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AESTHETICS OF RESILIENT SYSTEMS

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Abstract: Organizational resilience is a topic of great interest to those involved in managing risk, crises, and emergencies. Past understanding of organizations and resilience was shaped by scientific analysis and methods. In this paper we explore the role of art and aesthetics in understanding resilience. We suggest that arts-based, ‘aesthetic’ process techniques can be used to help risk and crisis managers to generate qualitatively different understandings of the firm’s risk profile and more resilient ways of coping with crises. We propose a topological approach that accentuates the aesthetic understanding of risks and crises. We end by exploring how aesthetic management can help create more resilient organizations that are more aware of risks and less prone to crises, and that have better capacities to recover from crises.

Complexity and uncertainty in the business environment lead to the breakdown of systems resulting in crises. Large scale technological systems (whether they be chemical or nuclear plants, computerized stock exchanges and markets, or ships and space vehicles) are inherently prone to crisis. These systems are purposively designed to be complex, interconnected, and constituted of multiple sub-systems. On the one hand, such complex interconnected designs allow for the accomplishment of a multitude of complex, technical tasks, making the systems efficient and capable of high performance. Some of these complex interdependencies even improve the reliability and safety of the systems themselves. But on the other hand, they may make systems more susceptible to failures that can be triggered within any of its components. Moreover, these interconnections also serve as pathways for the transmission of errors throughout the system.

In recent years, we have witnessed many different forms of crises caused by breakdowns in complex socio-technical systems. Examples include the global financial crisis, the global climate crisis, global poverty crises, as well as organizational crises at companies such as Exxon, Enron, Worldcom, Merrill Lynch, Lehman Brothers, and Union Carbide. Another set of crises are those triggered by natural disasters such as the Hurricane Katrina and the recent earthquake in Haiti, both of which completely overwhelmed the organizational systems in place, and highlighted the importance of organizational resilience.

The concept of resilience has been defined in a variety of ways by organizational scholars in recent years, but the basic notion is borrowed from materials science, where the term refers to the capacity of an object or system to absorb stress and retain or regain its shape. For example, Yossi Sheffi of MIT has written extensively on the importance of resilience in business supply chain and logistics operations (Sheffi, 2005), and Gary Hamel has analyzed resilience as a strategic capability (2003). We consider organizational resilience as the capacity of organizations to cope with unforeseen events with flexibility and using a wide repertoire of responses. In this sense, resilience involves the human capacity to creatively imagine and execute novel responses as well as the willingness to embrace uncertain futures that hold the potential to transform the organization into something very different.

The spectacular breakdown of systems during crises focuses attention on the fundamental assumptions as well as the basic values undergirding the resilience of socio-technical systems. Historically, systems designs have been premised on cognitive, rational, objective, scientific and technological understandings and scientific management methodologies. Organizational scholarship has for too long been digging primarily in the cognitive-rational-logical mineshaft. Indeed, since the rise of ‘scientific management’, management education, practice and research have focused on rational objective understanding of systems. As a result, managers and management scholars have precious little epistemic appreciation of, training in, and skills to generate embodied practical knowledge. Of course, practical knowledge involves cognition, but it also involves physical and emotional dimensions of experience, including mind, body and spirit. And yet, because under the regime of scientific rationality there is no space for discussion of human emotionality and its influences on organizational performance and resilience, these “softer” human dimensions of experience, have been either ignored completely or rounded out of the equation as error functions.

We suggest that the large system failures cited above call for critical reflection about the adequacy of traditional assumptions about organizational resilience, and for the exploration of new ways to improve organizational resilience to crises. Again, although organizations are experienced primarily through the body, corporally, with senses, most theories of organization are cognitive, based on the restrictive epistemologies and corresponding methodologies of science. Thus we believe that new and important insights can come from an exploration of embodied, practical knowledge. In particular, we are interested in the embodied knowledge that can be generated through artistic and aesthetic inquiry into organizations and socio-technical systems. We suggest that arts-based, ‘aesthetic’ process techniques can be used to help risk and crisis managers to generate qualitatively different understandings of the firm’s risk profile and more resilient ways of coping with crises.

In the wake of recent crises, we are already seeing widespread calls for critical reflection of the assumptions and values about governance, ethics, social responsibility, sustainability of our organizations and economic systems. These arenas of management practice are themselves rooted in emotional, embodied, cultural and historical dimensions of human experience, and these dimensions of experience are being brought to the foreground as researchers and educators have started to identify specific qualitative, subjective dimensions of human experience as a valuable site for more holistically examining organizations. For example, the Carnegie Foundation for the Advancement of Teaching is engaged in a multi-year study of the integration of the liberal arts into undergraduate business school curricula.¹ The Association to Advance Collegiate Schools of Business (AACSB) has produced a major study and gathered a set of resources emphasizing the centrality of ethics for business education.² Similarly, the Aspen Institute’s Business and Society Program has undertaken a considerable policy agenda to advance the integration of ethics and sustainability into the MBA curriculum.³

¹ www.carnegiefoundation.org/business-education

² www.aacsb.edu/resource_centers/EthicsEdu/default.asp

³ www.aspeninstitute.org/policy-work/business-society

We applaud these efforts, and as a complement to them we wish to emphasize the specific relevance of arts-based, or aesthetic experience in organizational resilience practices. This paper begins by examining the research on organizational aesthetics. We then apply aesthetics to organizational management to develop the idea of aesthetic management. We propose a topological approach that accentuates the aesthetic understanding of risks and crises. We end by exploring how aesthetic management can help create more resilient organizations that are more aware of risks, less prone to crises, and have better capacities to recover from crises.

■ ORGANIZATIONAL AESTHETICS

The term “aesthetics” carries at least two primary significations. The roots of the word come from ancient Greek, where “aisthesis” referred to perception, or sensory awareness. For Plato, Aristotle and other Greek philosophers, sense perceptions could be understood as fleeting, everyday occurrences, and also as one mode of approach toward knowledge (*episteme*) or wisdom (*sophia*). Aesthetic sense perception was especially relevant for Greek philosophical pedagogy when the object perceived was something of beauty created naturally or by an artist.

The term “aesthetics” acquired its second primary significance in the 1700’s, when Alexander Baumgarten suggested that the sensory perception of beauty could be re-framed not only as an embodied experience, but also as a particular mode of rational thought. Immanuel Kant developed this notion further and established aesthetics as a unique form of human judgment. Specifically, Kant argued that when people make judgments about beauty, they make an appeal to the possibility that all other people could agree with them, and thereby reveal the universality of human reason. For Kant, beauty provided a symbol of the morally good, and aesthetic judgments revealed the basis for the “common sense” that makes ethics possible. In Kant’s formulation:

We must [here] take *sensus communis* to mean the idea of a sense *shared* [by all of us], i.e., a power to judge that in reflecting takes account (a priori), in our thought, of everyone else’s way of presenting [something], in order *as it were* to compare our own judgment with human reason in general and thus escape the illusion that arises from the ease of mistaking subjective and private conditions for objective ones, an illusion that would have a prejudicial influence on the judgment (*Critique of Judgment*, 160).

The significance attributed by Kant to the term “aesthetics” as a mode of judging the value of sense experience has shaped subsequent theoretical developments in two academic disciplines: art criticism, which addresses the object of aesthetic experience (i.e., the artwork); and philosophical aesthetics, which addresses the cognitive, social and emotional dimensions of the experience itself, seeking to explain what the experience consists of and how it is possible.

For our purposes here, it may suffice to note that following Kant, aesthetics cannot be dismissed simply as an enjoyable but frivolous pastime with little relevance to the rational, scientific pursuit of efficiency or profit in organizations. Indeed, aesthetics appears not only as a crucial way in which people judge the value of their sense perceptions, but also as an integral component of how people identify and communicate the ethical values that provide a basis for meaningful community. Equally important for us to note here is that, following Kant, aesthetic judgments cannot be reduced to propositional logics, boiled down into concepts or if/then statements that can be communicated discursively. Instead, they involve presentational logics that must be experienced, perceived through the senses of other embodied individuals. In this light, both play and the fine arts provide compelling domains for management research because they deliberately and explicitly involve embodied experience and aesthetic judgment.

There are numerous papers published in recent years in the organizational research literature that present evidence of how play and the arts can be integrated into management training and education. For example, researchers have explored the use of various *media* (e.g., theater (Beckwith, 2003; Boggs, Mickel, & Holtom, 2007; Meisiek & Barry, 2007); sculpture (Burgi & Roos, 2003; Jacobs & Heracleous, 2006; Roos, Victor, &

Statler, 2004); literature (Buswick et al., 2004; Styhre & Eriksson, 2008); and dance (Shapiro et al., 2006; Styhre & Eriksson, 2008)). Such arts-based and playful activities take place in various contexts, including university classrooms (Boggs et al., 2007; Cowan, 2007; Shapiro et al., 2006), organizational training and development initiatives (Meisiek & Barry, 2007; Styhre & Eriksson, 2008), leadership development (Asbjornson, 2007; De Cantis, 1995; Grisham, 2006), innovation and creativity training seminars (Buswick et al., 2004), and even strategy processes (Roos et al., 2004). Such activities have been designed and facilitated in order to achieve a number of different objectives, including the development of individual skills (incl. listening (Asbjornson, 2007); communication (Asbjornson, 2007; Beckwith, 2003); critical thinking (Boggs et al., 2007); awareness (Cohen, 1998; Corsun et al., 2006); leadership (Cowan, 2007; De Cantis, 1995); problem solving (Gibb, 2004); self-knowledge (Chio & Fandt, 2007; Monks et al., 2001)) as well as collective capacities (e.g., teamwork (Buswick et al., 2004); group creativity (Lengnick-Hall & Lengnick-Hall, 1999); dialogue (Meisiek & Barry, 2007); and shared understanding (Burgi & Roos, 2003)). Finally, in terms of outcomes, people who engage in arts-based learning processes in organizations are reported to gain new insights, knowledge or understanding (Buswick et al., 2004); improve skills or altered behaviors (Corsun et al., 2006); experience new or more profound emotions (Dow et al., 2007; Grisham, 2006); and improve organizational performance (Burgi et al., 2004; Styhre & Eriksson, 2008).

In light of the significance of aesthetics established by the ancient Greeks and extended by more contemporary philosophers, and in view of these findings published by organizational researchers in recent years, the question that we wish to raise is: *how can aesthetics contribute to the development of increased resilience in organizational and management systems?*

■ AESTHETIC MANAGEMENT

Aesthetic experiences have great relevance to managerial decision-making. They encompass a set of competencies and skills and offer opportunities to expand traditional, rational analysis by adding emotionally intelligent decision-making based in sense perceptions. In short, aesthetic experiences can provide managers with occasions a) to expand their sense perceptions; b) to exercise judgment based on embodied and holistic understanding of systems; and c) to reflect on those perceptions and judgments collectively with colleagues to achieve socially responsible and sustainable outcomes.

In recent years the efficacy of aesthetic skills has been borne out in a number of decision-making areas. Medical Schools at Yale, Stanford, Cornell, and Mount Sinai in New York, include in their curriculum a course in art appreciation. This innovation was based on the finding that students who learn to “observe” art, its nuances and details carefully, are able to use the same keen observational skills to diagnose patient symptoms and subtle bodily cues. In addition, the aesthetic skill of holistically appreciating art pieces serves well to synthesize disparate pieces of information (observational data, test results, medical histories) to make overall judgment on patient conditions (Kennedy, 2006).

Can such observational skills be useful for managers in high-risk systems? Can keen sense of observation and synthesis help make organization more resilient? To the extent that many crises and systems breakdowns occur because of human negligence, inattention, poor observation and recording, fragmented data, we can make a good case for the relevance of such aesthetic skills.

Another type of relevance of aesthetics to managerial decision-making is apparent in times of emotional fatigue and burnout. Aesthetic experiences are constituted of emotional understanding and knowledge. Emotional fatigue is accompanied by lack of motivation, inattention to tasks at hand, negligence, that eventually contribute to errors and breakdowns in decision-making. Emotionally stressed workers and managers engage in risky behaviors that make systems prone to breakdown. Emotional self-understanding, and awareness of their emotional conditions can help workers to be sensitive to their own vulnerabilities.

Crises represent periods of high emotional stress for organizations and managers. Organizational leaders who are skilled in the aesthetic dimensions of experience may be well-suited to manage effectively under conditions of crisis and uncertainty. The awareness of the aesthetic dimensions of experience can usefully extend existing human and organizational capabilities, contributing to the resilience of systems under conditions of extreme stress.

Recent research (Statler & Roos, 2007) suggests that people who manage risk and make decisions in crisis situations may benefit from aesthetically-rich processes. When the proverbial smoke is in the air, managers often struggle to gain clear, unambiguous information, and often the overall purpose and function of the organization is called into question by emerging circumstances. During the planning stage however, organizational leaders utilize quantitative modeling techniques designed to calculate the probability of certain risk factors, and the relative impact that these factors will have on the organization. The parameters for these risk models are set in reference to a series of qualitative judgments based on historical information and expert opinion. The accuracy of the predictions that these models generate is only as good as the judgments that have guided their design. Thus when an “unknown unknown” event transpires, leaders cannot rely on the models any more, and they are forced to make decisions based on their own qualitative judgments of the situation.

In this sense, we wish simply to point out that crisis managers are already making decisions based on aesthetic and ethical criteria (including the common good, fairness, justice, reputation of the firm, etc.) all the time. These criteria have typically not, however, been explicitly discussed by the leaders themselves prior to the crisis event. More broadly, scholars have not subjected such foundational assumptions to critical reflection and analysis. Our purpose here is therefore to call attention to the various aesthetic criteria that shape and constrain managerial decision making in crisis situations, and thereby to suggest that an organization’s resilience to unexpected change may depend on what the managers themselves think is beautiful.

Topological Aesthetics of Risk and Crises

The mathematical discipline of topology provides one way to call attention to the relevance of certain specific aspects of aesthetic perception and judgment in the context of risk management. The conventional approach to risk management, outlined above, involves the use of algorithms to model what happens to the firm if and when certain events transpire. In this analytic process, the enterprise itself remains relatively passive – it suffers or survives change, but the variables in accordance with which its overall shape is determined as such remain the same.

Topological analysis poses a different question about the future of the firm, namely: “what are the *various* and *varying* parameters that might be used for determining the future value of the enterprise” (Statler & Richardson, 2008). From this perspective, the identity of the firm can change, and the parameters within which variables shift can also change – indeed, the whole enterprise must be qualitatively re-imagined in order to fit and retain its value within an ever-shifting environment. In this sense, the resilience of a particular strategy or operation depends not only on the probability of certain events (and the measures taken to mitigate the negative impacts of such events), but also on the overall narrative of the firm that is collectively imagined by its various stakeholders. It also depends on the aggregated sense perceptions, and the qualitative judgments made regarding the value of those perceptions, by stakeholders.

What then are the specific practices that can sustain an organization and its stakeholders even under the most extreme crisis circumstances? To what extent can external features of the organization shift and yet still remain coherent? Aesthetic process techniques can provide crisis managers with a concrete practical means of raising and answering questions such as these. The arts-based evocations of an organization’s identity or basic values can be seen as topological maps of the organizations risk profile, or as assessments of its potential for sustainability even under extreme circumstances.

Aesthetic Competencies or Skills

While there is no readily available list of aesthetic competences or skills, we suggest the following as a starting point for building an inventory,

- Keen sensory perceptions (seeing, hearing, touch, smell, taste)
- Awareness acuity, depth, variety
- Synthesis of diverse data
- Empathy and communication with others
- Emotional stability and flexibility
- Awareness of physical and social environments
- Calmness and reflectiveness
- Sense of fit, sense of place, sense of social and cultural appropriateness
- Control over emotional states, self-regulation

Gaining such skills is partly a function of life experiences and partly the natural propensity of individuals. Art and aesthetic is a universal human instinct (Dutton, 2009). It is an instinct embedded in the mind body and spirit. It is an instinct that can be developed with cultural experiences. Every person is endowed with some level of aesthetic qualities. They can be further cultivated and sharpened. They can be developed via art appreciation courses, artistic practices, awareness and emotional training, and sensitivity training. They can also change through transformative life experiences.

Learning Aesthetic Skills

Aesthetic skills can be learned. Some common approaches to enhancing aesthetic skills include:

Meditation and Self-Awareness Practice

Meditation and other self-awareness practices have been around for 5000 years as mentioned in ancient Indian Vedic texts. About 500 BC Buddha and his followers systematized meditation into a coherent doctrine and discipline. It is the discipline of achieving physical, emotional and mental balance by stilling the mind and gaining awareness of the body in the moment. Hundreds of different schools of learning have emerged to teach meditation. Concentrative meditation focuses the attention on the breath, an image or a sound, in order to still the mind and allow a greater awareness and clarity to emerge. Mindfulness meditation increases awareness of the inundation of “sensations and feelings” around oneself, but at a distance. Meditator experiences every aspect of the environment without consciously thinking about it.

Art Practice

The practice of the arts (painting, music, dance, theater, etc.) is probably the most direct way of developing aesthetic skills. Each fine art discipline has its own epistemology and accepted methodologies. It creates affective development by increasing the practitioner's interest, motivation, self-esteem and enthusiasm. Art-making is a highly mental, physical and emotional process. Art objects/performances are repositories of emotion and emotionally productive. Creating art necessitates deep self-examination, creation of novel and unique works. It sharpens perceptions, skills of synthesis, and heightens sensibility of fit and appropriateness. There are of course technical skills and virtuosity necessitated by each art form which imposes a high level of discipline, and rigorous standards on the learner.

Creative Play

Play is an excellent means for exercising and building up the executive functions of working memory, inhibitory control and cognitive flexibility. Creative play results in an increase in individual self-regulation and self-control. It provides an open constructive space for experimentation and innovations. Play also gives players a chance to define, refine, and test limits of rules. It allows people pretend dramatic action with low

risk. The concept of “serious play” has been introduced by organizational researchers as a way to describe how these emergent benefits of play can be deliberately brought to bear on strategic organizational challenges (Roos et al, 2004; Statler et al, 2009).

Passionate Engagement

Passionate commitment to cherished causes or ideas that allow holistic engagement can serve to experience and develop aesthetic skills. Dedicating oneself to any cause demands a deep commitment that is borne of awareness, empathy and emotional connection.

There is a natural relationship between the aesthetic skills that can be developed and enhanced through the practices listed above and organizational resilience. Resilience implies flexibility and responsiveness to external conditions. Flexibility in socio-technical systems involves both the human ability to improvise and also the social and emotional suppleness required to react to different stressors. These practices can help develop the ability to improvise, while cultivating flexible social relations and emotional suppleness.

■ AESTHETICALLY RESILIENT SYSTEMS

By identifying and articulating the aesthetic dimensions of organizations, we hope make leaders currently struggling with complex crises aware of a wider repertoire of skills and actions available to them. These dimensions include appreciating individual emotionality and aesthetics, and the collective emotional/aesthetic infrastructure of organizations, markets, and communities, and a topological view of organizational risks. These dimensions are intertwined with technological and economic/financial dimensions of organizations, markets and society.

We cannot of course simply assume that anytime someone literally paints a picture of an organization that this representation will contain meaning that calls for a fundamentally different approach to risk management. Indeed, some aesthetic process techniques may be perfectly useless, or worse, they may occlude certain vulnerabilities or sources of resilience. By the same token, some leaders or groups of managers may be more attuned to the salient aspects of aesthetic representations, more capable of making sense of them and considering how they bear upon the organization’s strategy and operations. Viewed topologically, the resilience of a firm is continually enacted by its stakeholders, and thus the strategic value of any particular arts-based technique at any particular point in time hinges on the extent to which it provides decision-makers with an occasion to enact resilience.

This notion may seem fairly abstract to some readers, but it could hardly be more concrete in view of the following illustration (cf. Statler & Richardson, 2008) drawn from the ongoing global financial crisis. In a speech delivered in May 2008, US Federal Reserve Chairman Ben Bernanke pointed out why some banks had performed better than others when the global credit markets collapsed in the summer of 2007. Specifically, he claimed that the banks that had done poorly did not adequately identify and measure risks because they “took an excessively narrow perspective on risk with an insufficient appreciation of the need for a range of risk measures, including both quantitative and qualitative metrics.” Bernanke went on to acknowledge that although “...sophisticated quantitative tools and models play an important role in risk management...no model, regardless of sophistication, can capture all the risks that a firm might face.” As for the firms that had weathered the storm with less damage to the bottom line, Bernanke emphasized their use of “stress tests” that forced practitioners to “step back from daily concerns to think through the implications of scenarios that may seem relatively unlikely but could post serious risks to the firm if they materialized.”

These stress tests typically involve imagining how a particular scenario, whether based on past precedent (e.g., a previous market collapse) or on unrealized potential (e.g., simultaneous terror attack on multiple global banking centers), would impact the firm. From a topological perspective, they require decision makers to consider how the firm’s identity would shift under such circumstances, and to consider whether the firm

could be sustained even if certain components of its identity (e.g., revenue streams, leadership structure, physical footprint) were lost. But in any case, the point of the illustration is that America's top banking regulator emphasized the importance of shifting the qualitative judgments that form the parameters for quantitative risk models, and arguing that a firm's capacity to address that qualitative dimension of its risk management strategy can allow it to survive and even succeed where others fail.

In light of this example, it seems that by becoming aware of aesthetic dimensions of experience, leaders may find new insightful ways of handling the aftermath of crises. They may attempt to combine technical and financial parameters with the aesthetic and emotional ones, to implement creative crisis management measures. For another example, consider the case of Haiti Earthquake in January 2010. Traditional emergency response measures failed to mitigate the impacts of the earthquake mostly because the basic infrastructure that they were premised on was simply not there. Without roads, electricity, transportation, and with minimal law-and-order, the aid that was available from donors failed to reach victims.

From a topological perspective, the challenge of responding to a disaster in Haiti is not merely a matter of short-term resource provisioning, but additionally a matter of how to address the longer-term, sustainable development of Haitian society. Indeed, the recent history of Haiti is marked by a series of natural and man-made disasters, and yet various international humanitarian responses to those disasters have arguably not improved the basic conditions significantly. In this sense, the challenge associated with emergency response appears to involve addressing the longstanding political corruption, deep poverty, environmental destruction, etc., that mark Haitian society. Many of the people whose poorly-constructed homes collapsed on their heads in Port-au-Prince had arrived in the metropolis only once their agricultural lifestyle had become unsustainable due to deforestation, poor land management, and a lack of both knowledge and technology. Haiti appears to exist in a state of "permanent emergency" and it is unrealistic to think aid providers can swoop in, distribute food, water and medicine in the short term to provide a bridge that allows the society to regain normal functions.

In this light, the centralized mode of aid delivery probably needs to be reversed and driven from the community itself. For example, instead of delivering water it may be feasible to create community capacity to purify local water with suitable chemicals and home- and community based purification systems. Even more fundamentally, an aesthetic sensibility draws attention to the fact that although the majority of the people of Haiti speak Creole, the official language of the Haitian state is French, a language that is spoken as a first language by only a minority of the citizens. In this light, basic access to the knowledge and power required to develop resilience community infrastructure may be systematically denied due to a linguistic barrier that derives from the island's colonial heritage. How would Haitian society be different if Creole were embraced as an official language? While it may always remain difficult to quantify the specific value of aesthetics in organizations, we suggest that the potential value may be realized in situations where existing quantification schemes and governance models break down, and organizations need fundamentally to rethink their mode of approach in reference to basic qualitative values such as those that reside within a particular language and culture.

■ IN LIEU OF A CONCLUSION

This paper was an exploration into the aesthetics of resilient systems. This is a new area of inquiry so we are reluctant to make firm conclusions about it. Our goal was very modest. We examined the importance of embodied knowledge obtained through aesthetic inquiry for understanding managerial issues. We suggested that through aesthetic inquiry we can gain a different understanding of resilience, and that this embodied understanding can enhance decision making with regard to risks and crisis. In lieu of a conclusion we offer some remarks about the utility of combining artistic/aesthetic and scientific analysis in the development of more resilient organizations.

- Aesthetics inquiry is little known in the realm of management studies and management practice. Much of management thinking and decision-making is driven by scientific assumptions, models, and methods. Art and aesthetics are considered irrelevant or inferior to scientific approaches. Scholars and managers interested in adopting aesthetic approaches will have to overcome this prejudicial bias against this form of knowledge.
- Embodied aesthetic inquiry requires new types of skills (physical, emotional, hermeneutic) that most management researchers and practitioners do not possess. Our educational systems at the primary and secondary school and college levels offer very limited options for developing art aesthetic skills. Moreover, they channel professionally aspiring students to scientific and technical courses. It is not unusual for managers, engineers, lawyers, doctors, to go through 18 or 20 years of education without a single course in art appreciation or art practice. So acquiring aesthetic skills must be done against the prevailing trends in the educational system and cultural environment.
- In the organizational context, it is very difficult to assess the utility of aesthetic inquiry and skills on the same productivity metrics as other technical and soft skills. These skills often don't have direct measureable outcomes. They offer perspectival value that is not always appreciated. So getting resources to develop aesthetic orientation is a major challenge.
- In the specific context of crisis management, the aesthetics of sense perception and value judgment can play a major role as people make decisions and take actions based on limited information and in response to a dynamically changing environment. There is a relatively well-established tradition of war gaming and simulation within the discipline of crisis management, and the embodied participation in such exercises is especially common among active-duty and ex-military personnel as well as civil servants with emergency response and/or physical security training. Ironically, these individuals often exhibit a strong resistance to the arts and aesthetics, deriding them as superficial frivolities that have no place in the serious business of managing crises. We believe this prejudice is an unfortunate side-effect of a series of culturally-specific notions of gender and power that have developed relatively recently in the West. As far back as Plato's *Republic*, music and gymnastics were seen as the methods of training most appropriate for the leaders and guardians of the ideal state. In this sense, we anticipate that the increased volatility of the global business environment, coupled with increased prevalence and impacts of natural disasters, this prejudice will be eroded by a straightforwardly practical need to develop new sources of human and organizational resilience.

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