

Learning to Interact with Uncertainty

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The lingering questions

Throughout my career I have been haunted by two fundamental questions that we face in Outdoor Education.

Question One: Why do we expose people to such unusual hazards?

The first is simply: Why? It is the first question that a grieving mother will ask when told that her daughter has passed away. It is the first question that a young staff member will ask after an eternity of unsuccessful CPR. It is the first question that a lawyer will ask in pursuing litigation. Yet, for all that, how many of us really have a solid answer to that question right now? How many of us, in the face of a grieving mother, could stand up and clearly state why we exposed her child to such unusual hazards.

Question Two: Why do some kids make it, and some kids do not, and can we influence the outcome to this question?

The second question is one that always appears in the failed aftermath of the first question. It emerges from the silent wreckage of an incident, after all the chaos of the rescue has gone away. Why do some kids make it, and some kids do not. Why are some kids killed while minding their own business asleep in a tent, while others go on to live long and reckless lives? I am not so naive or arrogant to believe that anyone of us can protect our participants from the vagaries of fate, but I do believe that all of us can influence our own destinies, as long as we know how, as long as we ourselves do not sabotage the process.

In my attempts to answer these questions, I arrived at a third question: Do we really know what we are talking about?

Question Three: Do we really know what we are talking about?

As operational risk managers, working in the context of education, we are never far from some very serious metaphysical dilemmas. As risk managers it is our job to protect our students, as educators it is our job to expose them to some sort of risk so that we can engage them in critical thinking. More and more, we are being asked to balance these two goals in such a way that we can accomplish both, without detriment to either. So, as risk managers we spend our days trying to operationalize theories that lie in perpetual conflict. Having spent the last few years trying to balance the duality of the terms "safe" and "risk" I have come to believe that like the mythical dragon eating its own tail, Outdoor Education is slowly being diminished in the process.

It occurred to me however, that it didn't need to be this way that it was possible to blend the concepts of "risk" and "safe" so that they supported one another. For this to be true, however, there must be a false assumption somewhere among our beliefs around "risk" and "safe". Sometime, early in our growth, someone must have made a simple mistake in their calculations and flawed the formula on which we base our work.

The path that led me to this talk today started off like many things, an innocuous event that throws you off your very comfortable life, in this case it came in the form of an innocuous invitation to a party. My wife had explained to me that we would be going to a party with a group of her colleagues at the University where she works. They are all marine biologists and would be talking excitedly about fish. My instructions were to behave myself, look interested, and try not to offend anyone. It is a common request from my wife. Later, during a lull in one of the fascinating conversations about fish, one of the professors turned to me and asked me what I did. I am sure many of you have been in this situation, sometimes I try to dodge the question but this time I simply answered that I was a risk manager. She paused, and then asked,

What do you mean by risk?

The Risk Paradox: Our philosophical Mobius strip

You would think I would have a fairly pat answer to this question, it being my job and all. But in truth, the current thinking at the time was that, in the context of education, risk was a paradox. We use risk as a legitimate educational tool. Yet, our number one priority was keeping kids safe. Yet safe, derived from the Latin word *Salvus*, is defined as free and secure from danger harm injury and risk...

So there I am trying to explain this philosophical Mobius strip¹ we call risk and she is staring at me like I am an idiot. Truth be told, I felt like an idiot. The next day, I decided I would sit down and figure it out, and down the rabbit hole I went. That was seven years ago.

What about Perceived Risk vs. Actual Risk...?

Now, I should stop for a moment and address those who would argue that I am over-thinking this problem. Our task, quite simply, is to keep children safe. We do that by increasing the perceived risk and decreasing the actual risk...

How many people here think that they should run safe programs? How many people believe they are safe in this room right now? What is interesting is that many of you answered the first question in a binary manner, it is black or white. Safe or unsafe. But, in the second question we had to stop and point out the exceptions and perceptions involved in the nature of the question. One of the first things I discovered in my research is that there is really no such thing as absolute safe or actual risk. They are a bit of sophistry, or twisted logic, that has been built to help us navigate an uncertain world. If you were to point out to me an "actual risk", you would by definition be pointing out a hazard. If you were to claim that this room is safe, for example, it would be easy to point out where it is unsafe. You might then respond, "*well I meant reasonably safe*"... and therein lies the problem. Everyone, from parents, to administrators to regulators have a different metric for "reasonably safe". It turns out the concept of Safe, in anticipation of an event, is entirely subjective. Only after an event is over, can we determine who had the correct perception.

At this point, some of you may be thinking "well, Preston this is nice, but on Monday morning I will be talking to parents and administrators who want our students to remain safe." I do not question this reality, I only point out that it is a reality that we have helped design for ourselves, a Frankenstein of our own creation. Except that in our case, the story will not end in our fiery destruction, but rather in a slow descent into irrelevance. The "safe" path is paved with series of subtle and not so subtle refusals and declined opportunities. Whether we want to admit it or not, Safety, is a deception that we create for ourselves so that we can sleep at night in the hope that no

¹ A Mobius strip is a surface with only one side and only one boundary component. It has the mathematical property of being non-orientable. A model can easily be created by taking a paper strip and giving it a half-twist, and then joining the ends of the strip together to form a single strip.

harm will come to us or those in our care while we sleep. Yet, harm still comes, and the sophistry of safe will never hold up in the face of a grieving mother asking “why?”

Story B – The Etymology of Risk

At this point in my research my frustration was steadily increasing. In the process of trying to find out the definition to one simple word I was steadily unraveling many of the other assumptions I had about both risk and risk management. So, I decided I would start by trying to determine how other fields define risk. It turns out that there are over 100 disciplines that have a unique definition of risk, from the military to software engineers. Not easily discouraged I came to the conclusion that there must be some commonality between the definitions, some meta-definition. What I needed to do was find an association of different risk managers and see how they defined risk. It turns out that there is an association that meets that criteria, they are called the Society for Risk Analysis and have members from all over the world, from a variety of risk management disciplines. Not only that, but they had put together a committee for the very purpose of determining a meta-definition of risk, and had published a paper on their findings. I was finally on my way to answering my question!

“Many of you here remember that when our Society for Risk Analysis was brand new, one of the first things it did was to establish a committee to define the word “risk” This committee labored for 4 years and then gave up...”(Kaplan 1997). Presented at the Annual Meeting of the Society of Risk Analysis in 1996

This is when I knew for sure that god had a sense of humor.

I will admit that I had become a little obsessed by this quest of mine, so, in 2002, I put my company on hold and was accepted to the Harvard Graduate School of Education, where I spent two years researching the etymology and epistemology of risk. This is a fancy way of saying where does the word risk come from and what does it really mean? One of the benefits of going to a university like Harvard is that they do not lack in resources. So, one day about a year into my research I am staring at two books. One is Randle Cotgrave’s *A Dictionarie of the French and English Tongues*, published in 1611. The other is Thomas Blount’s *The Glossographia*. Published in 1661 it is the first monolingual dictionary in the English Language.

Excerpt from Randle Cotgrave’s *A Dictionarie of the French and English Tongues*, 1611

Risque : f. Perill, jeopardie, danger, hazard, chance, adventure.
Je le prens à ma risque. *Hab or nab, at my perill be it happen how it will.*

45 years later...

Excerpt from Thomas Blount’s *The Glossographia* 1661

mocking, a scorning.
Risque (Fr.) peril, jeopardy, danger, hazard, chance.
Ritual (*ritualis*) of or be-

You will notice that the two definitions are different in one way; the omission of the word Adventure. To be clear, in disciplines such as insurance, engineering, medicine, the loss of

adventure in the definition of risk really doesn't matter, because there is no real benefit to risk in these arenas. You don't really want a heart surgeon to say that they are going on an "adventure" when they cut you open. In fact, if they could remove all risks from brain surgery, or the building of a bridge, it would be great!

What we sometimes forget is that over the last few centuries the social sciences, in this case education, has borrowed much of our lexicon, or collective language, from the physical sciences in order to gain academic validity. The problem, however, is that some of these borrowed words are unable to properly describe the complexities of human development or the merging of art and science that is education.

It would be Blount's definition of risk that the Oxford English Dictionary would use when they created their dictionary in 1884. Since then, most of the writing on this subject has been by economists, who have whittled the definition down to "potential for loss".

In education, however, we do not take risks in order to lose something, or even as some would argue to gain something. It is actually much more complex than that. The more challenging a hill is to climb, physically, emotionally, mentally, spiritually, the more rewarding the summit. Yet, we would be hard pressed to identify many of those rewards prior to the summit. This is why the traditional definition of risk: "potential for loss" fails as an educational definition of risk.

So, is it enough to simply put adventure back in the definition? As educators, the concept of adventure is critical to our pedagogy.

Adventure: To risk oneself, to venture (on, upon a course or action), to dare to come or go, to dare to undertake. To dare, to run the risk, make the experiment.

Adventure speaks to free will. It speaks to the fact that while we may still be surrounded by uncertainty, we can take action. It is often the defining virtue of our most cherished heroes and heroines. For, time and time again they refuse to wait for fate to deliver their destiny, but instead strive forth, without fear or anger, to intentionally become the architect of their own destiny. The school motto for most of Kurt Hahn's schools is "There is more in you than you think." Our field was founded on the idea that a group who overcomes adversity together, realizes things about themselves they could not have discovered any other way. It is at the basis of those legendary "Ah Ha!" moments that have made the experiences that we offer so meaningful and authentic. It is the simple fundamental belief that to understand our own potential we each need to take the Hero's journey. Implicit in that belief is the notion that any potential physical hazards we might face along that journey are far less significant than the potential hazards we might encounter if we refuse to attempt the journey at all.

Then somewhere along the way, the world began to change. It began to value organizational accountability over individual accountability. The Lawyers began writing the curriculum. For example, in 1986, when the board of directors of the Hurricane Island Outward Bound School fired Peter Willauer the message they were sending was clear: From now on being safe is more important than learning to be alive. Since then we have begun adopting a language to describe what we do, that does not support what we do...

Story C: The Canoeing Mystery

Several months ago, I was hired by the Board of Education of a major city in North America to help them re-examine the operational risk management systems used to manage all off site trips. This amounts to 13,000 trips a year, creating over 55,000,000 student program days. Off Site activities include everything from trips to the local museum, to wilderness backpacking trips, to spring break trips to Paris. As I was reviewing their materials it was discovered that they had experienced 3 near drowning in the last 5 years. It is these kinds of trends that often inform us of flaws in the larger

systems, so we decided to look deeper. On further discovery we found that all of these incidents happened on Canoe trips where the use of Personal Flotation Devices (PFDs) is mandatory. Initially, we thought that there may have been a set of defective PFDs. After reviewing the incident reports, however, it became clear that in every case the students had chosen to take off the PFD while the instructor was not watching.

There are numerous theories to explain why students, specifically adolescents, engage in this type of behavior. It is not new. Upon hearing about these events, the response from the administration was not new either, create more rules to stamp out the unwanted behavior and therefore reduce the “potential for loss.” In this case, however, the pursuit of “safety” misses the fact that it is the rules themselves that students are defying, more of them will not solve the problem. In addition, the more rules that you ask teachers to enforce the less time they are spending teaching students how to engage in critical thinking. Paradoxically, this often destroys the very justification that was used for exposing the students to such unusual hazards in the first place. It is stories like this that are showing us that the traditional relationship between risk management and education is breaking down.

As a consultant, however, my job was to figure out how to solve this problem. How do we manage the hazards involved in a student based program, when the students’ themselves are the greatest hazards? It would appear that the only logical solution is to somehow integrate the students into the systems, to help them learn how to interact with uncertainty in a sustainable manner. But how?

To answer this question, we have to start by addressing the language we use to describe ourselves. It is my belief that in education we need a definition of risk that supported, rather than contradicted our educational goals. Which is why I believe that the definition of risk, in the context of education, should not be “Potential for loss”, but rather: “Human interaction with Uncertainty?” Using that definition the problem can be reframed from “How do we reduce the potential for loss?” to “How do we develop the tools to help students interact with uncertainty in a sustainable manner?”

It occurred to me, however, that my experiences alone did not justify the alteration of a 400 year old definition. There needed to be a more compelling reason, and that is when I came across Ray Kurzweil’s work on the concept of accelerating change.

We are educating students during a time period where the rate of technological change is accelerating at an ever-increasing pace. Today, the average student probably sends more text messages in a day than you have in your whole life. It took the human race 1.1 million years to go from stone tools to harnessing fire, yet it took only 50 years to go from harnessing the atom to cloning. In our life time we are seeing several technological breakthroughs every decade. Each of these events results in a paradigm shift, and they are now appearing more often. Think back to what it was like before cell phones, before the internet, before cable TV. These changes are having a profound impact on the social, economic and political aspects of our lives. Our main concern with this accelerated rate of change, however, is that we are still using a brain that was designed primarily to keep us alive in the face of immediate threats.

To put this in perspective, take a moment and think about of all of the things about which you are absolutely certain.

One of the startling conclusions is it that there are fewer certainties in our life than we would like to believe. On some level, this thought should make you uncomfortable, for inherent in the construction of our own reality is the denial and avoidance of uncertainty itself. In fact our brain is constructed to do just that. We live in a type of uncertainty homeostasis or equilibrium. For example, you can sit in this room calmly accepting of the fact that the roof will not collapse or a wild animal will not suddenly enter the room tearing you from limb to limb. As a result you are still able to listen to this talk and access the cognitive or thinking part of your brain.

If I were to suddenly start introducing different types of uncertainty, intellectual, physical, emotional your brain would eventually cross a hidden threshold of uncertainty and would “shift down” from the cognitive part of the brain to the primitive one. Your brain would cease to view these uncertainties as a challenge, and instead view them as a threat.

For example, imagine that you are standing in a valley looking up at the slopes of the hills around you. In the far distance you notice that an object is starting to roll down the hill in your general direction. At first, you are simply thinking look, there is something moving this way, how interesting... Then, after a moment, you might think; “Gee, it seems rather large and sharp looking, I hope it doesn’t hit anyone.... Then, a few moments later you start to realize that in fact it is heading toward you... Once something moves from being a curiosity to a threat your brain releases hormones that tell the body "You are in danger," resulting in involuntary reactions of fight, flight or freeze, reactions that are primarily generated through fear or anger. The opposite is also true, a crisis that slowly emerges over time, such as the climate crisis, is not seen as a true threat so it is easier to take no action at all.

There are some, however, that argue that fear and anger are good things. That the sudden urge to run away from the object rolling toward you is a good thing. That is true... unless you end up running off the edge of a cliff.

More to the point, allowing fear and anger to be our primary response to uncertainty and change can also influence other more subtle situations that we face in our everyday lives by throwing up unconscious roadblocks to our normal decision making process.

Story D: Exercise: Line up by height

I want you to consider an exercise that I have done hundreds of times with a variety of populations. The exercise involves taking a group of people, 10 or so, and asking them to quickly do the following task.

“Line up by height without talking”

The response from the participants, will most likely, be as follows; they will shuffle around finding the person just taller than they are and just smaller than they are, then place themselves between those two people and stop moving.

When this happens I will then state: You appear done, now I want each of you to be personally responsible to the fact that this line is in the correct order. At this point at least half of the crowd will step out of line and start moving people around. The question we must consider is: “Why did they wait for me to hold them personally accountable?”

The hidden obstacles to reaching our potential

It is believed that one of the MANY reasons that people hesitate in socially unsure situations is due to an Affective or fear based Heuristic. It is a fancy way of describing a mental short cut. For example, when the participants heard the instructions, they had to turn the instructions into action steps. During that process, they unconsciously added another fear based rule to the exercise:

“What action can I take that will prevent me from becoming the person blamed for messing this activity up?”

The question we have to ask then is how we teach our students to manage change and uncertainty without relying on fear or anger. For our civilization cannot afford to have another generation rely on anger and fear as their primary reaction to change and uncertainty, the recent history of the United States is a clear testament to this truth.

One way to do this is to look at other fields where teams of people are working in highly fluid, high consequence environments and see how they are learning to interact with change and uncertainty. It turns out that we have been doing this type of education for years with emergency room teams, flight control personnel, litigation attorneys, firefighters, etc. What all of these groups share in common is the intentional use of simulations to provide iterative experiences in the context of a socially supportive environment? By having participants go through a simulation over and over again, supported by their other team members, trainers are able to help them identify ineffective responses to stressors and learn to replace them with more sustainable behaviors. We know from our own experiences that by increasing our level of competency in a given environment increases our ability to manage fear in that environment.

Unfortunately, while we can learn a great deal from this type of education, it also shows us our greatest challenge. For helping pilot crews improve their responses is fundamentally different to helping adolescents learn how to navigate a changing world. As a result we are left without a critical piece to our collective methodology. We know *why* outdoor education is critical, because the experiences that we offer allow students to interact with uncertainty in a manner that few other methodologies allow. We know *how* to do it. By providing iterative experiences, in a socially supportive environment, that allows students to identify unsustainable behaviors and replace them with behaviors that support their true potential. But, the problem is that we do not yet know *what* to replace those behaviors with. We do not yet know how to codify specific strategies for managing change and uncertainty without relying on either fear or anger. It is a challenge we have to overcome, for it is time that we start showing the world that our style of education is not just exciting, but critical.

Strategies for moving ahead

Today, as we try to understand risk management in our field we have to understand it from the perspective of the individual. Each of us is trying to navigate our own set of uncertainties. Both the ones that seek us out and the ones we choose to seek out voluntarily. To deal with the former we have developed multiple professional disciplines to find ways to control the technical and environmental hazards that spring out at us when we least expect them too. Over time these professionals have developed a language in which to describe the institutional risk management process that is required in our societal pursuit of “safe”. We have even subjugated some of our personal freedoms in that pursuit by simply pointing toward the remembered sorrow of losing someone in our collective care. This language however, is ill suited to address those risks we intentionally choose to take.

Like many of us I have been held hostage by the questions that I asked in the beginning of my talk. Why do we expose people to such unusual hazards and why do some kids make it and some do not. For years, I have been trying to answer those questions from the bedside of an injured child, or the grave of a friend, trying to find meaning in a language not my own. While it is true, that we cannot forget our past, or risk repeating it, it is also true that we cannot hide from the future. Change is coming, at a rate we cannot truly comprehend and the coming generations will need our form of education more than ever before. We cannot let sorrow or fear sway us from our duty to prepare them for the challenges that they will face.

For too long we have been viewing risk as something to be feared and without intending it we have passed that fear onto to our students and their parents. In doing so, we have moved steadily away from trying to teach our students, toward a belief that we should protect them at all costs. Yet, the truth is that we cannot protect them, and all we are doing is denying them access to the very skills they will need to move from relative security into adventure. To learn how to manage the exceptions, paradoxes and mysteries that makes the authentic life so rich and rewarding.

It is time that we stop asking how we might best protect the students in our care and start asking how we can best empower them to protect themselves. To help them understand that while often

important decisions are made with too little information, too little time and too great a consequence, there are paths other than fear and anger that can move them toward realising their own goals. It is time to remember that our duty is not only to those that we have lost along the way, but also to those who have not yet arrived. It is time to replace fear with hope, and it is up to us to find the courage to turn hope into action.

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