

Expertise

Influence of Uncertainty on Decision-Making

To what extent do collective sense-making and shared action affect decision-making in a crisis?



NIKO ORELL,
GCSP Geneva Center for Security Policy

Abstract

Es genügt nicht, einfach nur Prozesse und Vorschriften zu befolgen, um in Krisen Entscheidungen treffen zu können. Es geht vielmehr darum, anpassungsfähige, teamorientierte Prozesse zu leiten, die schnelle und fundierte Entscheidungen in unsicheren Situationen ermöglichen. Es ist notwendig, über die vorliegenden Fakten hinauszugehen und einen systemischen Ansatz zu verfolgen. Dieser «Blick vom Balkon» gibt Führungskräften

die Möglichkeit, einen Schritt zurückzutreten und das Gesamtbild zu sehen. Die Teams sollten zudem kooperativ, vielfältig, konzeptionell versiert sein, über klare Verantwortlichkeiten verfügen und auf ein gemeinsames Verständnis ausgerichtet sein. Nur durch eine kollektive Sinnfindung und ein gemeinsames Handeln können wir mit Resilienz, Klarheit und Zuversicht führen – unabhängig von den Unsicherheiten, mit denen wir konfrontiert sind.

Schlüsselbegriffe Krise; Leadership; Entscheidungsfindung; T-DODAR Zyklus; kollektives Situationsbewusstsein

Keywords crisis; leadership; decision-making; T-DODAR cycle; collective situational awareness



LIEUTENANT COLONEL, GS (RET.) NIKO ORELL, Finnish Air Force pilot, combat veteran, and military leader. With over 25 years of international experience spanning Finland, Europe, the Middle East, the Far East, and Africa, Niko Orell works now at the GCSP, Geneva as a mentor, educator, and trainer, he has collaborated with governments, international organizations, and private companies to develop strategies for navigating complex challenges. A Certified Executive Coach with expertise in behavioral and leadership assessment, he empowers clients to unlock their communication strengths, navigate interpersonal challenges, and lead with clarity and impact. His academic credentials include a Master's in Military Science and postgraduate General Staff Officer qualifications from the Finnish National Defence University.

E-Mail: n.orell@gcsp.ch

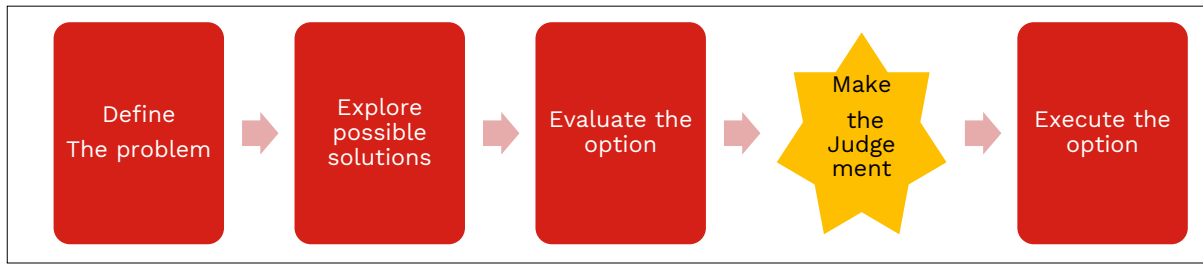


Figure 1: Simple Decision-Making Process. (Source: Shane Parrish, 2023)

Introduction

In 2013, I was stationed at the German HQ in Mazar-e-Sharif, Afghanistan, tasked with planning air support for a high-risk release ceremony in Kunduz Operations Base not far from Tadzshikistan border. Over 200 people – including officials, press, and military personnel – were expected to attend, despite credible intelligence warning of a Taliban attack.

The pressure was immense. Information was limited, stress levels were high, and my international team was running on empty. Two days before the event, my key officer admitted he couldn't go on the front line to Kunduz to lead the support operation. In that moment, I made a critical decision: I would take his place. It wasn't just a tactical call – it marked a turning point in my understanding of leadership, team dynamics, and collective sense-making.

The mission was ultimately a success, but the experience revealed something deeper: effective crisis decision-making is not just about rank, plans, or protocols. It's about how teams make sense of complex, fast-changing situations together – and how leaders create space for that process, even under extreme stress.

This article builds on that experience. Drawing from my field work, military background, and academic research, I introduce a model for crisis decision-making rooted in systems thinking, shared situational awareness, and collaborative judgment.

“Complex crises demand more than fast reactions. They require collective assessments and judgments that feed into decision-making.”

Collective Sense-Making and Shared Action

In decision-making, maximum speed is not the same as optimal speed. Every situation has its own time rhythm. In many organizations,

a suitable decision-making cycle might be a month. In a single crisis, the right interval for reviewing and adjusting decisions may be hours – or even minutes. In combat, decisions must often be made in seconds.

Complex crises demand more than fast reactions. They require collective assessments and judgments that feed into decision-making. These processes must balance the tension between hierarchy and structure on one side, and agile, participative emergence on the other. While the simplest decision-making process may appear linear, in reality, it is far more dynamic, interconnected, and layered.

T-DODAR Cycle

Most of us were never actually taught how to define a problem – especially in school, where we were given problems to solve, not the opportunity to frame them. Growing up in a Western culture, I internalized the belief that there is always a single, clear-cut answer. But today's complex world is non-linear, and there is rarely one “right” solution.

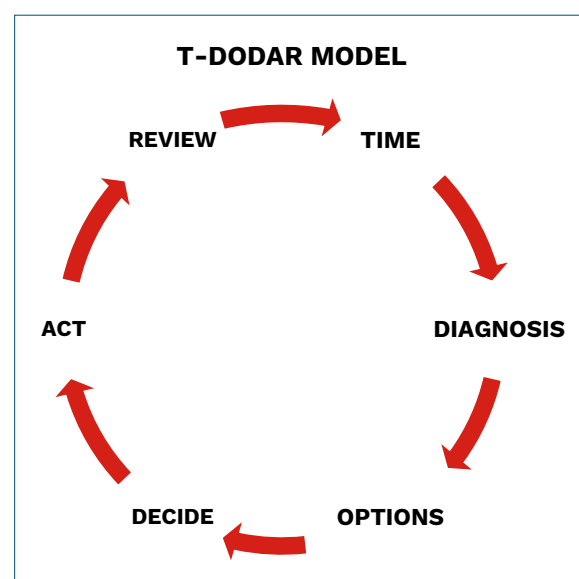


Figure 2: T-DODAR Cycle. (Model is widely used in aviation in general to assist pilots in making structured decisions during high-pressure situations)

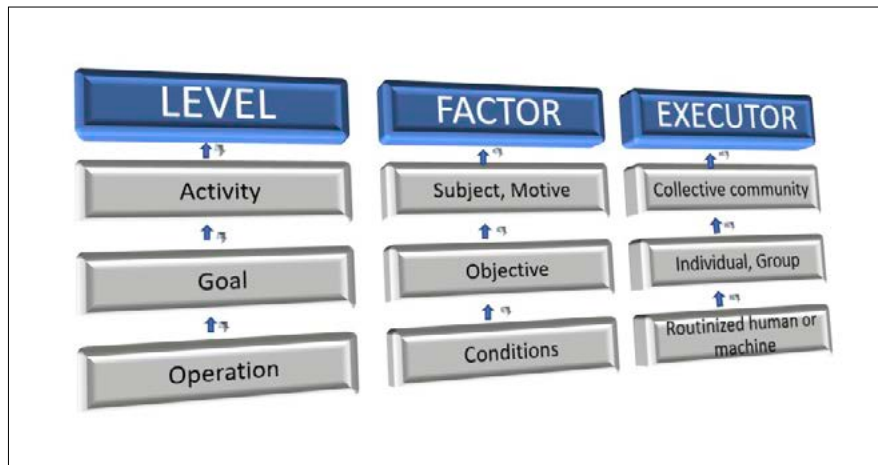


Figure 3: Three-Level Structure for Modeling Operational Mode. (Source: Leontjev, Aleksei Nikolai: Activity, consciousness, and personal, Englewood Cliffs, USA, 1978, <http://www.edu.helsinki.fi/activity/people/engestro/files/KTT04-osa1.pdf>, 23.01.2007.)

Over the past 25 years in high-stress environments, I've often relied on the T-DODAR model – a structured, practical decision-making tool widely used in aviation, the military, emergency response, and crisis management. It helps individuals and teams make clear, logical decisions under pressure.

The first two steps – Time and Diagnosis – are especially crucial. These define the goals to achieve after decisions are made. By integrating situational awareness early, teams can make more adaptive and goal-aligned decisions. The subsequent steps involve identifying possible courses of action, making a decision, assigning roles and responsibilities, and finally reviewing outcomes to adjust as necessary. Simple in structure, yet powerful in dynamic environments.

How to Combine Theory and Practice

My deployments to war zones fundamentally changed my thinking. The situations I faced were far more complex than anything I had previously studied – deeply multidimensional, with countless interdependencies. I often felt like I was living in a constant state of crisis. Sleep was a luxury; stress, a constant. I realized how incredibly difficult it is to make sound decisions in such pressure-cooker conditions.

When I returned from Afghanistan in winter 2014, I was invited to teach at the Finnish National Defence University. There, I continued my research into decision-making and situational awareness – now through the lens of lived experience.

I began to reflect: How can we make better decisions in extreme environments? This led me to develop a model that adapts traditional crisis management processes into a more collaborative framework – one designed to facilitate shared situational awareness as the basis for better decisions.

The model is not a rigid structure but a multi-faceted system. People, information systems, regulations, orders, and decision-making must all interact and inform one another. A core requirement is ongoing dialogue and collaboration within the team or community responsible for generating situational awareness.

I was told that leading during crises becomes even more challenging when time is short and information is scarce. This model supports faster, more accurate information flow, reduces overlap, and promotes a focus on expertise and human resources rather than rigid hierarchies.

Making Sense of the Situation

A core research question for me was: How can we produce common situational awareness?

I was fortunate to receive support from Professor Yrjö Engeström of the University of Helsinki, a global authority in this field. His work in activity theory helped me frame my model using principles from developmental work research – focusing on how people interact within interdependent systems of information, rules, and division of labor.

Engeström's model draws on cultural-historical activity theory, originally developed by Soviet psychologists like Vygotsky, Leontiev, and Luria. These scholars emphasized how meaningful action is shaped by social context, tools, and community.

A famous example from Leontiev describes a pre-historic hunting party: some members drive game animals forward, while others wait in ambush. The individual's task may appear counter to the group's motive – yet through shared understanding, their action supports the collective outcome. This illustrates

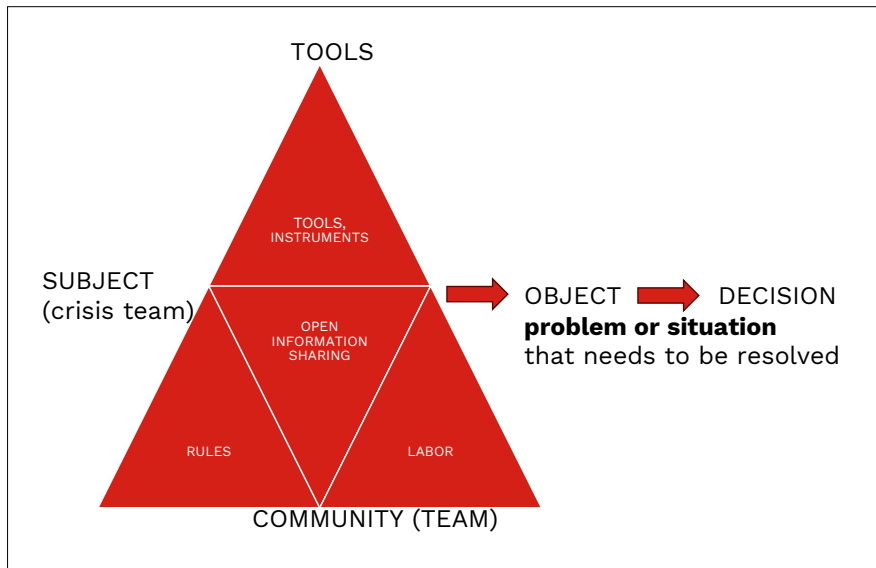


Figure 4: Model of Collective Situational Awareness. (Source: Niko Orell 2011, Engeström 1987)

how conscious action, tied to collective purpose, creates situational awareness.

In this view, activity is always collective, always motivated by an object (a shared goal), and requires a division of labor. Situational awareness emerges not from isolated individuals but from aligned actions and shared meaning.

How This Model Connects to Decision-Making

Drawing from both Afghanistan and theory, I developed a practical decision-making model to support leaders facing complex crises. At its core: shared situational awareness and collective judgment.

The model promotes team-based decision-making over hierarchical command, helping organizations become more adaptive, resilient, and informed under pressure.

This is a multi-faceted system –not a fixed structure – but a living framework that reflects the interdependence of people, information, systems, and regulations.

Field Test in Sweden

Between 2014 and 2016, I tested my model during the Viking CSDP exercise in Sweden by interviewing participants from operations center crisis coordination cells. Their feedback highlighted the main obstacles to shared situational awareness:

- Accuracy and reliability of information (truth vs. misinformation)

- Timeliness of accessing critical data
- Information management (vertical and horizontal flow)
- Common situational picture (understanding the evolving reality)
- Collaboration and information-sharing (right person, right time)

Many respondents felt that information needs were unclear, and teams lacked clear roles, tasks, and information-sharing protocols – all of which hindered effective decision-making.

My great friend and teacher professor Aki-Mauri Huhtinen has noted that Western thinking often assumes a clear beginning, end, and causality. But real-world crises are constantly becoming, not fixed. We cannot simply “solve” complexity by collecting more data. Instead, we must navigate it.

Why the Operations Centre Struggled

So why did a highly trained, experienced international operations centers so many times fail to generate adequate situational awareness?

Because complex crises require more than procedures. They demand shared judgment, systemic thinking, and the ability to function within a multifaceted, interdependent structure. Collective sense-making is vital – especially in fast-moving, ambiguous environments.

Tom Hanén’s research reinforces this: warfare is inherently dynamic and complex, with too many shifting variables to fully predict. Leadership in such contexts relies on recognizing complexity and adapting

through collaborative thinking and flexible structures. In large organizations, the structure is often too slow to manage high-speed decision-making.

Human Intuition and Diversity in Decision-Making

Decisions in crisis are inherently multidimensional. That's why it's crucial to approach them collectively, conceptually, and comprehensively. Teams benefit from constructively critical voices, people who think differently and challenge assumptions.

“Decisions in crisis are inherently multidimensional. That's why it's crucial to approach them collectively, conceptually, and comprehensively.”

We must also not overlook intuition. Many decisions in crisis are made through “recognition-primed decision-making,” where experience allows leaders to act rapidly, without full analysis. This isn't a flaw – it's a vital survival tool in time-constrained environments.

Conclusion: The Key Attributes of Collective Sense-Making and Defining the Problem for Decision-Making

Crisis decision-making is not about simply following procedure. It's about leading adaptive, team-based processes that allow for rapid, informed decisions amid uncertainty.

“Crisis decision-making is not about simply following procedure. It's about leading adaptive, team-based processes that allow for rapid, informed decisions amid uncertainty.”

While my model is rooted in theory, its effectiveness comes from real-world experience – like in Afghanistan, where one of the most defining decisions I made emerged through collective sense-making with my team. That experience confirmed a core truth: the best decisions in crises are built together, under pres-

sure, by teams who trust and understand each other. It also helps individuals make sense of the situation if they are aware different connectors of the Model of Collective Situational Awareness (figure 4).

To navigate uncertainty, we must move beyond facts and adopt a systems-thinking approach. Looking the model from the “balcony view” gives leaders the ability to step back and see patterns, rhythms and how issues are connected.

Thriving in today's crisis environments requires teams to be collaborative, diverse, conceptually aware, and structured around clear responsibilities and shared understanding. Only through collective sense-making and shared action can we lead with resilience, clarity, and confidence to make final judgment that the certain option is the best – no matter the uncertainty we face. ♦

References

- Engeström, Y. (1987). Learning by Expanding: An Activity-Theoretical Approach to Development Research. Oriental-Konsultit, Helsinki.
- Engeström, Y., & Ahonen, H. (2001). On the Materiality of Social Capital: An Activity-Theoretical Exploration. University of Wollongong Press, USA.
- Engeström, Y. (2004). Espansiivinen oppiminen ja yhteiskennittely työssä. Keuruu: Otavan kirjapaino.
- Hanén, T. (n.d.). Yllätysten edessä – kompleksisuusteoreettinen tulkinta yllättävien ja dynaamisten tilanteiden johtamisesta (Doctoral dissertation). Maanpuolustuskorkeakoulu Julkaisusarja 1: Tutkimuksia nro 11 / National Defence University Series 1: Research Publications No. 11.
- Huhtinen, A.-M. (2015). Informaation aseellistaminen ja taistelu identiteetistä. In V. Luoma-Aho & E. Karvonen (Eds.), Läpinäkyvä viestintä. ProComma Academic.
- Leontjev, A. N. (1978). Activity, Consciousness, and Personality. Englewood Cliffs, USA. Retrieved from <http://www.edu.helsinki.fi/activity/people/engestro/files/KTT04-osa1.pdf>
- McChrystal, S., Collins, T., Silverman, D., & Fussell, C. (2015). Team of Teams: New Rules of Engagement for a Complex World. Penguin Publishing Group, New York.
- Kuusisto, R., & Kuusisto, T. (Eds.). (2005). Yhteinen tilan- nymmärrys – strategis-operatiivisten päätösten

- tuki-palvelujen perusteet. MPKK, Taktiikan laitos, Helsinki.
- Koski, J. T. (1998). Infoähky ja muita kirjoituksia oppimisesta, organisaatiosta ja tietoyhteiskunnasta. Gummerus, Jyväskylä.
- Bennis, W. (1993). *An Invented Life: Reflections on Leadership and Change*. Reading: Addison-Wesley Publishing Company, USA.
- Bonabeu, E., Dorigo, M., & Theraulaz, G. (1999). *Swarm Intelligence: From Natural to Artificial Systems*. Oxford University Press, USA.
- Klein, G. (2011). *Streetlights and Shadows: Searching for the Keys to Adaptive Decision Making*. MIT Press.
- Parrish, S. (2024). *Clear Thinking: The Art and Science of Making Better Decisions*. (Paperback).