A PRELIMINARY ANALYSIS OF HIGH-STAKES DECISION-MAKING FOR CRISIS LEADERSHIP

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Crisis Management
ABSTRACT: High-stakes decision-making represents a critical component of crisis leadership. This study examined the decision-making processes practiced by global, national, and local crisis leaders to identify common decision-making process traits and propose a useful model to guide crisis leaders' high-stakes decision-making. Crises have distinct factors: they are time sensitive, pose significant risks, and require consequential decisions. A sample group of fifteen national and international expert crisis leaders from national security, law enforcement, and government sectors was selected for participation in this study. Seven popular decision-making models were deconstructed into individual process traits and turned in a survey. The experts were asked to identify process traits from the survey that they felt best reflected their approach to decision-making. The results were analyzed and a new model assembled based on their expertise. These findings identified a pattern of practice across the spectrum of crisis leaders and demonstrate the potential usefulness of a new decision-making model that captures the decision-making process traits of expert crisis leaders. The new model was compared to the currently used twenty-five year old Naturalistic Model, as well as other popular decision-making models in table-top crisis scenarios. This research provides inexperienced crisis leaders a decision-making model drawn from the experiences of national and global crisis decision-making experts.
“Disruptive situations that require urgency, involve novel decisions and immediate and decisive action” (Pauchant and Douville, 1993)
Factors that influence or interfere:

Internal and External Factors

- Extreme Insecurity and Vulnerability
- High Cost, including loss of life, potential armed conflict, and victims
- Greater Unknowns and Evolving Outcomes
- Stakeholders
- Enemies
- Media and Transparency
- Politics and Bias

“Unique contextual factors put added pressure and stress on the leader.”
When a crisis leader makes a poor decision, there are multiple ramifications from the loss of lives to losing their job.

“Crisis leaders from a small town often mimic the decisions made by larger surrounding cities, assuming the spotlight would be on the city leaders.”
Vulnerability:

International crisis and the leader believes the power is in the hands of others the decision-maker will focus on domestic issues.

When a leader feels vulnerable they give in to those with power and agree with decisions to appease others.
High Cost: Threat of War, Loss of Life

The mere fact that war is possible adds a layer of complexity unknown to non-crisis.

When decision-making is happening on a global level, the threat of war by one party is often the cause of the crisis.
High cost: Victim Management

The most volatile of all crisis.

The success or failure of a crisis event depends heavily on the victims’ perspectives.

Children * Family * Culture
High cost: Decision May Increase Victim Number

President Truman bombed Hiroshima and Nagasaki to save a half million American soldiers.
High cost: Destruction of Land and Property

Examples of other costs associated with crisis decisions-making are destruction of land and property on a grand scale.
Greater unknowns and evolving outcomes:

The impact limited resources and security have on populations during a crisis have rarely been determined at the onset when decision-making was required.

Costs cannot be delineated

Victim count may continue to increase

Threats may continue to rise

The crisis decision maker must continually adapt, having confidence that they are making the best decision in that moment.
Stakeholders:

Crisis complications involve concessions to stakeholders a crisis leader must make to secure the best possible outcome. The communities and governments affected by the crisis decision are examples of invested stakeholders. Those with control over the resources have control over the decisions being considered.
Enemies:

Knowing who is the enemy and how they operate guides and strengthens decision processes.

An option or outcome may work for one type of enemy but not another.

The terrorist enemy has created a sense of extreme insecurity for civilians and soldiers.
Media:

Most of us experience disasters through mass media.
Gaps in knowledge about the crisis.

If decisions are shared with the public the media will use it to benefit their cause.

The media will also not hesitate to point out every flaw in the decisions made by crisis leaders.
Determining how much information the decision-maker shares with the public must be decided quickly and decisively. The ramification of sharing too much or not enough is a factor that weighs heavily on the crisis leader.

**Imminent Crisis**

Potential for Mass Chaos, Looting, and Mayhem
One method to maintain or keep power for the crisis leader is to not share all of the potential outcomes or options during the decision-making process.

Guarantee the preferred outcome.

Remove transparency and negotiate behind closed doors.

When the decision-making option is transparent, the crisis leader may lose the flexibility to negotiate or to reconsider alternative options.
Politics:

There is an innate fear that if too much is shared, it will be used against them.

Dispersal of power.

Continuous bargaining game.

Distrust and hostility.

Time is an enemy in crisis decision-making, the more time spent deliberating, the greater the opportunity for trust diminished, and fear or hostility take over.
Bias:
Shaping the options and outcomes.
A member’s opinion may have more weight than others.
Acceptance of new information only when it supports their opinion and ignore non-supporting information.
Participants may be fed biased information to control outcomes.
Bias related to a host of human attributes - age, gender, education, marital status, occupation, and ethnicity- were found to be predictors of how people weigh in on particular issues.
Decision-making Models

• Direct the decision-making process and guide options for choosing a course of action.

• Developed by examining how experts made decisions in varying situations.

Models are not necessarily linear and are not always a series of steps one must follow to answer a question. They may be more conceptual, providing a framework for a way of thinking.
Determining the model to be used...
- Who will make the decisions?
- How will members contribute?
- When must the decision be made?
- How is the team formed to start the process
The models were chosen based on:

- Their frequency reported in current literature.
- Diversity of models.
- Connection with crisis decision-making.
- Allowed for group discussion or silent voting.
- Gave weight to options or outcomes.
- Allowed for distance voting to ensure diverse representation in the selection process.

**Decision-making Models For This Study:**

<table>
<thead>
<tr>
<th>Model Type</th>
<th>Name</th>
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<tr>
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<td>Multi-Attribute Utility Analysis Model (MAUA)</td>
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</table>
Decision-making Models: Rational, and Intuitive

Rational models are used most frequently in strategic decision-making. Rational decision models are based on assumptions as well as facts.

- Rational Model
- Political Model

These two models were chosen because of their association with high stakes decision-making.
Intuitive models draw on intuition and experience.

- Nominal Group
- Delphi

The two models were chosen because they are frequently used and closely resemble the methodology used in this study.

Decision-making Models For This Study:
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Decision-making Models: Rational, and Intuitive

Combinations of the rational and intuitive approaches.

The NDM has been used in crises when time was limited, all options could not be considered, and the expert had to make the decision based on intuition and expertise. The MAUA was the predecessor of the NDM model.

This model was developed using site responders on the ground acting and reacting, rather than managerial decision-makers.
Decision-making Models: Process Traits

Process Traits are defined in this study as

“traits that relate to the different decision-making models as defined by their authors”

The Process Traits were gleaned from the authors that defined the models or by researchers that use or research the models.
Decision-making Models: Naturalistic Decision-making Model

- Closely mimics a high-stakes decision-making.
- Uses experience and instinct to make effective decisions without analyzing alternatives and is used in real world environments where time is critical.
- Development of the NDM model for decision-making included observation of decision-makers such as firefighters, emergency room personnel, and urban foreground commanders, as they handled non-routine events.

Naturalistic Decision-making Model Process Traits
- Undefined goals
- Needed information is missing
- Conditions continue to change
- Time Constraints
- High stress environment
- Multiple people involved
- Organizational goals exists
- Decision makers are experienced
Decision-making Models: Political Model

- A personalized bargaining process.
- The needs and desires of the members outweigh rationality.
- Is seen as a battle, and the goals are defined by self-interest, not for the good of the department or the organization as a whole.
- Power struggle is acknowledged and considered.
- Emphasis on the roles conflict and struggle play in the process.
- Includes disagreement about the ends or at least the ordering of outcomes.

Political Model Process Traits
- Needs of the members outweigh rationality
- Goals defined by self interest
- Decision-making is seen as a battle
- Power and influence weigh heavily on outcome
- Focus on more than one issue at a time
- Power is decentralized
- Incrementalist approach
- Structure of organization influences outcome
The Rational Model (RM) is based on the consensus belief that humans are rational creatures, and they enter into the decision with known objectives.

Herbert Simon believed the efficiency of each outcome must be known, thus giving decision-making a quantitative approach to the art of choosing.

### Rational Model Process Traits
- **Quantitative Approach**
  - Known objectives
  - All options are assigned a number based on value
  - Assumes objective data
- **Formal process of analysis**
  - No time constraints
  - Unlimited resources to evaluate each choice
  - Requires complete knowledge of information about alternatives
Multi-Attribute Utility Analysis Model (MAUA) can be used in everyday decisions. This is a tool that will help make decisions that have more than one favorable response/choice/answer. When the attributes are defined, and the criteria that will be used to measure them is identified the results are plotted.

MAUA was chosen as a sample model because it was a predecessor to the Naturalistic Decision Model.

MAUA Model Process Traits
- Useful for everyday decisions
- More than one response/choice/option
- Results are plotted
- Each option weighed and considered
- Outcome decision based on plot
- Time-consuming
- Useful for everyday decisions
- More than one response/choice/option
Decision-making Models: Nominal Group Model

- A structured orderly procedure set out to obtain qualitative data from an expert target group.
- The members write down their response, then read their statements aloud, without discussion, and the responses are recorded.
- After recording there is a conversation, potential debate, and a silent vote.
- This model removes bias while making a high-stakes decision.
- Some unfortunate attributes of the model include the lack of communication and conflict.

NGT Model Process Traits

- Structured, sitting around a table
- Writing phase, all the options on paper
- Oral phase, sharing options without discussion
- Discussion of the recorded ideas to clarify/evaluate
- Conversation & debate
- Silent independent voting by individuals
- Rank ordering or rating procedure results
- The "group decision" is the pooled outcome of individual votes
Decision-making Models: Delphi Model

- A method used for the elicitation of opinions of others and involves the assistance of a questionnaire.
- Questionnaires are sent out, returned. Adjustments are made and sent to only members that returned the first one.
- Allows for distance and is anonymous.

Delphi Model Process Traits
- No face to face meetings
- Decisions made by group without contact
- Vote is anonymous
- Internet needed
- Sequential questionnaires
- Multiple rounds
- Time-consuming
- The responses are shared with group prior to next round
Decision-making Models:
Black Model

- The oldest model in this sample group and was chosen due to its simplicity and because it was the only option that allowed voting members to abstain.

- This model is not as well-known as the others; however it was deemed valuable in this study due to the option to abstain and the ability to dampen the effects of bias.

- 2nd and 3rd choices are valued.

Black Model Process Traits
Weighted Responses
- Member has the option to abstain
- Preferred answer or answers
- Public choice theory, use of economic tools to analyze
- Point system
- Weighted Responses
- Preferred answer or answers
Consensus models harness insights from appropriate experts to synthesize information and enable decisions or conclusions to be made with higher degrees of confidence. Consensus models are structured, systematic, and involve panels of experts as a method to make decisions.

- The study design draws on two consensus models, **Delphi**, and **Nominal Group**.
- The **Delphi Model** involves the use of a questionnaire and the **Nominal Group Model** is a structured orderly procedure set out to obtain qualitative data from an expert target group.
- Survey data were collected and loaded into Qualtrics and SPSS using the descriptive statistics of **Frequency** and **Percentage**, the **Choice Elimination Theoretical Framework**, and **Principal Component Analysis (PCA)/Pearson Correlation**.
Crisis Experts

Sample Size: N=20, 75% response rate
Countries: USA, United Kingdom, Turkey, Iran, South Africa
Instrument: Process Trait Survey
Analysis: Frequency and Correlation (PCA)

Twenty individuals were identified as a purposive, selected sample through professional affiliations in the global intelligence, government, emergency response, and law enforcement communities.
Decision-making Models Deconstructed

**Decision-making Models for this study:**

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<td>Results are plotted</td>
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**NDM:** Undefined goals. Needs of the members outweigh rationality.

**PM:** Goals defined by self interest.

**RM:** Quantitative Approach. Known objectives.

**MAUA:** Useful for everyday decisions. More than one response/choice/option.

**NGT:** Structured, sitting around a table. Writing phase, all the options on paper.

**DT:** No face to face meetings. Decisions made by group without contact. Vote is anonymous.

**BM:** Weighted Responses. Member has the option to abstain.

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**High stress environment:** Focus on more than one issue at a time.

**Multiple people involved:** Power is decentralized.

**Organizational goals exists:** Incrementalist approach.

**Decision makers are experienced:** Structure of organization influences outcome.

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**Internet needed:** Public choice theory, use of economic tools to analyze.
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Frequencies & the Framework

Hypothesis: high-stakes decision-making process traits are not adequately captured by current decision-making models.

### Frequencies & Frameworks

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Note: 80%-100% Crisis Leaders Use These Traits

**A) Group Process Traits**

**B) >80% Shared Process traits**

**C) Choice Elimination Framework**
Frequencies & the Framework

Hypothesis: high-stakes decision-making process traits are not adequately captured by current decision-making models.

<p>| Group Decision - Making Models Traits With Associated Question |
|---|---|---|---|---|---|---|---|---|</p>
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Note. The (#) represents the survey identifier number

A) Group Process Traits from slide 5  
B) >80 % Shared Process traits  
C) Choice Elimination Framework
Correlations/Shared Processes

Table 6
PCA/Pearson Correlation

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*Note. Determinant = .003, gray areas represent r > 0.3*

PCA Correlation

Component Plot
## Correlations/Shared Processes

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PCA/Pearson Correlation

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## Correlations/Shared Processes

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# New Crisis Decision-Making Model

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<th>Group Dynamics:</th>
<th>Decision-Making Actions:</th>
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<td>Conversation &amp; debate</td>
<td>All options are assigned a number based on value</td>
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<td>Conditions continue to change</td>
<td>Decision makers are experienced</td>
<td>More than one response/choice/option</td>
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<td>Organizational goals exist</td>
<td>Focus on more than one issue at a time</td>
<td>Outcome decision based on a plot</td>
</tr>
<tr>
<td>Structure of organization influences outcome</td>
<td>Multiple people involved</td>
<td>Rank ordering or rating procedure results</td>
</tr>
<tr>
<td>Time constraints</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Assumes objective data
- Conversation & debate
- All options are assigned a number based on value
- More than one response/choice/option
- Outcome decision based on a plot
- Rank ordering or rating procedure results

- Decision makers are experienced
- Focus on more than one issue at a time
- Multiple people involved
- Rank ordering or rating procedure results
New Crisis Decision-Making Model

1. Situational Awareness
   - Organizational goals exist
   - Conditions continue to change
   - Time constraints

2. Group Dynamics
   - Decision makers are experienced
   - Multiple people involved
   - Focus on more than one issue at a time

3. Decision-making Actions
   - Rank ordering or rating procedure results
   - More than one response/choice/option
   - Outcome decision based on a plot
   - All options are assigned a number based on value
   - Conversation & debate

Assumes objective data
Structure of organization influences outcome
Conditions continue to change

Conversation & debate
Decision makers are experienced
Multiple people involved

New Crisis Decision-Making Model
New Crisis Decision-Making Model

1. Situational Awareness
   - Conditions continue to change
   - Organizational goals exist
   - Potential for Armed Conflict/Loss of Life
   - Structure of organization influences outcome
   - Evolving Outcomes
   - Assumption of objective data
   - Time constraints
   - Greater Unknowns

2. Group Dynamics
   - Focus on more than one issue at a time
   - Decision makers are experienced
   - Biases

3. Decision-making Actions
   - More than one response/choice/option
   - High Costs
   - Transparency
   - Rank ordering or rating procedure results

Stakeholders/Other Decision-makers

- Conversation & debate
- Media
- Outcome decision based on a plot
- All options are assigned a number based on value

Decision-Makers
- Vulnerability
- Stress
- Politics
- Extreme Insecurity

2. Group Dynamics
3. Decision-making Actions

New Crisis Decision-Making Model
<table>
<thead>
<tr>
<th><strong>Situational Awareness:</strong></th>
<th><strong>Group Dynamics:</strong></th>
<th><strong>Decision-Making Actions:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Assumes objective data</td>
<td>Conversation &amp; debate</td>
<td>All options are assigned a number based on value</td>
</tr>
<tr>
<td>Conditions continue to change</td>
<td>Decision makers are experienced</td>
<td>More than one response/choice/option</td>
</tr>
<tr>
<td>Organizational goals exist</td>
<td>Focus on more than one issue Outcome decision based on a plot at a time</td>
<td></td>
</tr>
<tr>
<td>Structure of organization influences outcome</td>
<td>Multiple people involved</td>
<td>Rank ordering or rating procedure results</td>
</tr>
<tr>
<td>Time constraints</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Naturalistic Decision-Making Model

<table>
<thead>
<tr>
<th>Conditions continue to change</th>
<th>100.00%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple people involved</td>
<td>100.00%</td>
</tr>
<tr>
<td>Decision makers are experienced</td>
<td>90.00%</td>
</tr>
<tr>
<td>Organizational goals exists</td>
<td>80.00%</td>
</tr>
<tr>
<td>Time constraints</td>
<td>80.00%</td>
</tr>
<tr>
<td>Needed information is missing</td>
<td>50.00%</td>
</tr>
<tr>
<td>High stress environment</td>
<td>40.00%</td>
</tr>
<tr>
<td>Undefined goals</td>
<td>20.00%</td>
</tr>
</tbody>
</table>

NDM Categories: 1. Recognize the environment, 2. Develop a course of action, 3. Strategize

# The *NEW* Crisis Decision-Making Model in Use

When President Kennedy threatened the Soviet Union during the Cuban missile crisis, “remove your missiles or else.” He shared only part of the information with the American public thus gaining support for his decision and allowing the public to increase his “power,” by making the coercive threat stronger, thus leading to only two outcomes, comply or go to war. President Kennedy opted not to share with the public that the outcome included a third option, removal of US missiles from Turkey.

**Situational Awareness:**
1. Assumes objective data
2. Conditions continue to change
3. Organizational goals exist
4. Structure of organization influences outcome
5. Time constraints

**Group Dynamics:**
1. Conversation & debate
2. Decision makers are experienced
3. Focus on more than one issue at a time
4. Multiple people involved

**Decision-Making Actions:**
1. All options are assigned a number based on value
2. More than one response/choice/option
3. Outcome decision based on a plot
4. Rank ordering or rating procedure results

Extreme insecurity and vulnerability; high cost, including loss of life, potential armed conflict, and victims; greater unknowns and evolving outcomes; stakeholders, enemies, media and transparency; politics, and bias.
The *NEW* Crisis Decision-Making Model in Use

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**Decision-Making Actions:**
1. More than one response/choice/option
2. All options are assigned a number based on value
3. Rank ordering or rating procedure results
4. Outcome decision based on a plot

If Khrushchev does not remove the missiles:
1. Invade Cuba
2. Invade Russia
3. Renegotiate
4. Send select troops to find the missiles
5. Nothing
6. Do A & B
The *NEW* Crisis Decision-Making Model in Use

When President Kennedy threatened the Soviet Union during the Cuban missile crisis, “remove your missiles or else.” He shared only part of the information with the American public thus gaining support for his decision and allowing the public to increase his “power,” by making the coercive threat stronger, thus leading to only two outcomes, comply or go to war. President Kennedy opted not to share with the public that the outcome included a third option, removal of US missiles from Turkey.

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3. Rank ordering or rating procedure results
4. Outcome decision based on a plot

If Khrushchev does not remove the missiles: (DM-Decision-maker)

<table>
<thead>
<tr>
<th>Action</th>
<th>DM</th>
<th>DM</th>
<th>DM</th>
<th>DM</th>
<th>DM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Invade Cuba</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>2. Invade Russia</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3. Renegotiate</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>4. Send select troops to find the missiles</td>
<td>2</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>5. Nothing</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>6. Do A &amp; B</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Numbers represent choices by Decision-makers (DMs).
The *NEW* Crisis Decision-Making Model in Use

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<table>
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<tr>
<th>Decision-Making Actions:</th>
<th>If Khrushchev does not remove the missiles:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. More than one response/choice/option</td>
<td>1. Invade Cuba</td>
</tr>
<tr>
<td>2. All options are assigned a number based on value</td>
<td>2. Invade Russia</td>
</tr>
<tr>
<td>3. Rank ordering or rating procedure results</td>
<td>3. Renegotiate</td>
</tr>
<tr>
<td>4. Outcome decision based on a plot</td>
<td>4. Send select troops to find the missiles</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>1&lt;sup&gt;st&lt;/sup&gt; Choice</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; Choice</th>
<th>3&lt;sup&gt;rd&lt;/sup&gt; Choice</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Invade Cuba</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
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<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
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<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
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<td>4. Send select troops to find the missiles</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>5. Nothing</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>6. Do A &amp; B</td>
<td>1</td>
<td>2</td>
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**Decision-Making Actions:**
1. More than one response/choice/option
2. All options are assigned a number based on value
3. Rank ordering or rating procedure results
4. Outcome decision based on a plot

![Graph showing the decision-making process](image-url)
Conclusion

➢ We can move from risk to resiliency in crisis management by using a decision-making model developed for crisis leaders for the novel or experienced crisis leader.
Contact

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Director/Program Manager
WSU/WPAFB
terry.oroszi@wright.edu