

Are you ready? Crisis leadership in a hyper-VUCA environment

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Part 1 of 2

ABSTRACT

The current hyper-volatile, -uncertain, -complex, and -ambiguous (VUCA) threat environment demands a more cohesive support structure for crisis leaders who may be faced with crises of increasing magnitude and frequency and, in some instances, multiple crisis events simultaneously. The project team investigates the perceptions of crisis leaders regarding establishing a crisis leader advisor position for crisis leaders to benefit from their experience while prosecuting crisis response activities. The team linked hyper-VUCA crises, crisis response frameworks, meta-leadership, crisis leader attributes, and advisor attributes. The overall goal of the project is to increase the ability of the crisis leaders to more effectively and efficiently navigate crisis events resulting in more efficient and effective response and recovery. Three research questions were developed to assess the following: thoughts of integrating a crisis leader advisor position; development of a crisis leader advisor certification program; and attributes of crisis leader advisors. A qualitative research methodology using a phenomenological approach was employed. Forty-one participants were purposefully selected and administered a short, on-line survey consisting of 11 questions. Data were analyzed using percentage analysis,

weighted sums, and inductive thematic analysis. The project team found an overwhelming support for the crisis leader advisor position and the crisis leader advisor certification program. Additionally, experience and trustworthiness ranked among the top sought after attributes of a crisis leader advisor. The team recommendations included (1) implement a crisis leaders advisor guidelframework; (2) create a formal crisis leader advisor position in national incident management system; (3) implement a crisis leader advisor certification framework; (4) benchmark established advisor programs; and (5) implement a framework to match leaders and advisors.

Key words: meta-leadership, VUCA, crisis, crisis leader, advisor, crisis leader advisor, disaster management, incident command system, NIMS

INTRODUCTION

The current threat environment has evolved in scope and magnitude to include impacts from global climate change on weather, coastal population centers, and opening of arctic sea lanes; increased human migration; potential and realized public health events; complex coordinated attacks and active shooter events; financial market failures and potential future financial

instability; insider threats; cyber threats; ever-expanding use of the Internet as a terror tool; civil unrest; and evolving terror delivery methods. A meta-analysis of crises literature from the past 20 years identified the following six themes: (1) crises have grown in numbers; (2) the time and the geographical distance between crises have decreased; (3) crises have affected every industry, institution, and segment of society; (4) the causes of crises have evolved progressively from accidents to intentional events; (5) crises now affect multiple industries and jurisdictions; and (6) traditional management structures struggle to adapt to the rapidly changing crises management needs.¹ The current threat environment demands a more cohesive support structure for to-be crisis leaders who will be required to manage more volatile, uncertain, complex, and ambiguous (VUCA) crises² and, increasingly, multiple crises simultaneously.

The purpose of this project is to investigate the perceptions of already tested crisis leaders regarding integration of a crisis leader advisor position for crisis leaders to benefit from their experience while prosecuting crisis response activities. While having fully trained and experienced crisis leaders available to lead a no notice response is always preferable, given the increasing frequency and intensity of natural and manmade crises which have occurred in the past 15 years, this is not always the case. The project team believes that the results can be applied to improve crisis leadership proficiency by creating a framework for a crisis leader advisor program that will increase the confidence, competency, number and availability of crisis leaders, while enhancing crisis resilience. This whole of community framework³ would afford crisis leaders access to experienced advisors who serve as nonauthoritative resources to the crisis leader on all, or selected, aspects of a crisis event. The overall goal of the project is to increase the ability of the crisis leaders to more effectively and efficiently navigate crisis events resulting in more efficient and effective response and recovery. The project team will seek to establish the alignment of the evolving threat environment, the incident command system (ICS), meta-leadership, and crisis leader attributes that represent those attributes most ideally found in a crisis leader

advisor. This crucial alignment will help pair a crisis leader with a crisis leader advisor who is equipped with the knowledge, experience, and abilities to effectively partner with and support the crisis leader during an event laden with intense pressure, overwhelming tasks, and critical decision-making opportunities.

LITERATURE REVIEW

Hyper-VUCA trending

The term VUCA was first coined by the US military to describe a VUCA environment.⁴ VUCA applied to crisis management implies that the crisis leader must be prepared to address increasing challenges from legacy and emerging threats; be able to rapidly respond and adapt to highly VUCA incidents—effectively and efficiently—to environmental demands; and be able to address the increasing ambiguity incurred by disastrous events.⁵⁻⁸ Given the evolving and increasing threat environment in today's crisis management environment, the project team coined the term “hyper VUCA” to describe the hyper state of threats present and growing in the world, (Appendix 1). Crisis management must not only mitigate the crisis, but also address its interdependencies and stakeholders, see Figure 1.

Extant research shows that the frequency and magnitude of natural disasters are increasing both nationally and globally, spanning larger geographical areas.⁹ The scale of these disasters has expanded due to increased rates of urbanization, deforestation, and environmental degradation and due to intensifying climate variables such as higher temperatures, extreme precipitation, and more violent wind and water storms.¹⁰ Hyper-VUCA trending indicates that the intensity and magnitude of crisis events have increased over the past two decades. This includes increases in numbers of natural disaster declarations and recovery costs; increases in human migration; increased acts of violence (eg, active shooter) and terror to include the recent uptick in complex coordinated attacks; increasing threats across the chemical, biological, radiological, and nuclear explosives (CBRNE) environment; escalation in cyber-attacks and warfare; growing and emerging public health threats; and continued concerns related to stability of the national and global economies.

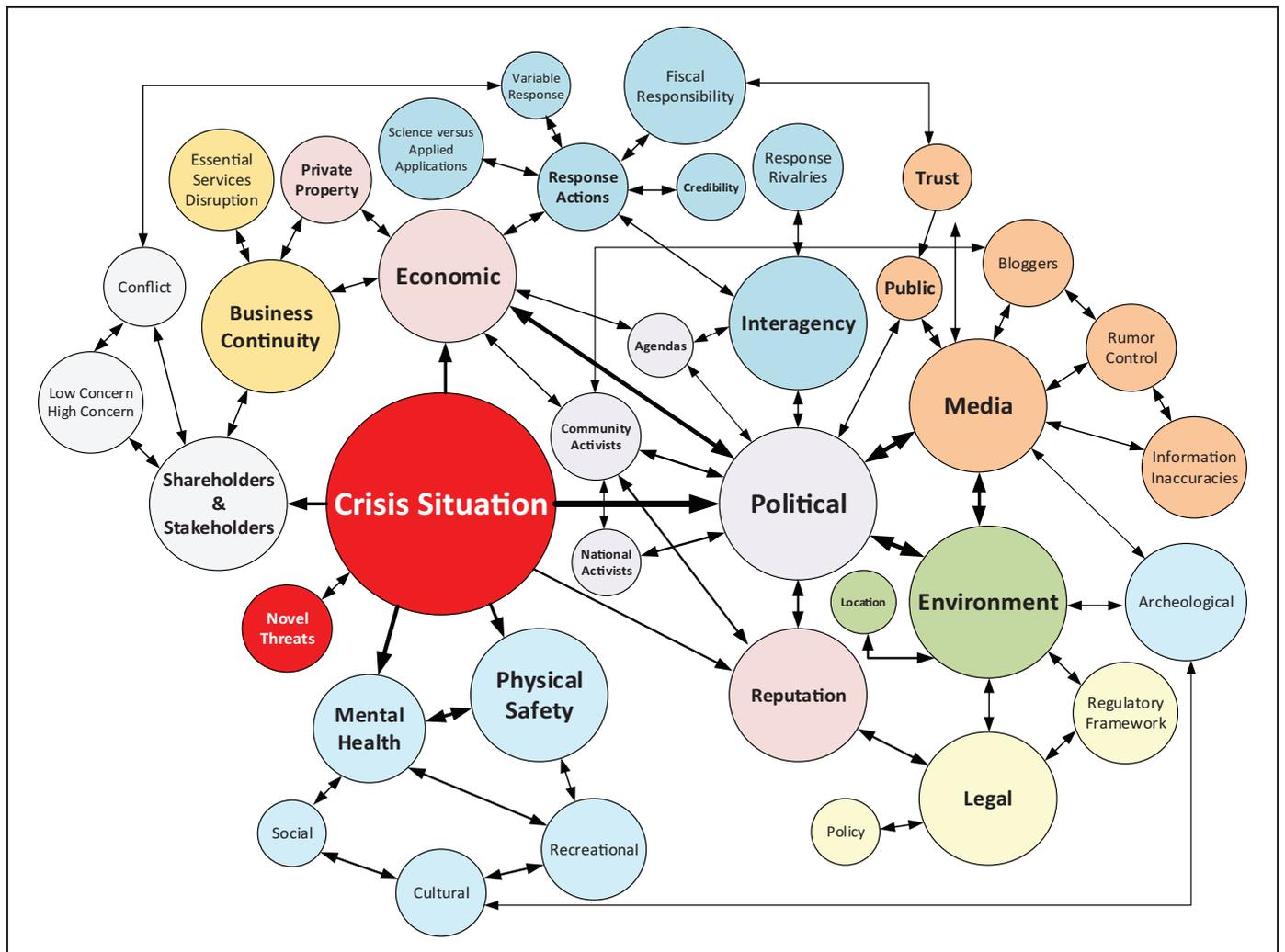


Figure 1. Crisis situation map and interdependencies.

General emergency declarations. Presidential disaster declarations increased by 300 from 1994 to 2004 (1,112) compared to 2005 to 2015 (1,412).¹¹ The United States has sustained 188 weather and climate disasters since 1980, which resulted in overall damages/costs reaching or exceeding \$1 billion and totaling in excess of \$1 trillion.¹² There was an increase in weather disasters and weather-related deaths during the 5-year span 2006-2010 and the 5-year span 2011-2015; weather disasters increased from 35 to 54; weather-related deaths increased from 507 to 1,437,¹¹ see Figure 2.

Severe weather and seismic events. Flood response and recovery costs totaled \$7.7 billion between 1994 and 2004; these costs quadrupled to \$32.8 billion

between 2005 and 2015.^{11,13} Hurricane response and recovery costs nearly doubled to \$186.2 billion from 2005 to 2015 compared to \$97.8 billion from 1994 and 2004.^{11,14} There has been little trend in the frequency of the stronger tornadoes over the past 55 years. Within United States, the Cascadia Fault runs 1088 km along the Pacific Northwest Coastline and encompasses three major metropolitan areas (Portland, Seattle, and Vancouver); the New Madrid Seismic Zone, which is an expansive zone, and the most active earthquake zone east of the Rocky Mountains; the Ramapo Seismic Zone runs through highly urbanized Pennsylvania, New Jersey, and New York; the Hayward Fault in densely populated parts of California; and the Denali Fault System which in 2002 resulted in the

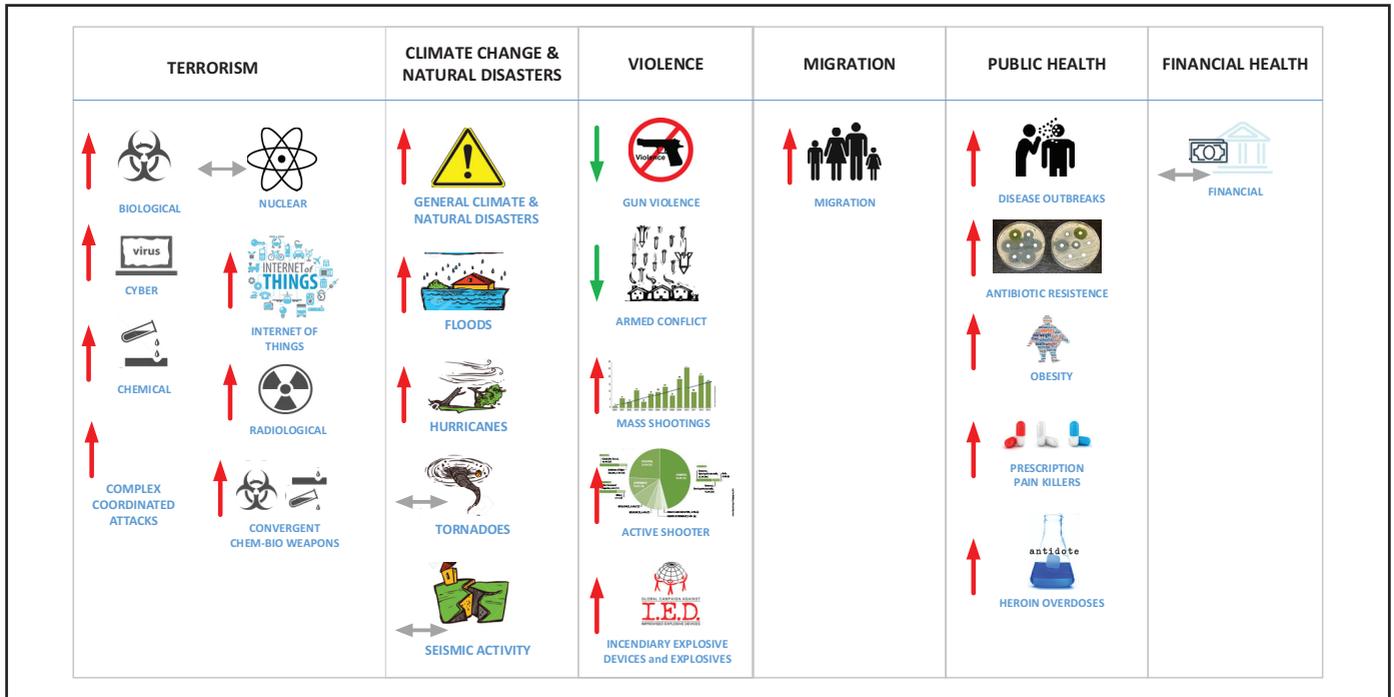


Figure 2. Hyper-VUCA trending.

largest recorded earthquake on North American soil.¹⁵ Although unlikely, an eruption of the Yellowstone Supervolcano would cover North America in ash.¹⁶ The number of large earthquakes (magnitude 6.0 and greater) has stayed relatively constant.¹⁷

Violent crime. Overall, homicide and violent crime rates have been trending downward for more than two decades, and both rates are at historic lows; the nation's violent crime was the lowest it has been since 1970, while the homicide rate is the lowest since 1960.¹⁸ However, the number of Americans killed by gun violence in the United States between 2001 and 2013 is 440,095.¹⁹

There were 207 complex coordinated attacks or terrorism in the United States from 2001 to 2011, where the weapons of choice were incendiary devices and explosives. Between 1970 and 2011, the most common targets of terrorists in the United States were businesses (62 attacks), private citizens and property (59 attacks), and government (43 attacks).²⁰ Between 2006 and 2013, there were 160 active shooter events, affecting 1,043 victims, where 557 people were injured and 486 were killed.²¹ In 2015, there were 294

mass shootings (four or more shot) affecting 1,474 victims, with 1,094 people injured and 380 killed.²² Armed conflicts have decreased globally, although some persist, with entrenched internal violence lasting for years, such as in Darfur (in Sudan) and in the eastern Democratic Republic of Congo.²

Complex coordinated attacks/terrorism and CBRNE. In recent years, the number of coordinated attacks has increased, especially among the terrorist groups of greatest concern to the United States. Moreover, since 1938, half of the 14 terrorist incidents with 100 or more fatalities were coordinated ones. Along with the recent increase in coordinated attacks has come a corresponding rise in fatalities and injuries; terrorists feel the need to create ever greater impact on their targeted societies, and coordinated assaults bring both added lethality and “newsworthiness.”²³ The number of Americans killed by domestic acts of terrorism including complex coordinated attacks in the United States between 2001 and 2013 totaled 3,030.²⁴

Chemical weapons are easy to develop with an understanding of chemistry and access to designs and “how-to” information, widely available on the

Internet.²⁵ The ability to develop, construct, and deliver a successful biological attack on a large scale is limited. However, bioterrorism can be used to cause significant economic losses by infecting livestock or crops (Agro terrorism) or contaminating buildings.²⁶ Over the past 25 years, technical expertise, the biotechnology revolution, and simplification and streamlining of production processes has decreased resource (labor and fiscal) requirements for illicit biological weapons activities.²⁷

The convergence of chemistry and biology in the field of neuroscience does not appear to pose a risk in the short term, but longer term, synthetic biology could enable the biological production of known and novel harmful chemicals of concern, perhaps even including chemicals that could target specific ethnic groups by interacting with particular foods or genetic markers.²⁸

Thousands of sites in more than 100 countries house radiological sources. Many of these sources are poorly secured, leaving them vulnerable to theft by terrorist organizations seeking the materials needed for radiologic dirty bombs.²⁹ The number of countries storing plutonium and highly enriched uranium has decreased, however, increasingly well-organized and well-funded terrorist organizations, with easy access to the know-how needed to build a bomb, have declared their intent to seek the materials necessary for weapons of mass destruction (WMD).³⁰

Cyber and social media. Cyber security incidents are on the rise. Since 2006, cyber security incident increased eight-fold from 5,503 cyber-attacks in 2006 to 48,562 in 2012.³¹ In January of 2015, Facebook achieved 1.39 billion active users, making it larger than the world's most populous country.³² The Internet of Things (IoT) is the network of physical objects—devices, vehicles, buildings, and other items embedded with electronics, software, sensors, and network connectivity—that enables these objects to collect and exchange data. It is predicted that, due to extensive vulnerability, the IoT may be used in future as a weapon of mass destruction.³³ Cyber experts predict that the next WMD could be strategically situated thumb drive or Blackberry containing malicious code, placed by a homegrown terror agent, and brought in by an unwitting employee.³⁴

Immigration and public health. As of 2010, immigration into the United States was 14,000,000 per year. In 2013, approximately 41.3 million immigrants lived in the United States, an all-time high for a nation historically built on immigration. The United States remains a popular destination attracting about 20 percent of the world's international migrants, even as it represents less than 5 percent of the global population.³⁵ The number of outbreaks, and the number of kinds of disease, have both increased significantly since 1980 with a decline in per capita outbreak cases; 56 percent of all outbreaks were “zoonoses,” meaning that they were transmissible to humans by animals, insects, and other vectors. These include Ebola, HIV, the bubonic plague, and Lyme disease.³⁶ There are over 100 immune-mediated diseases affecting 50 million Americans. The following five (old time) diseases are making a comeback: plague, mumps, measles, tuberculosis, and scarlet fever.³⁷ In 2005, there were 19 deaths from epidemics, from 2005 since then until 2015, there have been over 47,796 deaths (2,035 since 2015) attributed to yellow fever; dengue fever; cholera; malaria; chikungunya; Ebola; poliomyelitis; hand, foot and mouth disease; Middle East respiratory syndrome; influenza, Influenza A virus subtype H1N1, Hepatitis B, and Zika.³⁸

In 1990, obese adults made up less than 15 percent of the population in most US states. By 2010, 36 states had obesity rates of 25 percent or higher, and 12 of those had obesity rates of 30 percent or higher. The estimated annual medical cost of obesity in the United States was \$147 billion in 2008 US dollars.³⁹ Resistance among common pathogens causing community- and hospital-associated infections is increasing worldwide; the Centers for Disease Control estimates that more than 2 million infections and 23,000 deaths are due to antibiotic resistance each year in the United States.⁴⁰ The number of unintentional overdose deaths from prescription pain relievers has soared in the United States, more than quadrupling since 1999.⁴¹ Pill addicts who shop around for doctors to score prescriptions cost insurers \$10,000 to \$15,000 apiece. The rate of heroin overdose showed an average increase of 6 percent from 2000 to 2010, followed by a larger average increase of 37 percent from 2010 to 2013. The toll in lost productivity: \$42 billion. The criminal justice bill: \$8.2 billion.⁴²

Financial health. Most states are nearly back to normal since the great recession, although there are troubling signs that many states are still ignoring the risks on their books, mainly in underfunded pensions and healthcare benefits.⁴³ The US public pension system has developed a \$3.4 trillion funding hole, 3 times larger than official figures, that will pile pressure on cities and states to cut spending or raise taxes to avoid Detroit-style bankruptcies.⁴⁴ Patterns in economic data are showing signs of weakness, and the troubles persisting in Europe or the bubble bursting in China may be the trigger that sends the economy “over the edge.”⁴⁵

Leadership/crisis management and hyper-VUCA environments. Leaders in VUCA environments must be skilled in the following leadership tasks: (1) anticipating and reacting to the nature and speed of change; (2) acting decisively in the absence of clear direction and certainty; (3) navigating through complexity, chaos, and confusion; and (4) maintaining effectiveness despite constant surprises and a lack of predictability.^{5,6,46} Retired US Army Colonel Eric Kail outlined adaptive strategies and tactics for operating in a VUCA environment. He contended the following: clear communication is vital in volatile situations^{47,48}; getting a fresh perspective and maintaining flexibility is critical in uncertain environments^{47,49}; collaborating and seeking incremental solutions are important in complex situations^{47,50}; and listening well and thinking divergently are a must in ambiguous situations.^{47,51} VUCA researchers agree with Kail's strategies, but additionally postulated that countering VUCA events requires: (V) vision that seeks to create a future; (U) understanding—the ability to stop, look, and listen; (C) clarity—making sense of chaos; and (A) agility—where wirearchy is rewarded over hierarchy.^{5,47}

Current research and hyper-VUCA trending show that volatility, uncertainty, complexity, and ambiguity inherent today and in future environments is the new normal, which will profoundly change how organizations respond to crises, and how crisis leaders lead. Leading a large, complex crisis requires advanced crisis management skills including strategic, complex critical-thinking skills, foresight, adaptability, and

vision. A crisis leader advisor will improve the ability of crisis leaders to effectively direct crisis response operations. The project team intends to investigate the possibility of introducing a crisis leader advisor position into the ICS to assist crisis leaders manage hyper-VUCA events. The team believes that this integration could be an invaluable resource for incident commanders (ICs) and managers facing hyper-VUCA events. Specifically, the crisis leader advisor would improve the adaptive leadership abilities necessary to counter present and future chaos present in hyper-VUCA events by advising, providing a fresh perspective and vision, improving understanding, and resulting in a more effective and efficient response.

Crisis = incident + event

Whenever a disaster strikes, a major hurricane, oil spill, active shooter, etc, there are two aspects that must be managed successfully to mitigate the crisis: the “incident” and the “event.” The incident is the circumstance that requires a response to resolve or mitigate the effects of the circumstance. For instance, in the case of a hurricane, people must be rescued from flooded areas, power must be restored, fires extinguished, hazmat cleaned up, etc, to protect life, property, and the environment. The event, which arises from the incident, can best be described as the consequence of the high concern generated by the incident. As stated by Vincent Covello, there are four categories of risks: low concern/low trust; high concern/high trust; low concern/high trust; and, high concern/ low trust. Any of these combinations is possible, but depending on how the public perceives the response is going, a low concern situation can turn into a high-concern situation very quickly.⁵²

Although there is a causal relationship between incident and event, it is not linear. One of the most important aspects when (qualitatively) measuring the magnitude of the event is the level of trust the public, politicians, media, and other stakeholders have for the incident responders. There are several factors that account for this outcome, but the event magnitude ultimately results from the level of stakeholder trust; that is, a low concern event can turn into high concern event if trust is low. Factors that may impact

levels of concern and event magnitude include but are not limited to location, conflict, and politics.

- Location: if an oil spill happens 160 km offshore in heavy seas, chances are no oil will come ashore or cause significant damage to wildlife. If, however, the spill happens in a sensitive marsh during nesting season, stakeholders will give the responders more scrutiny. If they do not believe the responders are doing all they can, they will lose trust, with a concomitant increase in level of concern. Conflict: if there is a perception that different response agencies have different priorities, the media may capitalize on this aspect of the response versus the effective way the oil is being collected. In turn, this can erode stakeholder trust in the ability of the responders to mitigate the effects of the spill. Politics: depending on when in an election cycle the spill occurs, politicians may support or criticize the response, again eroding the public's trust in the ability of the responders to get the job done.
- To gain and maintain trust, response leaders must be in constant communication with all key stakeholders: the public, media, political leaders, and their own agency supervisors to let them know what is and is not being done. They must also continuously evaluate if they need to add additional stakeholders as more information concerning the effects of the crisis are discovered. In a crisis, initial information will probably be inaccurate, and it is imperative to quickly correct any inaccuracies in information, and to explain why information has changed. Just as important as communication, response leaders must follow through on any pledges of action made. The more response leaders can engage and provide accurate information and complete the actions they have

said they will, the higher the level of trust, which will ultimately reduce the level of concern and size of the event. Conversely, if a response leader loses the trust of one or more of the stakeholders or fails to follow through on promised actions, the level of concern increases and the event will grow. As a result, the response leader will find him or herself not only expending more resources to respond to the event, but may deploy more resources to respond to the incident to make the response appear more robust to outside observers in an attempt to increase trust. Using the oil spill example, this could mean deploying more booms, with questionable efficacy, or having more responders walking the beaches than is required. In other words, when trust is low, or even worse, lost, responders will not be taken at their word and instead may have to take additional clear, unequivocal, and visible actions in an effort to enable stakeholders or other third-party observers to see for themselves that the responders are doing what they said they would and therefore begin to increase the trust. While these actions may result in increased trust, those extra actions might be more than would otherwise have been required to efficiently respond to the situation. To maintain the level of concern at its lowest, response organizations must ensure their organization has enough liaison officers to meet the information needs of politicians, key stakeholder groups, supporting and assisting agencies, local, state, territorial, and, tribal officials. Additionally, the response organizations must develop a robust information network to provide timely and accurate information to all media—network and cable TV, radio, social media, and bloggers. While this will not eliminate “events,” it may help to reduce event magnitude.

ICS

Crisis leaders may employ the ICS to effectively and efficiently manage crises by integrating a combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure.^{53,54} It provides a framework for crisis management and guides the process for planning, building, and adapting that structure.^{53,54} The system can be utilized to organize operations for a broad spectrum of natural and manmade crises from small and local to hyper-VUCA events.^{53,54} The ICS is applicable to all levels of government, NGOs, and the private sector; additionally, it is applicable across disciplines.^{53,54}

Evolution of the ICS. The evolution and adoption of the ICS followed three stages: functional, voluntary adoption, and a mandatory requirement.⁵⁵ The ICS was developed in the 1970s to address coordination and cooperative problems experienced while fighting wild fires in California.⁵⁴ Practitioners viewed the ICS as successful because it improved cohesiveness of the response organization and it gained traction outside of California. Emergency managers began to voluntarily use the ICS for other crises such as hazardous materials incidents, earthquakes, and floods.⁵⁴⁻⁵⁷ During the 1980s and 1990s, some response agencies voluntarily adopted the ICS, while others remained skeptical. The 1995 Oklahoma City Bombing was a turning point for the ICS. “An after-action report argued that the Oklahoma City Bombing should be viewed as ultimate proof that the Incident Command System works.”^{55(p 895)} The report spurred many organizations to voluntarily adopt the ICS. The 9/11 crisis response led to the third phase of the ICS evolution: mandatory adoption for federal, state, and local crisis responders receiving federal funding. In 2004, the national incident management system (NIMS) and the national response plan, with the ICS as the central feature of the NIMS, was implemented. NIMS was updated in 2006 and 2008; ICS remained the central feature.^{53,58}

Studies regarding ICS effectiveness have produced mixed results. Researchers have observed some applications of the ICS that had the following weaknesses: the system is not adaptive enough to handle emergent behavior^{56,59}; a single IC cannot manage an

incident involving multiple jurisdictions and multiple agencies⁶⁰⁻⁶³; centralized authority is inappropriate in crises management because efforts are usually community oriented^{62,63}; and integration of volunteers into the rigid rank and authority structure has been problematic.^{56,60,62} In contrast, researchers have noted the following ICS strengths: flexibility and scalability^{45-53,64}; ICS establishes a single command point^{53,65-68}; uses a common language^{53,66-68}; combines efforts and eliminates duplicative efforts^{53,65}; allows for collective approval of operations, logistics, planning, and finance activities^{53,66,68,69}; encourages a cooperative response environment^{53,65-68}; fosters shared facilities, which reduces response costs and maximizes efficiency^{53,54,68}; and minimizes communication breakdowns.^{53,54,65,68,70}

ICS command staff. The ICS is organized with a command staff that reports directly to the IC. The staff typically consists of a public information officer, a safety officer, and a liaison officer (see Figure 1; NIMS). However, “additional positions may be required depending on the nature, scope, complexity, and location(s) of the incident(s), or according to specific requirements established by the IC/unified command (UC).”^{53(p52)} For example, legal counsel and medical advisors have been solicited by ICs as part of their command staff. NIMS specifically states, “a special needs advisor might be designated to provide expertise regarding communication, transportation, supervision, and essential services for diverse populations in the affected area.”^{53(p53)} (See Figure 3.)

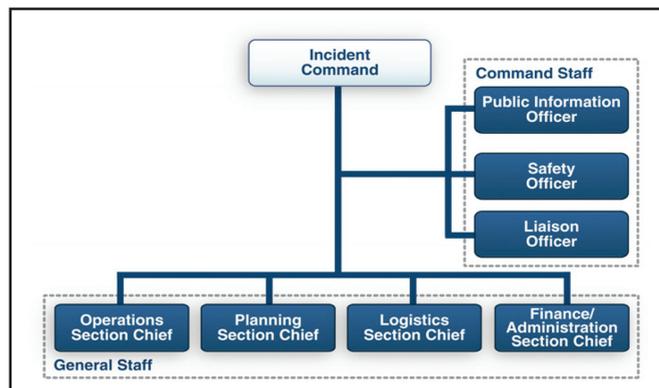


Figure 3. ICS: command staff and general staff.

The project team aims to investigate the possibility of adding a crisis leader advisor position to the ICS command staff to advise during hyper-VUCA crises. The team sees this as a possible “fourth” ICS evolution, as the goal of the crisis leader advisor position is to maximize strengths of the ICS while minimizing its shortcomings. The crisis leader advisor could positively affect the criticisms of the ICS being non-adaptable, rigid, and inadequate for managing VUCA crises.

Meta-leadership

Meta-leadership is a framework within which leaders “provide guidance, direction, and momentum across organizational lines that develop into a shared course of action and a commonality of purpose among people and agencies that are doing what may appear to be very different work.”^{71(p1)} Additionally, meta-leadership mobilizes people and organizations to collaborate in times of crisis and was derived by observing and analyzing leaders operating within hyper-VUCA events such as the 9/11 attacks, Hurricane Katrina,^{71,72} Deepwater Horizon,⁷² and the Boston marathon bombings.⁷³ Meta-leadership has three dimensions: the person, the situation, and connectivity.⁷⁴ The leader must be self-aware: he or she must understand his/her strengths and weaknesses, experience, and emotional intelligence.⁷¹⁻⁷⁶ The “situation” refers to the scope of the current event including

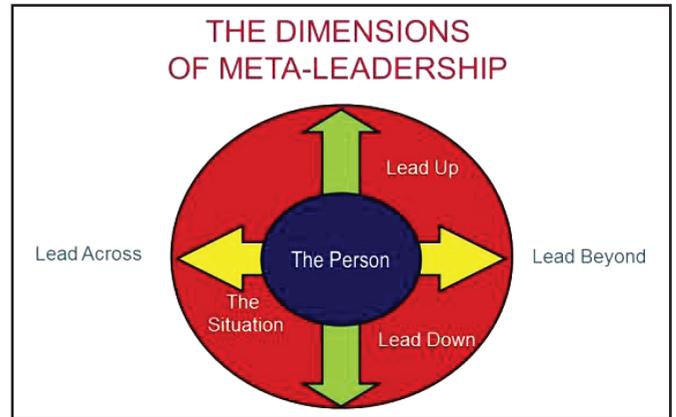


Figure 4. The dimensions of meta-leadership.

the known and unknown, and actions required based on the situation.⁷¹⁻⁷⁶ “Meta-leaders shape connections among the array of relevant people and interests across the extended enterprise, and do so through leading down, up, and across”^{72(p39),75} (see Figure 4).

Meta-leaders apply the POP-DOC loop to guide direction in VUCA situations. The POP-DOC loop, represented by the Mobius Loop, “a continuous ribbon that, with its twist, is a 2-dimensional object,”^{76(p42)} with two loops (POP and DOC) and six sequential steps. The POP side of the loop represents the thinking steps and the DOC side represents the action steps⁷⁶ (see Figure 5).

The P-O-P steps on the thinking loop are (1) perceive, (2) orient, and (3) predict. The first step, perceive, requires the leader to gain an insightful

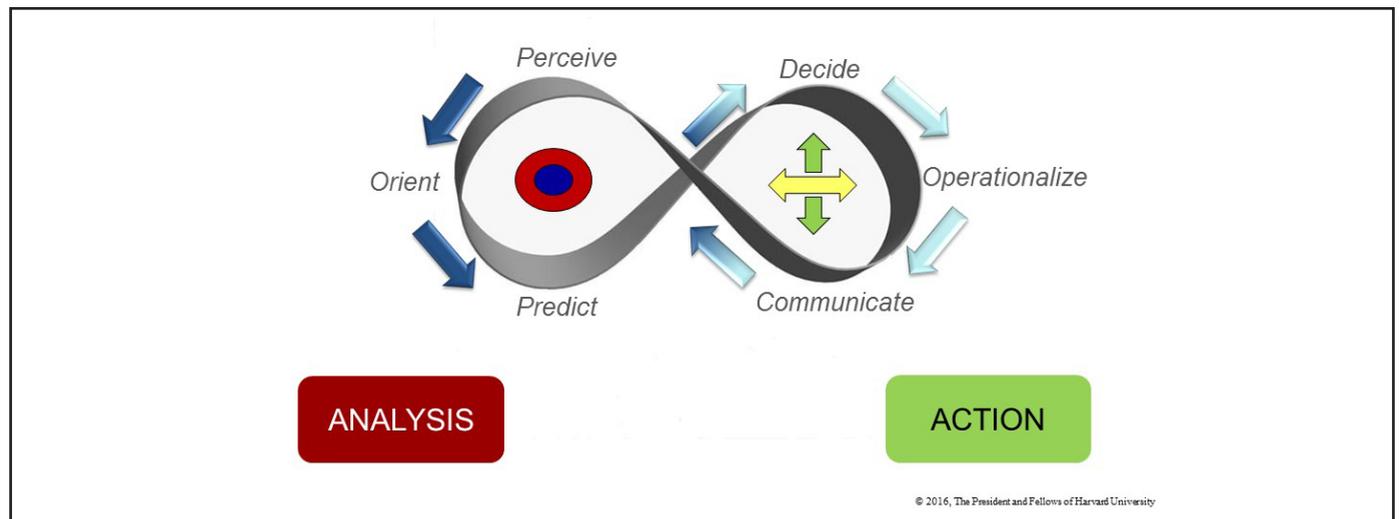


Figure 5. The POP-DOC loop.

view through data, senses, people, and the situation. Orient is the second step, which involves the leader making sense of and framing the information derived from the perceive step. The third step is to predict whereby the leader uses the framed information and prognosticates future events. Predict is the final step on the thinking loop.⁷⁶

The D-O-C steps are on the action loop and include (4) decide, (5) operationalize, and (6) communicate. The fourth step, decide, informs the decision making based on the information from the POP steps and risk management. In the fifth step, operationalize, the leader observes outcomes and impacts of the decisions made in the previous step. The final step in the loop is to communicate. Decisions, actions, impact, and outcome are communicated externally to stakeholders and internally to inform the next loop through the POP-DOC. The POP-DOC loop analysis is continuous.⁷⁶ Meta-leaders acknowledge both the challenges and opportunities of complex adaptive systems. Rather than obsessing on command or control they operate within the system to achieve order beyond control and strive to create conditions where collective energy, ideas, and determination emerge.⁷²

Crisis leader attributes

The project team conducted a literature review to determine the experience, technical, and character attributes of crisis leaders in the ICS environment. The team engaged over 40 articles and book chapters covering topics such as IC, crisis manager, disaster manager, emergency manager, disaster leadership, leadership in VUCA environments, crisis leadership, and meta-leadership.^{1,2,4-8,46-53,56,67,68,71-94} For example, a sample of the researched literature included the following topics: leading in VUCA times⁶; developing leaders for a VUCA environment⁴⁷; VUCA, leading in turbulent times⁷¹; top 10 competencies of professional emergency managers⁹⁰; top 14 traits of effective crisis leaders⁹²; what makes an ideal crisis leader⁹⁴; what makes a leader⁸⁰; three qualities of effective incident managers^{83,86}; 10 key characteristic of crisis leaders⁸⁵; and what we know about emotional intelligence.⁸⁹ The review revealed 100 crisis leader attributes, which were grouped into 28 general categories. The

attribute categories were rank ordered by frequency of occurrence in the literature. Forty-four meta-leader attributes were then aligned to the crisis leader attributes and their frequency of appearance in the defined meta-leadership attributes; see Appendix 2.

Numerous attributes, qualities, and/or characteristics of the ideal crisis leader emerged. After compiling a list of attributes, and looking at the taxonomy to develop themes, the team found crisis leader attributes were often in alignment with the meta-leader character attributes.⁹⁰⁻⁹⁵ The following characteristics and attributes are associated with meta-leadership: ability to connect disparate groups; ability to see the sum of parts; multidimensional problem solver; quick thinker and reactor; agile; adaptable; resilient and flexible; emotional intelligent; understands culture; thinks strategically; visionary; quick study; can operate absent traditional management support; creative; great communicator; inspirational; leverages resources; reduces friction and achieves synergy; achieved connectivity; cross-agency thinker; understands risk; collaborator; negotiator; confident; proficient; experienced; effective in times of uncertainty; builds and maintains trust; has courage; curious, imaginative, has organizational sensibilities, conflict manager, crisis manager, persistent, and views meta-leadership as a valued effort.⁹⁰⁻⁹⁵

Advisor attributes

The project team seeks to establish the link among the crisis leader, meta-leadership, and the crisis leader advisor. It is important to link the attributes identified above to the attributes and skills of the advisor who will support the leader before, during, and/or after a crisis event. In their role of partnering with the crisis leader, the advisor should possess not only prior experience leading a crisis, but they must also be savvy in mentoring and executive coaching competencies as well. The project team collected the attributes of advisors, mentors, and coaches from personal interviews, personal experience, and professional trade organizations and organized them in the chart in Appendix 2. The individual attributes of the crisis leader and advisor must align. This crucial alignment will ensure that the crisis leader is paired

with the most highly skilled advisor who will bring the tools, experience, and abilities to effectively partner with and support the crisis leader during a VUCA event with intense pressure, overwhelming tasks, and critical decision-making opportunities. Additionally, the project team will validate the list of desired crisis leader attributes necessary in a potential crisis leader advisor. (See Appendix 3.)

When combining crisis leader, meta-leadership, and advisor attributes, the most critical attribute cited throughout the literature was experience and knowledge. The project team agreed that meta-leadership attributes are critical in a VUCA crisis for the crisis leader and the crisis leader advisor to embody. The effectiveness and value of meta-leader leadership in VUCA events are well documented in responses to 9/11, Hurricane Katrina, Deepwater Horizon, and the Boston marathon bombings.⁷¹⁻⁷³ Additionally, the team agreed that the right match among leader, advisor, and meta-leadership would positively affect the crisis leader's ability to perceive, orient, predict, decide, operationalize, and communicate; moving appropriately between the thinking and action loops of the Mobius.

The research team will link hyper-VUCA crises, the ICS or any other crisis response framework, meta-leadership, crisis leader attributes, and advisor attributes to investigate the thoughts and perceptions of crisis leaders regarding integrating a crisis leader's advisor position into the ICS or any other crisis response framework to assist in managing large-scale events. The research team developed three research questions (RQs):

RQ#1: What are current crisis leaders' thoughts, perceptions, and ideas regarding creating a crisis leader advisor position that could be summoned to assist in managing hyper-VUCA or Type I incidents?

RQ#2: What are current crisis leaders' thoughts, perceptions, and ideas regarding obtaining certification as a crisis leader advisor?

RQ#3: What attributes do crisis leaders think are most important for a crisis leader advisor to embody?

METHODOLOGY

Research design

The research team employed a qualitative research methodology using a phenomenological approach⁹⁶ to

understand crisis leaders' perceptions, insight, and perspectives regarding the crisis leader advisor project. The team developed three RQs: (RQ#1) What are current crisis leaders' thoughts, perceptions, and ideas regarding creating a crisis leader advisor position that could be summoned to assist in managing hyper-VUCA or Type 1 incidents; (RQ#2) What are current crisis leaders' thoughts, perceptions, and ideas regarding obtaining certification as a crisis leader advisor; and (RQ#3): What attributes do crisis leaders think are most important for crisis leader advisors to embody. Participants were recruited from the Big City Emergency Managers (BCEM), the National Capital Region Emergency Managers, the National Capital Region Fire Chief, the National Preparedness Leadership Initiative (NPLI) alumni, and the US Coast Guard. Selection was based on a purposeful sampling method.^{96,97} An inclusion criterion was that informants must have had experience leading or managing a complex or Type I incident within an incident command type system. The purpose of the sampling strategy and inclusion criteria was to identify informants with crisis management and incident command experience that could provide the most realistic information regarding their thoughts, perceptions, and feelings about the crisis leader advisor proposal to help the research team validate the proposed crisis leader advisor position.^{97,98}

The participants were administered a short, online survey consisting of 11 questions to evaluate their perceptions, experiences, and feelings regarding the crisis leader advisor project. The survey was constructed of short, concise questions⁹⁷ to prevent response bias from response fatigue.⁹⁹ Six of the questions were open ended, four were multiple choice, and one was ordinal scale¹⁰⁰ (Appendix 4). After several iterations resulting from both a field (Appendix 5)^{97,100} and a pilot test¹⁰¹ (Appendix 6), the survey instrument (Appendix 4) was finalized and approved by the research team and administered for a 2-week period from April 1 to 15, 2016.

Data analysis. Data from the multiple-choice questions were analyzed using the following two data analysis strategies: descriptive statistics in the form

of percentage analysis and multiattribute utility analysis in the form of weighted sums. Descriptive percentage analysis involves representing and reporting the results of survey responses as percentages of the respondent compared to the sample size. Raw streams of data are reported as percentages to better understand and analyze the dataset.⁹⁶ Percentage analysis was used to analyze questions #1, 2, 3, and 6. Multiattribute utility analysis in the form of weighted sum is a technique for evaluating multiple alternatives by assigning weights based on the respondents' ranked preference, and multiplying each by their given weight and summing them together to get the final rating for analyses.^{102,103} Weighted sum was used to analyze the responses to question #7.

Data from the following open ended survey questions were analyzed using inductive thematic analysis: questions #4, 5, 7, 8, 10, and 11. The thematic analysis methodology consists of searching a data set for repeated patterns or meanings, and is considered among the most appropriate means to analyze data collected in qualitative inquiry.¹⁰⁴ Prior to analyzing the data, the data analysis team described their personal experiences subjectively and set them aside, so they could focus solely on the respondents' experiences. The data analysis team employed a six-step data analysis methodology,^{97,104,105} which included transcribing and reading through the response transcripts to get an overall tone. Then, the data analysis team organized the information into narratives for coding, developed and organized themes, and interpreted the data.^{97,104,106}

The data analysis team coded the data using first-cycle and second-cycle coding processes.¹⁰⁷ First-cycle coding processes were applied during the initial coding, which generated multiple codes; and second-cycle coding enable the team to scope the codes from the first cycle by classifying, prioritizing, integrating, synthesizing, abstracting, and conceptualizing to generate categories and themes. The data analysis team used a combination of descriptive coding and values coding in the first cycle. Descriptive coding summarized a passage of qualitative data into a word or phrase. Values coding reflected participants' values, attitudes, and beliefs, which represent their perspec-

tive."¹⁰⁷ The data analysis team used pattern coding as a second-cycle coding method to identify emergent themes, configurations, or explanations.¹⁰⁷ The pattern coding supported major themes development from datasets, and allowed the data analysis team to search for rules, causes, and explanations with the data.

This article is part one in a two-part series. In the first part, a project team from the National Preparedness Leadership Initiative, Harvard T.H. Chan School of Public Health/Kennedy School of Government, Harvard University, sets the stage to justify the need for a national network of crisis leader advisors. The article also investigates the opinions of past leaders of crisis situations to determine if they see value in establishing a crisis leader advisor position to enable people who might find themselves leading in crisis situations, perhaps for the first time, to benefit from the crisis leader advisors' past experience during an ongoing crisis response. Part two in the series provides survey results, analysis, and recommendations for future direction.

LINKS TO COMPLETE ARTICLE AND APPENDIX

Part 2:

<http://www.wmpllc.org/ojs-2.4.2/index.php/jem/article/view/606>

Appendix:

<http://www.wmpllc.org/ojs-2.4.2/index.php/jem/article/view/607>

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