

Effective Problem and Crisis Management – Six Situation Scrutiny Rules

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Abstract

Much attention has been placed on tracing how effective decisions have been (and can be) made. In problem and crisis situations, this attention has included “backward mapping” (Elmore, 1982) and situational awareness (Endsley, 1995). Modes for operating in active problem and crisis situations have also been proposed – including Crew Resource Management (Weiner, Kanki, & Helmreich, 1993; McDonald, Johnston, & Fuller, 1995), Recognition-Primed Decision Making (eg. Klein, 1993), and Method of Tactical Reasoning (Pande, 1994; Samuray & Rogalski, 1991).

Some practitioners point to generalized concepts such as considering the worst scenario (Regester, 1989), “fact finding, analysis, damage control, and communication” (Mitroff & Pearson), and Crisisthink (Heath; 1995; Heath, 1998). Users then have to learn complex series of strategies or tactics that need adaptive application or lose outcome focus. There still exists a need for simple rule-based guidelines to thinking and managing in problem and crisis situations.

This paper outlines six specific “rules” to increase situation awareness and provide a basis for effective option formation and selection. These rules are to (1) work from the worst case, (1) deal with definite facts, (3) limit losses, (4) dig for disconfirmation, (5) manage the manageable, and (6) form **FAST**[®] options.

1. Introduction

Over the last thirty years attention has been placed on improving decision making. Initially, researchers explored issues such as hindsight biases (Fischhoff, 1975)

and use of functional and dysfunctional biases (Hogarth, 1981). Much research focussed on “expert” decision making and on how reconstructive logic can outline a decision process in the form of “backward mapping” (Elmore, 1982).

Practitioners and researchers have also considered mediating factors that enhance problem and crisis management. Regester (1989), for example, highlights the need to consider the worst case scenarios when managing in such situations. The issue then becomes one of how to probe the situation and develop the decision process so that the decision maker is neither frozen in a speculative worst case scenario that does not match the situation nor moved too readily towards a dangerous underestimation of the problem or crisis.

Where people do not consider the worst possible case as a situational reality, they may have continuing “blow outs” in problem and crisis management. Remaining fixed on worst case estimations can be distracting, misleading, and resource costly. A fire fighting service, for example, cannot continually respond to the potential worst case for a given fire situation without reducing coverage for the area they serve and without a continuous drain on resources – financial, equipment, and personnel. This suggests that decision makers need to assess situations – what can be termed *situation awareness* (Endsley, 1995) – and formulate effective tactical and strategic options.

2. Recent Approaches to Decision Making

Situation awareness seems part of many suggested approaches to improving team interaction, especially when that team is likely to encounter problem or crisis situations. One example is that of Crew Resource Management [CRM] – also known as Cockpit Resource Management (see Weiner, Kanki, & Helmreich, 1993). CRM emerged from efforts to improve the interactive behaviour of airline crews – see McDonald, Johnston, & Fuller (1995) for discussions on how this has been done in QANTAS, KLM, and Lufthansa. In CRM, a combination of communication, self-knowledge, and focus skills is used to enhance interactive behaviour between members. By doing so, crews are expected to be able to cope with a larger number of factors while retaining situational awareness. Advocates argue that CRM does help in actual situations (Haynes, 1992), while others are more cautious and point to issues about how participants really view CRM. Faith (1996), for example, reports some airline insiders as stating that one-in-five pilots find the CRM concept nonsensical, irrelevant, and a waste of their time.

One approach that reflects knowledge and experience is Recognition-Primed Decision making [RPD]. RPD appears more experience-based and intuitive when applied in rapid decision making situations (Klein, 1993). In RPD, there is a direct focus on situation assessment, evaluation of options, and on the elaboration of (and improvement in) these options (Klein, 1993; Flin, 1996).

Subjective determination models like RPD assume that consensual knowledge from “experts” produces a good satisficing outcome (one that meets many but not all possible decision choice requirements). There can be an arguable difference

(and consequent inquiries and litigation) between the best possible choice of action and one which satisfies. Those adopting an RPD approach can find that they produce inflexible “book decisions” that may be wrong for an actual problem or crisis situation. While RPD may be effectively used by experienced and flexible practitioners, the reality of training in RPD alone would be that average people with limited experience and flexibility are likely to apply half-understood principles and rules-of-thumb.

One approach that appears to link situation awareness and problem or decision analysis is that of the *Method de Raisonnement Tactique* [Method of Tactical Reasoning or MTR], originated by Pandeale [see Pandeale (1995) for a recent overview, and Samurcay & Rogalski (1991) for some earlier reviews of field applications]. MTR essentially outlines five stages of processing:

1. Search for information.
2. Analysis and anticipation of information based on current and future states.
3. Identification of tasks.
4. Management of time.
5. Elaboration of options for maneuver (Pandeale relates this to the “intentions” of a fire sector leader).

These stages can be re-defined in terms of situation awareness and problem resolution – find information, analyze information in terms of situation and what needs to be done, determine workable solutions.

Heath (1995, 1998) outlines a means of managing regardless of the nature or type of problem or crisis. He presents a model called *Crisisthink* that enables the user to focus on three key elements in effective problem resolution or crisis management by proposing three questions that need semi-automatic use:

1. *How do I get more information?*
2. *How do I get more time?*
3. *How do I conserve / save resources?*

Note the parallels with situation awareness (improving information, resource management) and with the MTR suggestion of time management.

Crisisthink points the way toward three important needs for effective decision making in problem and crisis resolution – gaining more and better information, gaining more time in which to make decisions and deploy resources effectively, and reducing the costs and losses involved. While the questions are simple and help users focus on important aspects of the problem or crisis, users still may need

to understand a number of supporting strategies and tactics that then need to be adapted to any given situation.

A process of thinking is needed that helps decision makers focus upon (and use) data available in the situation. For ease of recall and use, this process needs to be broad in application yet specific in “how” users think and attend the problem or crisis. The process needs to present interactive elements that apply across situations yet act as guideline rules for action. One such process is the six situation scrutiny “rules” found in a problem and crisis response “diamond”.

3. The Problem Solving and Crisis Response Diamond

The “super six situation scrutiny” rules are iterative, interactive and interdependent. The “rules” help shape the choices and actions. Responses to one “rule” often change responses and data for the other rules. The rules move thinking and decision making from assumption (“Worst Case”) to action or option selection (“**FAST**®”), yet move back and forth between these two rules and the other four “rules” – see Figure 1.

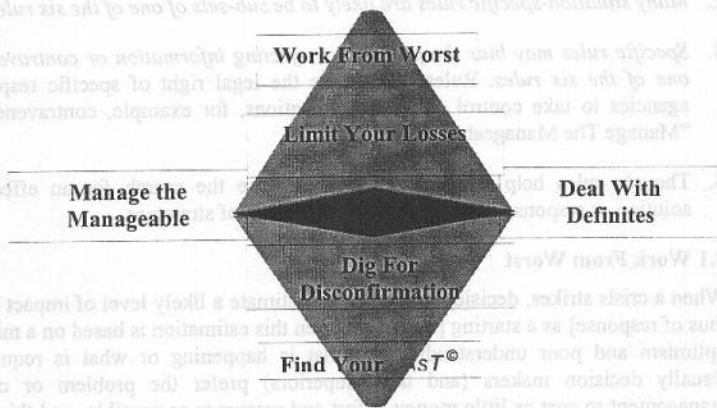


Figure 1. The Super Six Situation Scrutiny Elements

Similar clusters of six guideline rules exist for preparation (pre-problem and pre-crisis states) and for consolidation (post-problem and post-crisis recovery states), and these can influence thinking in the response cluster. To be robust and universal in application, however, the guideline rules for problem or crisis response management need to be of use regardless of whether preparative effort has been undertaken or consolidation actions ensue. Moreover, preparatory activities and post-solution or post-response management may be conducted by different sets of people and thus, in certain situations, be beyond the ambit of those involved in problem and crisis response management.

In Figure 1 the process is depicted as a three-dimensional diamond. This helps us see the starting point (“Work from Worst”) and end point (“Find Your *FAST*™”). The “Work From Worst” is shown as a narrow entry “hole” that shapes subsequent search for, and use of, situation and resource information. Similarly, the end point of “Find Your *FAST*™” is shown as a narrow exit hole where the problem solution or crisis management actions are selected.

4. The Six Situation Scrutiny “Rules”

These six rules meet the requirements for ease of recall and use, broad applicability, specific in shape, interactivity of rules, and stand-alone application outlined earlier. Where desired, users may add other specific rules for specific situations with the following three cautions:

1. *Processing time and failure to recall all rules increases with any increase in the number of rules.* Users are likely to spend more time trying to remember ten or thirty rules, for example, instead of examining the situation and their capacity to respond to that situation.
2. *Many situation-specific rules are likely to be sub-sets of one of the six rules.*
3. *Specific rules may bias the process by rejecting information or contravening one of the six rules.* Rules that ignore the legal right of specific response agencies to take control of specific situations, for example, contravene the “Manage The Manageable” rule.
4. The six rules help reduce costs and increase the search for an effective solution or response management strategy or set of strategies.

4.1 Work From Worst

When a crisis strikes, decision makers often estimate a likely level of impact [and thus of response] as a starting point. Too often this estimation is based on a mix of optimism and poor understanding of what is happening or what is required. Usually decision makers (and their superiors) prefer the problem or crisis management to cost as little money, effort and resources as possible, and this can influence an optimistic (low cost) option or response selection. Any underestimation of the size and demands of the problem or crisis, however, entails a consequent risk of ongoing readjustment to negative information and even worsening the situation through inadequate response efforts. Decision makers need to base their solutions or choices on “worst case” estimates, then seek to establish a “realistic” situation assessment as quickly as possible. It is far easier and mentally more positive to reduce effort, than it is to have to intermittently increase effort.

Working from the worst case (or cases) does not mean that decision makers remain in the initial “worst case” position. By seeking to disconfirm (see below) and clarify the worst case, adjustments can lead the worst-case estimates to more realistic and situation specific assessments (and thus increasingly deal with hard

information – “Deal With Definites”). The worst case estimation thus is superseded by increasingly accurate pictures of the situation.

4.2 Deal with Definites

One of the easiest ways to reduce a worst-case to a realistic situation assessment is to find and use definite (or certain or hard) information to revise the worst-case estimate. Decision makers need to be certain that definite information is, in fact, definite.

Action-choice selections also can provide definite data. As an example, a person caught in a flash flood may start from the worst-case conjecture “I am drowning” and quickly revise this to “I may drown” by the concurrent realization that she or he is still breathing. An impulse to move to higher ground or to grab hold of a tree nearby may further revise that situation assessment to “I’m okay unless the flood gets higher or the tree gets swept away by the water”. Definite data is “There is a flood” and “I am caught in this flood”. An action selection that contributes to this definite data is “I have moved to this high ground / tree”.

Note the interdependent and interactive element of this example. A further “rule” -- “Limit Your Losses” -- appears used in the get-to-safer-situation action selection. “Deal With Definites” reduces waste of time and effort that arise through considering “if only” wishes and regrets (“if only I did not come / live / work here” or “if only I had learned to swim”) and fears (“I could have drowned” or “no one will find me”), none of which help manage the situation.

Even in problem situations people can be distracted by wishes and fears. Wishing for a better designed piece of equipment or fears of personal penalties for failure to resolve a problem often distract from the task in hand. Optimal solutions are unlikely when those working to resolve the problem are distracted by seeing themselves in a non-optimal situation or by wishing for short-term solutions that may work. By staying focussed on the facts of the problem (the “definites”) and seeking to understand the impacts and requirements of any apparent solutions, solutions are more likely to work.

4.3 Manage The Manageable

The above example also indicates another rule: “Manage The Manageable”. In many situations, people hold wishes and fears about actions and decisions made by others who are beyond their influence. This can lead to despair and frustration; emotions that exhaust the thinker’s energy and distract attention from the situation. Most situations have aspects that can be directly managed by the decision maker, aspects in which decision makers may influence others, and aspects over which decision makers have no management or influence. To effectively use time, resources, and energy, decision makers need to focus more on what they can directly manage and indirectly manage (influence).

In the example of being caught in a flash-flood, decision makers need to focus on “How can I save myself” and on “Who can I influence to help me”. Being the

person trapped in the flood, the decision maker is unlikely to manage the search-and-rescue effort. Consequently, little is gained by worrying about what could-be rescuers are doing – beyond thinking about how to signal for help (influence) should a search-and-rescue effort appear. Likewise, the decision maker cannot manage the height of the flood nor the security of the tree or high ground. Observation may provide data on whether the water height is increasing (“Deal with Definites”) and “Dig For Disconfirmation”) or whether the tree remains safe. In some cases, assessment of indirect influence is appropriate – checking for bystanders who could help or could summon help or using a mobile telephone to ask for assistance are examples of this. In general, time and effort is best spent on seeking more information and choice clarification on “Am I safe here?” and/or “Can I make myself safer?”

Problem clarification and solution selection are influenced by how much decision makers focus on the actual problem(s) and what parts of the problem they can actually manage. For example, a need for finance to keep a business operating has elements that are manageable, influence-connected, and unmanageable. Decision makers can find finance that comes directly from their own efforts (savings, earnings, sales of assets) and can hope to influence others to provide finance (loans, investment in the business). They cannot manage the surrounding economic environment nor the business policies and decisions of most other businesses around them. Wishing things were different is not management.

4.4 Limit the Losses

People can clarify a problem or crisis situation by looking at what failed, what is damaged, and/or what is at risk. Any search to reduce the threat of risks and the actuality of losses can provide more effective solutions and action-choices. Loss limitation covers a broad range of issues, from “sunk cost” problems (“when do we stop throwing good money or resources after bad”) through to questions about whether to evacuate or shut-down-and-secure sites.

Resources can be divided into those already there and those brought in to resolve the situation. In this latter case, the issues tend to be how to effectively deploy and use those resources. Sometimes the resources brought into a situation may worsen that situation or face damage or loss as that situation worsens. Likewise, resources already at risk in a situation may need protection or removal (evacuation).

By concentrating on limiting losses and costs decision makers identify threats and risks more clearly (“Deal With Definites”) and check whether these are valid or invalid for that situation (“Dig For Disconfirmation”). Moreover, they identify more optimal and sub-optimal solutions and options in terms of costs and losses.

4.5 Dig for Disconfirmation

One way of validating “definite” or hard information is to check that the information is reliable and certain. This means looking hard at what one thinks is “definite” and checking that favoured priorities and solutions are not based on

stereotypes and biases held by the decision maker. Likewise, decision makers need to look for any rejected or overlooked information and assess whether such rejection or oversight is acceptable and has not been made because of wishful thinking or because the data does not fit a favoured option or belief.

Too often, however, people scan information for those bits of information that support their thinking. They consider information in terms of whether or not it *confirms* their impressions, perceptions, beliefs, thoughts, and choices. Information that appears to confirm already held beliefs or perceptions often is assigned greater referential importance. Information that appears not to confirm already held beliefs or perceptions is likely to be assigned less referential importance (or even rejected and overlooked). In simple terms, people tend to remember and use information that agrees with what they already believe to be true, and forget and discount information that does not agree with their beliefs. To reduce this confirmatory bias, people need to seek to disconfirm information and choices. One key use of disconfirmation is made when working from an initial worst-case speculation to a realistic situation assessment.

In groups, confirmatory bias process includes “groupthink” (Janis, 1983). Here, members of cohesive groups or of groups with a very powerful member tend to reduce effort to disagree or voice contrary opinion. The cohesiveness or individual dominance can deter people from raising contrary information or dissenting opinion.

Disconfirmation can be enhanced by actively seeking and noting information that does not fit or support preferred options or beliefs. Likewise, by making a wider search for choices of action and exploring the likely consequences of these can lead to disconfirmatory conclusions.

In seeking disconfirmation, decision makers can ask three questions:

- “What makes this a valid piece of information?” [a source and assumption check],
- “How do I know this is so?” [a belief and association check], and,
- “Is there any piece of information that contradicts this in any way?” [an oversight and certainty check].

These questions help focus on checking the values attached to remembered and gathered information as well as link to a search for disconfirmation.

4.6 Find Your *FAST*®

A *FAST*® helps users develop three possible solutions or options and provides a linking “target” statement to keep the user’s thinking focused on a bigger picture outcome. The three choices cover the most favored option (F), a next favored and often simpler option (A), and a safety option (S). This approach is a little similar

to the one, two or three “ideas for maneuver” outlined in MTR.

The mnemonic **FAST**[®] thus includes three options or solutions and a linked “targeted” objective or goal:

- A **First Option** or **Favored Option**,
- An **Alternative** to the First or Favored option (in case that fails) – which is often more basic or manual in nature,
- A **Safety** or **Default Option**, which is used to prevent further loss or harm to people or resources, and,
- A **Targeted Outcome** goal.

The “Target” option can be used to focus on the “big picture”. As an example, people on a sinking ship may narrow their attention to the point that they lose their lives because they did not look beyond the effort of “getting off the sinking ship” to “getting rescued” or “staying alive” or even “getting home”. In more general cases, the “T” of **FAST**[®] helps focus people on the need to return the situation to an operational normality.

5. Conclusion

This paper briefly introduces a set of situation scrutiny rules that can help people be more situationally aware and more able to manage when facing almost any problem or crisis. These rules are easy to remember and use, able to be applied across problem and crisis situations, and can be used as stand-alone aids to make better decisions.

Options and solutions can be shaped and tempered by four broad yet specific rules -- deal with definites, limit your losses, dig for disconfirmation, and manage the manageable. Decision makers can remain focused on resolving the problem or crisis while quickly thinking out flexible and situation pertinent solutions and action-choices virtually “on their feet”. By rehearsing the application of the six rules in particular, users are likely to develop the ability to rapidly manage problem and crisis situations in a more effective and efficient manner.

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