x-axis, however, give an idea of how the stages might correlate with the degree/nature of threat, creating a guide for plotting the events of a situation. This is only a guide though, as the actual parallel of these two measurements is unknown. Thus, the Trudel model does consider the differences between normalcy and a conventional incident. The model however does relates an understanding of the difference between a conventional incident and crisis, but this difference is not depicted on the model at this time.

Proposition 4.2: Crisis is perspective dependent

The second aspect of the conceptual framework, crisis is perspective dependent, applies to the this model. When plotting the CSC against the Degree/Nature of threat, it is the perspective of the model's user that determines the location of the placemarker. Thus, for
each user of the model, the progression of one situation may be plotted in several different ways. Similarly, plotting several crises would most likely produce several different interpretations. This ability to record preconceptions a strength of this model as So, although the importance of perception is not stated on the model, it is an integral aspect of the Trudel model.

*Proposition #3: Crisis has both positive and negative connotations.*

The next test of the Trudel model is its accommodation of both positive and negative connotations of crisis. This model facilitates this aspect of the conceptual framework as it places no restrictions on either viewpoint. Unlike the Helsel model which measures the Degree of Actual/Potential Negativity, the x-axis of the Trudel model measures the Degree/Nature of Threat to any situation. This measurement looks at what could occur, but the events themselves dictate where they fall on the continuum. Thus, this model allows for an event to conclude under positive circumstances, but holds no restrictions for those which are negative.

*Proposition #4: Crisis occurs in distinguishable stages.*

Finally, this model can be examined in light of the fourth proposition: crisis occurs in distinguishable stages. This application of the conceptual framework to the Trudel model brings to light two weakness of this model, specifically in the description of the x-axis. First, a correlation is implied between the stages of crisis and the measured range of the x-axis. However, because this index measures the activity of a crisis, the chronic stage cannot be measured on this graph by location in the same manner in which the prodromal or acute stage can be marked. The second weakness of this model is its inability to assume that the acute
stage of a crisis is the circumstance which bridges the gap between a conventional incident and a crisis. To address these deficiencies of the index, the stages of crisis are drawn parallel to the x-axis on the index. The notation of these stages attempts to show the correlation between these two categorizations, but demonstrates their incompatibility.

These correlation of these four propositions to the Trudel model illustrates the role which this conceptual framework played in the model's development. Although the model can not support every aspect of the framework, these weaknesses are acknowledged and recognized as a future area for the model's improvement.

TRUDEL MODEL APPLICATION

To provide a more comprehensive understanding of the Trudel model, the following case, originally plotted on the "Scale of Crisis Magnitude," will be applied to the Trudel model and the thought process behind this application explained.

Case. Attica State Correctional Facility

The Attica State Correctional Facility, a maximum security prison located in upstate New York, became the center of the nation's focus in the fall of 1971. Through a series of circumstances and actions by authorities and inmates from July through September, a crisis occurred resulting in 39 deaths and 91 woundings (Wicker 314).

In July 1971 New York's Commissioner of Correctional Services, Russell G. Oswald received a petition from the "Attica Liberation Faction," a group of inmates claiming brutal and dehumanizing conditions at the state facility (6). Already concerned about tight budgets and prison unrest in Attica and other facilities, this correspondence by the convicts began a
futile exchange of letters between Oswald and the faction (6) confirming the fears of Oswald and Attica prison authorities which increased over the next several months. The fruitlessness of the inmates' efforts in their appeal to prison authorities, was confirmed in their minds again in early September when Oswald, Attica's Superintendent, Mancusi, and a prisoner representative met to discuss issues from the Liberation Faction's petition. The negotiation resulted in promised changes by Oswald, but again no action was seen (311). In retrospect, the interactions between authorities and inmates functioned to build tension and unrest between the two groups and established a common ground on which the inmates united.

The build up of tension among the inmates in Attica increased in September 1971. Late on a Wednesday afternoon, a guard misperceived the interaction of two inmates during recreation time, leading to physical defiance to the guards by both inmates (Clines 1). The guards, who retreated at the time, retaliated later in the evening under the direction of Mancusi, by beating the prisoners and placing them in solitary confinement (Wicker 311). Enraged by the perceived injustice to their comrades the night before, the A block prisoners liberated a third prisoner involved in the preceding day's events on their way to breakfast early Thursday morning. Finding the inmate gone, the authorities approached the line of prisoners on the way back from the meal. In the ensuing struggle, the Lieutenant in charge was knocked unconscious and the others guards with the inmates were beaten and their keys taken (311). The rebellion snowballed from this scene with the inmates taking the common area between the four blocks, the result of a defective lock. The rebellions's participants then spread through the rest of the prison, taking fifty hostages (311). By early afternoon, prison authorities were able to regain control of part of the prison, but the convicts had control of
most of the prison's resources. An initial attempt by the inmates toward negotiation was rejected by Mancusi (312).

Leadership quickly formed among the ranks of the inmates as blocks nominated leaders, hostages were assigned inmate guards, lookouts were chosen and placed, food and clean-up details were organized, and a negotiating committee was nominated. (312). These actions formed a "rough social order" under which the inmates were to function for the next several days (Clines 44).

In the opposite camp, the authorities organized their resources as well. Commissioner Oswald arrived at Attica around 2:00pm the same afternoon, and soon thereafter allowed a law professor and a black Buffalo assemblyman into negotiations with the inmates. There the men received the demands of the prisoners and a list of observers requested to be present at the negotiations. (44) The purpose of these observers was to lend outside support to the prisoners' requests by individuals including Huey P. Newton of the Black Panthers, Minister Louis Farrakhan of the Muslim Mosque in Harlem, William M. Kunstler a civil rights lawyer, and media groups (44). No concessions were made by either party toward negotiation. Further rounds of negotiation between the authorities and the inmates continued through the day, attended by different members of the administration and media sources. The results of these talks were concessions granted to the inmates by Oswald and an injunction against administrative and physical reprisals which was presented to the inmates on Friday morning (Wicker 312). However, the inmates refused the injunction, claiming that it was inadequate for their needs (Clines 44). Learning of this response, Oswald refused any further direct contact with the inmates.
Throughout the remainder of Friday, Saturday, and Sunday the relations between the administration and the inmates continued with little change. Observers checked the status of the hostages on occasion and the administration continued to work on meeting the demands of the inmates referred to as the 28 Points. In addition, they attempted to influence Governor Rockefeller's aid, present at the prison, to advise him to come to Attica (Wicker 313). These appeals were repeated throughout the day Sunday until Rockefeller made a public refusal. Finally, the 28 point proposal was presented to the inmates on Saturday evening. They again rejected the efforts of the authorities. This rejection of the 28 points by the inmates signaled the end of peaceful efforts by authorities. State police marksmen and attack units then assembled in the controlled blocks positioning for attack. At the shut-off of power and the use of gas on the prisoners, marksmen fired and the attack began (314). Several minutes later the attacks stopped. The results of the confrontation yielded 39 deaths and 91 wounded. Ten hostages and 29 inmates were killed by the authorities in the attack, while only two hostages were seriously injured by the inmates.

Analysis

On Helsel's "Scale of Crisis Magnitude," the events of the Attica State Correctional Facility were classified as a Type IV crisis, plotting the event between a regional and a national level, y-axis against death, x-axis. As the Helsel model was proved inaccurate and unusable in this investigation, Attica will be measured on the Trudel model in order to understand how these events progressed, culminated, and resolved. To accomplish this intent, this event will be indexed in both capacities of the Trudel model: that which allows understanding the implications and circumstances of one crisis and that which plots several
Using the model to measure a single crisis, the events of this rebellion have been broken down into nine facets, or things which impact the progression of events in this situation. They are represented by $X_0$ through $X_e$ on the Trudel model. [Figure 5] For the purpose of clarity, these facets will be explained in terms of the event(s) they represent and in terms of their positioning on the model. Also, positions of the points will sometimes be expressed as a percentage of a distance in order to give a point of reference for the reader.

$X_0$ represents the starting point for the activity at Attica on the Trudel model. This point does not represent Attica in stasis because normalcy is omitted in the measurement of the x-axis on this model. Thus, unrest is occurring in the prison at this time. On the model, $X_n$ is located approximately 25% up the y-axis and approximately 25¾ up the x-axis. The y-axis location, demonstrating a large internal CSC and a very small external CSC, illustrates that the inmate unrest is under the control of Attica prison authorities, with little or no external intervention. The x-axis position of this point shows that this situation is a threat to stasis, but that is still in the stages of a conventional incident. The $X_n$ position shifts however with the involvement of a control source, external to the Attica community, in the prison environment. The result of this shift is position $X_1$.

Unhappy in their circumstances, a group of Attica inmates calling themselves the "Attica Liberation Faction" sent a petition to Commissioner Oswald. The prisoners are unhappy with conditions and treatment. They feel that the prison is overcrowded and that facilities are inadequate. With the appeal to New York's Commissioner of Correctional Services, Oswald, the prisoners introduce the external influence of Oswald into their situation which continues through a time period of fruitless correspondence. On the model, $X_1$ is
FIGURE 5

DEGREE/NATURE OF THREAT

Prodromal Stage  Acute Stage  Chronic Stage

Threat to Life

Threat to Normalcy/Stasis

[Conventional Incident]

Crisis Resolution
located above $X_0$ about two-thirds of the way up the y-axis and approximately 30% along the x-axis. The y-axis position, demonstrating a moderate external CSC and a smaller internal CSC, illustrates the increased external influence in this situation. As the Commissioner of Correctional Services for the state of New York, Oswald has a large amount of power over Attica. Thus, the prisoners are appealing to this external influence on their current circumstances to produce positive results. The x-axis location for this point shifts right from the $X_0$ position. This occurs because the appeals and ensuing correspondence with Oswald by the inmates increases the concerns of the administrators, and produces increasing tensions between the authorities and the inmates as changes do not result from the inmates' appeals.

The balance of control centers and the nature of threat shifts again, moving from the $X_1$ to the $X_2$ position as a misunderstanding by a prison guard results in defiance of authority by inmates. Specifically, the inmate applied physical force against the guard which was quelled at the moment and dealt with later that evening. This contained rebellion by the inmates functioned to widen the gap between the guards and the inmates. $X_2$ is positioned about 10% of the way up the y-axis and approximately half way along the x-axis. This position is down and right of the $X_1$ position. The y-axis coordinate possesses a strong internal CSC and a weak external CSC. This occurs as this incident is solely between members of the Attica community; it is internal to the prison. Oswald, although a player in the agitation of the inmates, has no role in these events. The x-axis coordinate is again located to the right of the $X_1$ position. The increased assertiveness of the inmates, shows their increased agitation, heightening the degree/nature of threat to the situation.

With the increased tension on both sides, the next positional shift in this situation occurs as the inmates overpower the guards accompanying them from the mess to the cell
block. This incident, represented by the shift from $X_2$ to $X_3$, sparks the actions of the inmates to spread throughout the rest of the cell blocks, overpowering the prison. In this chaos, the inmates take fifty hostages. On the model, $X_3$ is located approximately 10% of the way up the y-axis, and three-fourths of the way along the x-axis. Like the $X_2$ y-coordinate, the $X_3$ point has a high internal CSC and a low external CSC. This again derives from the internal nature of the revolt; it involved only Attica authorities and inmates. The x-axis similarly, again shifts right. This shift occurs as the actions on the part of the guards and the inmates escalated to unchecked violence. The inmates knocked the Lieutenant in charge unconscious, and beat the other guards with them and took their keys. In addition, hostages were taken. Both of these incidents pose a severe threat to life.

Having passed the point of a conventional incident at a point during the last three shifts, the activity at Attica is now in a crisis state. A shift occurs in this state as Oswald once again exerts control over the situation at Attica. This moves the focus of the events from a position at $X_3$ to one at $X_4$. On the model, $X_4$ locates approximately two-thirds up the y-axis and three-fourths along the x-axis. This is a movement directly upward from $X_3$, signifying the increase in external CSC and the decrease in internal CSC. The significance of this y-axis vertical shift is that it is at this point that negotiation begins between the authorities and the inmates. Previously, Mancusi, Attica's Superintendent, had rejected efforts by the inmates to negotiate. Oswald, however not only proceeded to communicate, but sent in a law Professor and a Buffalo assemblyman. Thus, the threat to life, x-axis, does not change, but the involvement of external forces on internal controls.

An upward shift occurs again with no horizontal movement with the inclusion of media and observers in the authority/inmate negotiations. These involvements move $X_4$ to the
position on the model. This coordinate shows a very high external CSC on the y-axis.

The y-axis position illustrates the Attica scenario here as the negotiations with the inmates are primarily facilitated by Oswald. At this point in negotiation, the authorities have received the demands of the convicts which include a request for a specific list of observers to be present. In addition to the media, these observers are a means through which the inmates hope to gain validity for their claims and a positive change to their environment. Both of these groups are forces outside of Attica, and thus external CSCs. As before though, the x-axis coordinate does not shift as no means are reached to reduce the threat to life. These factors then define the vertical but not horizontal movement.

The X₅ position again shifts vertically, as yet another external factor is added to this situation. This external intervention occurs through the appeal by the observers to the governor of the state of New York, Governor Rockefeller. Although intervention by Rockefeller in the Attica scenario does not occur, the active appeal of the observers and Rockefeller's aids to him signifies the level of external influence that Attica officials felt necessary in order to control the inmate rebellion. On the model, the appeal to Rockefeller moves the focus of control from position X₅ to X₆. X₆ locates where the y-axis is at its highest degree of external CSC and at the lowest internal CSC and where the x-axis position is again three-fourths down the x-axis. As before, the high degree of CSC does not reduce the nature of threat in this situation, which is a serious threat to life.

Because intervention by external forces failed to produce the positive results which both the inmates and authorities of Attica anticipated, the authorities of Attica, in collaboration with external factions, act against the inmates to end the rebellion. These actions move the focus on the model from the X₆ location to the X₇ point, down and right of
$X_6$. This repositions the y-axis coordinate at a position approximately two-thirds of the way up the continuum where the external CSC still exceeds the internal CSC. The x-axis coordinate extends to the end of the continuum as loss of life occurs. In this move, the authorities retake Attica by force with loss of life to both inmates and hostages. Both Attica authorities and external factions, including Oswald, participated in the decision for this action.

Finally, the focal point shifts back to the $X_0$ position described as $X_8$. Here the actions experienced in $X_7$ put the center of control back into internal control and reduce the threat to life back to a threat to normalcy/stasis. Complete normalcy is not yet restored here as the consequences of the actions for the prisoners are not resolved.

The second capacity of the Trudel model is to show relationships of several crises. In this instance, only Attica will be plotted on the model, but the point which the Attica riots represent, demonstrates a different analysis process from the above application.

To plot Attica as one dynamic point on the Trudel model requires two considerations; where does the overall situation fall on the CSC continuum and what is the overall Degree/Nature of Threat for the situation. To determine Attica's CSC, the amount of external CSC versus internal CSC was examined. In this situation, external influence played a vital role in this situation, through appeals by the inmates and negotiation intervention. Oppositely, internal influences contributed largely to the actual riots in the prison because of adverse living conditions. Considering these factors, Attica places approximately two-thirds up along the y-axis. [Figure 6] This placement allows for the influence of both parties, but a stronger external CSC.
FIGURE 6

DEGREE/NATURE OF THREAT

Prodromal Stage  Acute Stage  Chronic Stage

Crisis Resolution

External CSC

Internal CSC

Threat to Normalcy/Stasis [Conventional incident]

Threat to Life

Attica Correctional Facility Crisis

CENTER OF SITUATIONAL CONTROL
Deciding the x-axis coordinate requires similar consideration. From the beginning of the inmates' appeal to Commissioner Oswald, the Attica environment deviated from stasis, placing the situation on the left end of the continuum. The ensuing events created a larger and larger threat to the lives of parties involved including hostages, inmates, and other authorities. Therefore, because the threat to life and eventual loss of life plays a primary role in this situation, the x-axis coordinate ultimately places at the far right end of the continuum.

Surrounding the Attica plot on the model is a spiral. This spiral represents the dynamic nature of this occurrence. Thus, the point of location for Attica on the graph is not a fixed position, but a spot which approximates the area most suited for this situation.

The implications of the Trudel model for the field of Leadership Studies, is to provide an instrument in which leaders can understand a situation in order to take proactive measures to control it. For example, in the Attica Case if authorities could have plotted the events of the riots on a scale such as the Trudel model, they would have seen that their actions were pushing the inmates away from the desired internal focus (y-axis), and normalcy (x-axis). Seeing where events stood versus where they intended them to be would allow leaders to take actions to move events out of crisis situations back into a state of stasis. This use might have produced more proactive leadership by Attica authorities, changing the ultimate outcome of the situation.

**CONCLUSION**

Crisis is a dynamic phenomenon which exists throughout our societies and enters into many facets of our lives. Often times, leaders arise out of these crisis states, directing us
though periods of threat, discomfort, and change. Surprisingly, research for this field does not directly parallel the seemingly large occurrence of these events in our environments. Because of this limited scope of research and the large scale of occurrence, this examination was undertaken to broaden our knowledge of crisis and to understand the impact that this phenomenon makes on leadership studies.

To accomplish this intent, this investigation evaluated one aspect of crisis study, the Helsel "Scale of Crisis Magnitude." This model compared the actual/potential number of persons affected by a crisis situation to the degree of actual or potential negativity of a situation. Through testing by two means, an internal evaluation comparing the visual depiction to the written explanation, and an external evaluation comparing the conceptual framework to the model, Helsel's model was found inaccurate and unusable. However, data from this analysis as well as the conceptual framework, provided the groundwork and ideology on which the Trudel model is based. This model is intended for use in all fields and by all people through its simplicity and ability to span contexts. Ideally, it can encompass personal crisis ranging to organizational and world crisis.

In addition to differences in structure and specific measurements, a main difference between the Helsel and Trudel models is the use of perspective. For the Trudel model, perspective is a strength. In one capacity, for example, a leader can apply the model to their own situation. In addition, an outside force (i.e. a consultant) can apply the model to the same events. Comparing the two situational measurements allows the leader to understand not only what is happening or potentially happening with the situation, but how this event is viewed externally. Proactive measure can then be taken to improve upon the situation. Thus, for the Trudel model, perspective plays a vital role for both leadership and crisis research.
functions.

Ideally, the Trudel model requires testing by several other examples, or by the plotting of the same example by several different individuals due to its dynamic nature and its dependency on perspective. This testing would demonstrate the feasibility of this model in an actual crisis situation. However, at this time, new proposals have been made which change the structure and to some degree the measurements of this index. Specifically, it is under determination whether the index should have four axis (top, bottom, left, and right). The right axis would measure the CSC of the environmental factors of the crisis. The top axis would tentatively measure the stages of crisis. Also suggested, are the addition of point of reference guidelines along each axis of the current model (i.e. degree markers ranging from one to ten) to expedite and simplify the designation of coordinates. Because of the uncertainty of these measurements, and the implications of these changes on the current model, these modifications and thus testing will await further research.
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This investigation is complete with special thanks to Jason Fiehler for his contribution to the graphics within this paper.
APPENDICES
Chronology of Events

July, 1971  Commissioner Oswald receives petition from Attica Liberation Faction.

Sat., Aug. 21  George Jackson dies, supposedly shot while attempting escape from San Quentin prison.

Mon., Aug. 22  Attica inmates fast and hold a silent protest at breakfast.

Thurs., Sept. 3  Oswald confers with Attica Superintendent Mancusi and prisoner representative Lott over July petition. In a tape-recorded message to the inmates, Oswald promises that changes will be made eventually.

Wed., Sept. 8

4:30 P.M.  Inmates Dewer and Lamorie defy Corrections Officer Maroney and are ordered to solitary confinement in Housing Block Z.

After Dinner  When Dewer and Lamorie are taken to HBZ Corrections Officer Boyle is hit in the face with a soup can reputedly thrown by William Ortiz.

Thurs., Sept. 9

9 A.M.  Ortiz is liberated from his cell by other inmates to go to breakfast.

During breakfast, authorities discover that Ortiz is absent from his cell. Five Company is ordered back to its cells.

5 A.M.  Lt. Curtiss approaches Five Company in A-tunnel to effect this. Curtiss is knocked unconscious and other guards are beaten, their keys taken. The intraprison phone is ripped from the wall.

A.M.  A defective bolt in the gate at Times Square gives way under the pressure of a group of inmates and the rebellion spreads through the prison. Quinn, the guard on duty there, sustains serious skull fractures. Fifty hostages are taken.

Morning  Hostages are protected, in particular by Black Muslims. Roger Champen begins to organize inmates in D-yard.
Chronology of Events

EARLY AFTERNOON Authorities regain control of part of the prison. Mancusi alienates inmates in a negotiation attempt at No Man's Land.

Inmates appoint lookouts and guards for hostages, ration captured food, organize clean-up details, and nominate a negotiating team.

2:00 P.M. Commissioner Oswald arrives at Attica.

3:00 P.M. Schwartz and New York State Assemblyman Eve arrive in D-yard and are presented with the Five Demands and a list of persons to be invited as observers of the negotiations.

4:45–5:15 P.M. Oswald, Schwartz, and Eve confer with inmates in D-yard.

Oswald is advised by state police that sufficient force is present to retake the institution.

5:45–6:44 P.M. Oswald returns to D-yard with New York Times, Buffalo newspaper, radio, and TV reporters. Inmates present the Fifteen Practical Proposals.

7:30 P.M. Assistant Commissioner Dunbar, Assemblyman Emery, Eve, and Schwartz enter D-yard and are asked for a federal court injunction against administrative and physical reprisals. Champen, Oswald, and Schwartz draft the injunction outside of D-yard.

11:30 P.M. Schwartz leaves to obtain injunction.

Fri., Sept. 10

8:30 A.M. Schwartz returns with the injunction from Federal Judge Curtin. It is rejected by inmates.

11:25 A.M. Oswald enters D-yard. The injunction is torn up by Rosenberg. Oswald decides that he will no longer negotiate directly with the rebelling inmates.

LATE AFTERNOON Observers contact D.A. James but fail to obtain amnesty guarantee.

EVENING Observers enter D-yard and inspect hostages.

At inmates' request, some observers inspect C-block. Kunstler arrives in the Stewards' Room and telephones Bobby Seale of the Black Panther Party.

11:30 P.M. Observers again enter D-yard. Inmates add demands that Mancusi and Dr. Williams be expelled from the Attica staff.

LATER Unexplained noise from C-block prompts fear of attack and "red alert" in D-yard. Eve and Dunne ascertain that no reprisals are taking place and return to D-yard with members of the Fortune Society, Ingram, and Kenyatta.

Sat., Sept. 11

4:30 A.M. Observers leave D-yard.

The observers choose an executive committee from among their number.

Wicker, Jones, and Tepper visit D.A. James in Warsaw in an attempt to obtain something similar to amnesty for the inmates.

10:00 A.M. James gives them a statement that there will be no prosecutions or vindictive reprisals.

11:00 A.M. Observers who have left the prison have difficulty being readmitted.

1:00 P.M. Observers meet again. James' letter is not well received.

Wicker proposes that the executive committee should attempt to winnow down the inmates' demands and that all others leave. Only six others leave, and they are locked out.

4:30 P.M. Corrections Officer Quinn dies.

Observers finish 28-point package and decide to wait for Scale before presenting it to the inmates.

6:30 P.M. Scale sits in a car outside the prison for an hour and then leaves, while Oswald and observers discuss his admittance. State police are sent after him to request his presence.

8:30 P.M. Scale enters the Stewards' Room and refuses to endorse the 28 points. Observers enter D-yard to present the 28 points. Some observers leave upon presenting the sheet of paper, but others, upon seeing the inmates' anger, make the decision to present the points orally.

The 28 points are ripped up. Remaining observers leave.

Sun., Sept. 12

MORNING Woman managing a diner becomes hysterical over the presence of Arthur Eve.

8:30 A.M. Scale arrives at Attica. Observers group again in Stewards' Room. Scale walks out.

10:50 A.M. The observers try to influence Governor Rockefeller's representatives to advise him to come to Attica.

11:45 A.M. The observers draft and complete a statement to the public.

1:11 P.M. Oswald agrees that observers may enter D-yard at 3:00.

Observers telephone Rockefeller themselves, trying without success to persuade him to come to meet with them.

3:45 P.M. A small group of observers enters D-yard, followed later by black and Puerto Rican media representatives. Hostages are interviewed.

Inmates officially reject the 28 points. They leave the next move up to the commissioner.
Chronology of Events

6:17 P.M. Observers leave D-yard for the last time.

Rockefeller states publicly that he will not come to Attica.

9:26 P.M. Oswald meets with the observers, who plead for more time.

10:35 P.M. The meeting breaks up. Nine observers agree to spend the night in the Stewards' Room.

Midnight. Oswald phones Rockefeller in a last attempt to persuade him to come.

Mon., Sept. 13

6:55 A.M. Observers learn that Oswald has broken contact with them.

8:00 A.M. Oswald presents inmate Clark with a final statement of his position.

8:30 A.M. Observers read a copy of Oswald's memorandum to Clark.

Inmates stall for time.

State police marksmen assemble unseen on the roofs and third floors of A- and C-blocks.

Attack units assemble on first and second floors of A- and C-blocks.

9:05 A.M. Hostages are seen being led blindfolded to a walkway near Times Square, knives at their throats.

9:30 A.M. Inmates' response to 28 points is negative.

Eleven corrections officers with weapons gather, ignorant of orders, in a third-floor corridor.


9:52 A.M. Firing stops.

10:30 A.M. D- and C-blocks are cleared.

1:40 P.M. Badillo, Eve, and Garcia are told by Oswald that, as elected officials, they will be given a tour of the institution. All other observers are requested to leave.

Afterwards The results of the carnage are tabulated and it becomes known that two hostages were seriously injured by the inmates, whereas 10 hostages and 29 inmates were killed by corrections officers and state troopers. Three hostages, 85 inmates, and one trooper were wounded.

APPENDIX ONE

The Five Demands

To the people of America

The incident that has erupted here at Attica is not a result of the dastardly bushwacking of the two prisoners Sept. 8, 1971 but of the unmitigated oppression wrought by the racist administration network of the prison, throughout the year.

WE ARE MEN! We are not beasts and do not intend to be beaten or driven as such. The entire prison populace has set forth to change forever the ruthless brutalization and disregard for the lives of the prisoners here and throughout the United States. What has happened here is but the sound before the fury of those who are oppressed.

We will not compromise on any terms except those that are agreeable to us. We call upon all the conscientious citizens of America to assist us in putting an end to this situation that threatens the lives of not only us, but each and everyone of us as well.

We have set forth demands that will bring closer to reality the demise of these prisons institutions that serve no useful purpose to the People of America, but to those who would enslave and exploit the people of America.

OUR DEMANDS ARE SUCH:

1. We want complete amnesty, meaning freedom from any physical, mental and legal reprisals.

2. We want now, speedy and safe transportation out of confinement, to a non-imperialistic country.

3. We demand that the FEDERAL GOVERNMENT intervene, so that we will be under direct FEDERAL JURISDICTION.