

Mindful Organizations?

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Mindfulness has gone from being an interest of the few to becoming a popular idea. When I did a Google search in 2009 that gave about 2 million hits. Today, in December 2012, I get 16 million hits. Clearly, with this widespread use of the term there is more than one meaning in circulation. I'll begin to narrow it down by looking at a continuum from *mindlessness* to *mindfulness* through an everyday example.

Consider driving a car. You don't need to stop and think to figure out what a red light means or how to shift gears, and you quickly and automatically hit the breaks if a moose suddenly tries to cross the road.

You approach road works, and you see a sign for a diversion. The sign leads into an area where there is one clearly visible dirt road, but you also notice other, possible routes. You slow down and stop, trying to make sense of the multiple roads where you had expected to find one detour, clearly marked.

Consider a different example. You are still driving a car. This time, it is late and dark, you are tired and your mind is set on getting home in time for dinner. You hardly notice that your shoulders are lifted and that you are peering forward, trying not to be blinded by the headlights of approaching cars. You are dimly aware of an annoying sound. You say to yourself that it is probably just a small branch temporarily stuck under the car. Your focus is on getting home, so you drive on, ignoring the sound for now.



Although both stories may end well, there is a difference in the state of mind of the drivers. In the first example, the driver seems to have a relaxed presence in the act of driving, and she can easily mobilize a more keen presence if needed. When facing new information, she does not only attend to the expected (the visible dirt road), but also brings her peripheral vision (the unexpected

multiple roads) into awareness. The driver seems to be *mindful* of what she is facing and what she is thinking and doing.

In the second example, the driver seems to be consumed by his goal (getting home in time for dinner) in a way that reduces the amount of disturbing information he is capable of relating to. He is attending to his goal more than to the present moment, and he *mindlessly* presses on, ignoring ambiguous signals that enter his awareness.

It also makes good sense to distinguish between the first driver's reactions 1) to the moose, and 2) to the unexpected lack of clarity about the roads. In the first instance, the driver reflexively (and appropriately) hits the breaks. In the second instance, the driver slows down to consider her options in a reflective manner.

What would it look like if the night driver were in a more mindful state? He might notice his own fatigue and his tense posture, and become aware that he was trying to force himself to stay awake. He would sense his own irritation at an unexpected sound that might disturb the journey, and

notice his temptation to drive on in spite of a potential sign of danger. Still under stress, but in a more limber state of mind¹, he might be able to see impulses in perspective and even reconsider the goal of getting home in time for dinner.

For those who are no longer learners, driving is a skilled (hence automatic) activity. The mindful driver would, however, be more aware of inner impulses, and a wider range of new (and possibly unexpected) pieces of external information. Part of the driving would remain automatic (or skilled). However, a mindful driver would still be able to pause, think, and make conscious choices when required. In this state of mind, new information is not pushed aside to simplify matters, but noticed and sometimes brought to the center of attention.

Ellen Langer, the classic proponent of mindfulness in the West, suggested this definition: *mindfulness is a rich awareness of discriminatory detail*. This captures two important features of mindfulness; that it concerns the present, and that it avoids focusing too narrowly on information that is considered relevant for understanding the present. For example, the night driver in my example does not take in the full range of information about his own fatigue and the quality of the moment that he is in, and he shuts out information that disturbs his objective of getting home to dinner, such as the noise from an unknown source in the car.

So, what has this to do with organizations? Organizations cannot have states of mind in a strict sense of the word. There may, however, be ways of cultivating collective mindful attention and appropriate mindful action in organizations. It is perhaps easiest to give examples of how organizations can be mindless.

If a company continues to pursue a set strategy in the face of new information of what competitors are up to, things can go very wrong. To be unaware of shifts in the environment that would need to be addressed to stay competitive is one form of mindlessness. Controversies over strategic direction are common, and the way they play themselves out can involve other kinds of mindlessness. People may advocate a change or warn against it. When people get engaged, they may also get blind to how they communicate their positions, and, for example advocate a position rather than offering data for mutual exploration. This can lead to stalemates and mutual blame.

One research tradition in particular has contributed to the meaning of organizational mindfulness. These are studies over the last two decades of so-called *high reliability seeking organizations* or HROs.

Earlier theory had said that complex organizations and 'tight coupling' would be vulnerable to unexpected disturbances to their operations. Complex organizations characteristically have many interdependent parts. That they are tightly coupled means that the interdependence takes effect immediately because of lean organizational designs. The vulnerability stems both from the interdependence (a disturbance here will have ripple effects, and exactly where the ripples flow is unpredictable), and the tight coupling (the ripple effects may spread too fast to be contained). According to this logic, proposed by Charles Perrow, accidents would in a sense be 'normal' or unavoidable in the long run.

This was challenged when researchers noticed that some exceptional organizations didn't seem to fit the prediction. Exceptional organizations were identified that had a track record of safe operations over long periods of time, in spite of high degrees of complexity and tight coupling. Many of these could not afford major breakdowns, even if catastrophes were real possibilities; amongst the examples were aircraft carriers operating in peace time, exceptional nuclear power facilities, and air traffic control systems.

¹ The expression is borrowed from Ellen Langer's *Mindfulness*, page 70.

Without having a clear idea at the outset about what might set these organizations apart from others, researchers from Berkeley University embarked on an inductive search in many case studies. We'll look at one of the early examples, aircraft carriers.



The sight of an aircraft carrier is impressive. This heavily armed high-tech vessel may at first strike us as overwhelmingly powerful. A closer look may reveal its complexity and vulnerability.

One analysis illustrates the complexity:

A description of carriers only begins to illustrate their technological complexity. Each carrier is a city of 6,000 men with an airport on its roof. The city carries about 90 aircraft of seven different kinds (in nine squadrons), ranging from all-weather attack jets to propeller driven, early-warning aircraft, and helicopters. Each ship displaces approximately 95,000 tons of water, has a flight deck that is

about 1,000 feet long, and has between two and eight nuclear reactors, over a billion electronic components, and technical manuals which, if stacked, would be as high as the Washington Monument (555 feet)².

A Navy veteran highlights how these vessels are also vulnerable:

Imagine that it's a busy day, and you shrink San Francisco airport to only one short runway and one ramp and one gate. Make planes take off and land at the same time, at half the present time interval, rock the runway from side to side, and require that everyone who leaves in the morning returns the same day. Make sure that the equipment is so close to the envelope that it's fragile. Then turn off the radar to avoid detection, impose strict controls on the radios, fuel the aircraft in place with their engines running, pit an enemy in the air, and scatter live bombs and rockets around. Now wet the whole thing down with sea water and oil, and man it with twenty-year-olds, half of whom have never seen an airplane close-up. Oh, and by the way, try not to kill anyone³

How do you secure safe operations under such conditions? One way that organizations try to secure stable operations is through *structure*; good planning and extensive procedures. The difficulty with this is, that in a complex world, unexpected events can be expected, but never accurately predicted. Hence, you cannot *plan* for every contingency.

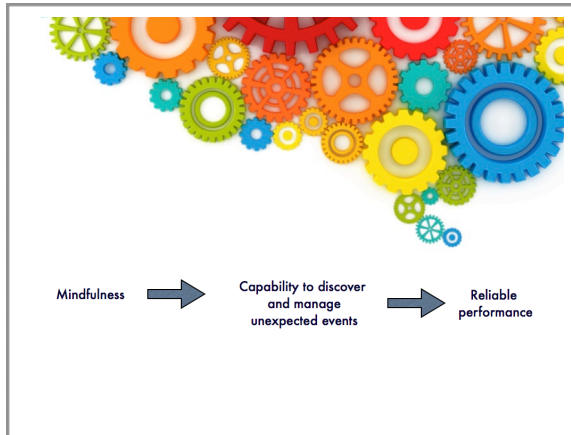
As evidence from case studies of HROs built up it became clear that they all had a unique *capacity for flexible response* along with rigorous structures and procedures. In an important synthesis, Weick and Sutcliffe went on to identify factors that enable this desired flexibility⁴.

² Roberts, K. H., Stout, S. K., & Halpern, J. J. (1994). Decision dynamics in two high reliability military organizations. *Management Science*, 40 (5), page 616.

³ Quoted in Weick and Sutcliffe, p. 24.

⁴ The researchers first published it in 1999 and further developed and refined it in their book *Managing the unexpected* (second edition 2007)

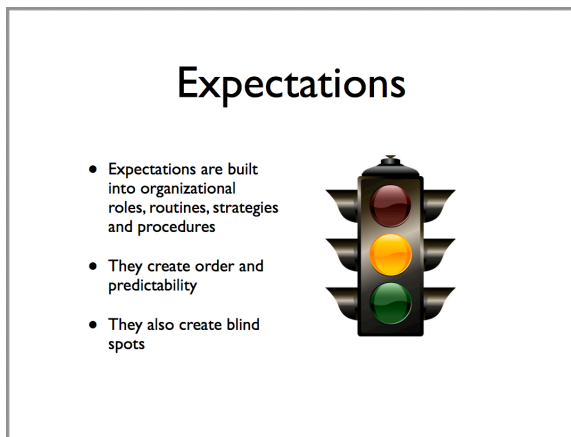
Weick and Sutcliffe found a set of common themes in the many studies of exceptional organizations with complexity challenges. The organizations studied were all facing the prospect of catastrophic failure; a power plant might melt down, a vessel might sink, and an emergency room might get overwhelmed. Some complexity challenges have their roots outside the organization; such as when a disaster of unexpected size brings more casualties to the hospital than it is equipped to handle, or when a tsunami goes over a pier and hits a nuclear power plant.



Other complexity challenges may have their roots within the organization; such as when the tightly coupled organization of takeoff and landing on aircraft carriers involves a choreography of many men and machines within narrow time frames.

In all cases, the key question about the exceptional organizations was: how do they maintain reliable performance? The common denominator proposed by Weick and Sutcliffe was a collective mindfulness that allowed these organizations to discover and manage unexpected events. To understand how they reach this conclusion, we have to go back to earlier findings in social and cognitive psychology.

We all have a set of expectations that help us navigate through our days. We know how to get to work without thinking about it. A downside of expectations is that they shape what we see, and we tend to look for and notice our currently held assumptions and beliefs. This helps us in many routine situations, but can be a problem when we correctly taking in and processing new information is important.



In traffic, we expect other drivers to yield if we have the green light. Mutual expectations are also helpful in organizations; it makes it easier to know what to expect from others. In organizations, expectations must be seen in the context of coordination. For example, when subsea operations are executed, people from different companies align under the leadership of a Shift Supervisor. Interdependence is tight and time pressure is high. Procedures tell people what is safe and what to expect each other, yet unexpected events do disturb the smooth flow of operations.

While expectations create order and predictability they also create blind spots. An example of this is when following safety procedures can create a false sense of safety. For this reason, Karl Weick suggests that the successful HROs 'carry their expectations lightly' and are able to balance respect for proper procedures with holding the door open to the possibility that expectations may not be met or may not be relevant.

In other words, 'carrying expectations lightly', has a lot to do with flexibility. Weick and Sutcliffe identified a set of processes and principles that they propose, create the capability to discover and manage unexpected events, which they called a *mindful infrastructure*. An 'infrastructure' in this

Mindful Infrastructure

A complex pattern of shared...

- Mindsets, e.g. a near miss may be a sign of bigger problems
- Rules, e.g. usual command lines may defer to local expertise
- Values, e.g. operations are worth attention and respect

case is a metaphor to describes an organizational culture: relatively stable and complex patterns of shared mindsets, rules and values.

An example of a *productive mindset* could be the shared belief that a small error might be sign of a deeper problem. An observation by one of our researchers in the subsea operation may serve as an illustration. A subsea remotely controlled vessel, an ROV, had started leaking hydraulic oil and needed to be brought to the surface for repairs. The ROV pilots are also in charge of the maintenance of their vessels. One of the pilots discovered that he had caused the accident since he had failed to shut a valve.

Rather than stopping at this discovery, the group asked themselves how they as a collective had contributed to the failure. They reminded themselves that they had failed to follow a rule they had introduced earlier to always crosscheck each other, and that they had let the ROV be lowered into the water without a second person inspecting it. The question 'how could this happen' led them to look beyond the individual error.

An example of a *rule* that may promote the mindful execution of a task is *deference to expertise*. On an aircraft carrier, for example, researchers observed that initiative and authority for decision making migrates, usually downward, in the organization to people closest to the problem, or with the highest degree of expertise.

In one of the studies of aircraft carriers, the researchers noticed that all crew members, regardless of rank, were mobilized to respond to problems that might affect them all. A mechanic reported that he had lost a wrench, most likely on the flight deck where it could pose a grave danger to the planes. This led the officer in charge to organize a party to search every inch of the deck, mobilizing everyone from the captain to lowest ranking deckhands. This suggests a shared *value*, that operations are worthy of attention and respect.

In their discussion of mindful infrastructure, Weick and Sutcliffe identify *three principles of anticipation* that permit organizations to discover and mentally prepare for the unexpected, and *two principles of containment* that permit organizations to manage unexpected events when they inevitably hit

Preoccupation with failure

- Near misses: signals
- Confrontation and reporting rewarded
- Error and learning considered perishable goods



Principles of anticipation

The first principle of anticipation is (1) *preoccupation with failure*, meaning the habit of paying attention to deviations and error, and by default see them as possible signs of systemic problems. This is different from being negative or worried all the time. It is more a way of thinking that, for example does not treat a near miss as a victory, but a signal that something deeper may need attention, such as we saw in the example with the leaking ROV.

Also, this principle involves the realization that

error in complex systems will happen in ever new ways, and that the learning that ensues from these errors is a perishable good. Organizational practices such as reporting errors and rewarding people who own up to errors reinforce this principle.

**Avoid
oversimplification**

- It takes variety to control variety
- Blueprints treated with suspicion



People in HROs are also (2) *reluctant to settle for simplified explanations*. For example, nuclear power plants are technologically very complex, and in the best ones employees are very aware that new and unexpected events may result from that complexity.

In some plants, shifts in the control rooms are consistently composed of workers from different disciplines, so that they may monitor events from more than one perspective, following the principle that 'it takes variety to control variety'. Experience helps people in these contexts to 'have the bubble', to be able to develop a three dimensional big picture of what is going on in the reactors based on

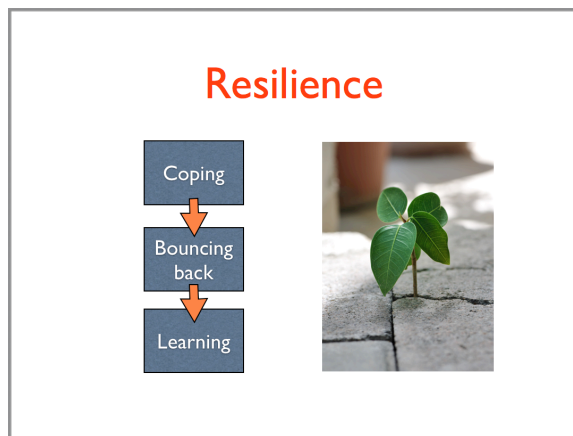
the two-dimensional readings on the control panels. In one of a plants studied, the researchers were struck by how maintenance workers often double checked blueprints by physical inspection.

HROs maintain a (3) *sensitivity to operations*, in that all levels appreciate the importance of the front line; e.g. when all officers on an aircraft carrier are mobilized to find the missing wrench on deck. Equally important is that efforts are made for all involved to understand how the totality work of the organization is conducted; e.g. when film crews systematically rotate through different positions.

**Sensitivity to
Operations**



Researchers have also found that frequent involvement of leaders higher in the operational hierarchy helps maintain a collective awareness that the reality on the shop floor or the front line often is complex and messy. This involvement provides an ongoing reminder that there is a limit to how much can be controlled through streamlined plans and procedures.



Principles of Containment

When disturbances, surprise or problems inevitably hit, mindful organizations are capable of containing them. Organization members are mentally prepared for the impact if they know that the best procedures and systems are fallible.

They can muster the (4) *resilience* needed to absorb surprise and strain in the short term, and to learn and grow in the longer term. One way of teaching people a deeper understanding of the slogan 'expect the unexpected' is to put them through simulation exercises, such as is done in some nuclear power plants.

Even in hierarchical organizations such as aircraft carriers and subsea operations, a migration of authority can take place in which the organization makes use of knowledge and capacity where it can be found. We find an example of such (5)



deference to expertise, a 'subtle loosening of hierarchy in favor of expertise'⁵ in nuclear power plants, in subsea operations and on aircraft carriers.

In many cases, authority moves down the hierarchy. In error detection and maintenance in some nuclear power plants the technicians closest to the problem have the initiative and the authority to use their discretion. Top management stay in the background but are on call in cases decisions that need involve them have to be made.

In a study of decision-making on aircraft carriers, it was found that junior officers and enlisted men exercise decision authority (e.g. to abort fighter landings) when situations are routine, but defer the decision to more experienced officers when situations are unfamiliar.

⁵ Weick and Sutcliffe 2007, page 80.

To summarize, we can highlight some of the features shared by mindful organizations. They have *structures* in place promote mindfulness. A simple example of this are the briefings that people from various teams are engaged in when they embark on a trip to carry out subsea operations. The way these briefings are set up the intent is to give all involved an overview of what's in front of them. This helps cultivate a knowledge of more than their own place in the operation, making it easier for them to take in the richness of the operation in progress.

A complex set of cultural patterns (shared values, mindsets, and tacit rules) also shape the collective mindfulness. People are able to cultivate 'a birds eye view of the moment'. Attention, like in the individual conceptions of mindfulness, is on the present and care is taken to see more than the parts. This primes people to avoid tunnel vision, and to pause at weak and unexpected signals long enough to slow down what they're doing and reassess if they're on the right course.

People in these systems typically show respect for routines and procedures, but they also know that such preplanned templates cannot be the answer to every eventuality that may turn up in the messy reality of the execution of an operation.

Acknowledgements

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Suggested reading

Ellen Langer (1989): *Mindfulness*, Reading, Mass.: Perseus Book

Karl Weick and Kathleen Sutcliffe (2007) *Managing the Unexpected, Second Edition*, San Francisco, Calif.: Jossey-Bass

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