

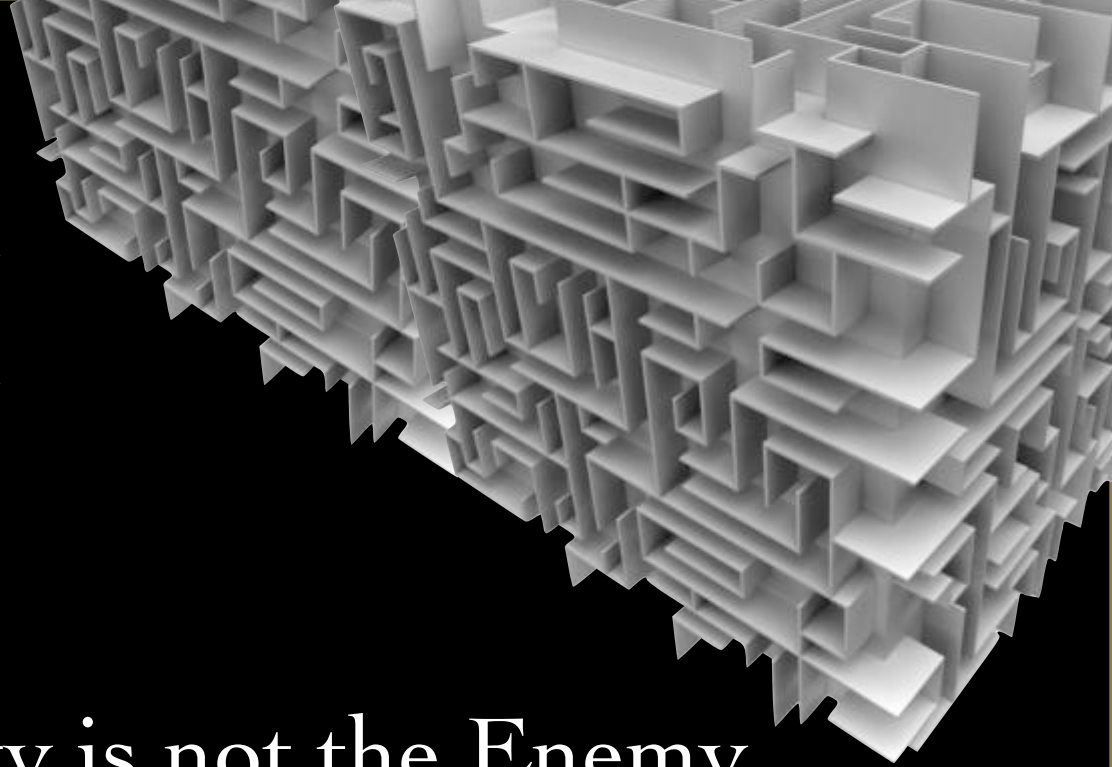
# The Uncertainty Principle

Understanding  
and Coping with  
Uncertainty in the  
Age of COVID-19

**Thomas Koulopoulos**

# Foreword

*A white paper version of this ebook was originally distributed for Delphi clients in 2002 after the dot-com crash and updated in 2008 as an ebook for the Great Recession. It is being redistributed without major updates\* during the COVID-19 pandemic. While it was written nearly two-decades ago, and it does not discuss the pandemic, its themes will strike deeply resonant chords for anyone struggling through the current period of uncertainty.*



## Uncertainty is not the Enemy

In a conversation I had with Peter Drucker, the father of modern day management, in the wake of the 9/11 attacks, we talked at length about the cyclical nature of uncertainty. He felt that we were entering a prolonged period of uncertainty that would test many businesses. But he also felt that it was a cycle that could be understood and navigated.

There has been so much talk about uncertainty lately that it has become somewhat of a whipping post for everything that ails us.

Despite the disparaging and often negative views applied to uncertainty, uncertainty itself is not the enemy. Rather, history bears

out that a climate of uncertainty creates some of the greatest opportunities and periods of innovation, which are quickly followed by periods of high prosperity.

Often it takes a crisis of extreme proportions to bring us to the brink of breakthrough opportunity. Ironically, uncertainty often spurs creativity that is impossible to find in times of prosperity. It is a human condition that we do not feel the hunger of innovation as keenly when our bellies and wallets are full.

Yet, this does little to allay our current day anxiety. The pace of uncertainty seems daunting. The

reality is simply this, we need to accept uncertainty as a permanent part of business and life. It plays a role in creating opportunity and in providing a platform for innovation and renewal.

Most of all, uncertainty brings with it new and entirely unexpected possibilities that we inevitably cannot live without—perhaps could not even have survived without.

A certain world may be what we want and what wish for but it is not what we need and it is not what we have.

We may never harness uncertainty but we can learn to accept and leverage it.

\* Minor updates have been made for corrections, readability, the section on SBP, some graphics, and the back cover.

"You don't need a weather man  
to know which way the wind blows."  
—Bob Dylan

# The Winds of Change

April 19, 1775, a crisp spring New England day. Rows of British soldiers in bright red coats line the rolling green of Lexington, Massachusetts. In their mind, there is nothing foolish in so openly and predictably approaching a rendezvous with their enemy. Their order and discipline is intended to intimidate the opposing colonists. Lines of well-armed British

soldiers will precisely fall into sequence and unleash a fury of musket fire across the battlefield, the equivalent of a wall of lead, decimating the colonial militia.

Yet the order of the moment is exactly what the ill-equipped band of colonists need in order to demonstrate the value of uncertainty. Scattered among the trees and bushes is a ragtag team of what can only in the loosest use of the term be called an army. The colonists follow no rules other than to be fully opportunistic in their approach to battle. As they crouch behind trees, rocks, and tall grass, one by one they picked off the brightly garbed Brits who could not react quickly enough to the uncertainty of this new battlefield.

At the time, such tactics were anathema; a disgrace to the culture and tradition of modern warfare. But they worked.

Today an imposing bronze statue stands on Lexington Common memorializing uncertainty as an edge and an opportunity in the face of insurmountable order and precision. The ragtag colonists' very name speaks volumes to how uncertainty is

intimately tied to time—the *Minutemen*.

To borrow from the Minutemen's tactics we will use the phrase *The Uncertainty Principle* to describe a simple and elegant phenomenon: as uncertainty increases, the time to react decreases.

At the core of the uncertainty principle is an essential framework (Figure 1) that illustrates what I refer to as the decision curve. The decision curve represents the time to react given the velocity of uncertainty in a specific situation. The greater the velocity of uncertainty, the faster organizations need to react.

Though this sounds simple, it is counterintuitive. When uncertainty increases people don't want to speed up, they want to slow down, thereby inflating their decision curve. The reason for this is that most people want to take more time to consider their options in times of uncertainty rather than act rashly in haste.

The objective of this e-book is to introduce you to a set of principles, which, if understood and applied correctly can be used to turn the chaos of uncertainty into opportunity for growth and prosperity.



## 4 - THE UNCERTAINTY PRINCIPLE

*The greater the velocity of opportunity and the level of uncertainty, the faster organizations need to react. Though this sounds simple, it is counterintuitive.*

# The Curve of Indecision

These principles can be distilled into a few quick observations that will frame our discussion of uncertainty:

- 1. Uncertainty creates opportunity.**
- 2. Uncertainty increases as the volume of information increases.**
- 3. Times of uncertainty require stronger bonds of trust to navigate.**
- 4. Uncertainty demands patient, committed leadership and a long view to see beyond the near-term turmoil to the opportunities that will evolve.**

### Uncertainty Creates Opportunity

One of the most basic responses to an uncertain situation is to be far more conservative in our actions. The irony is that uncertainty requires decisiveness because the volatility of the environment (economic or otherwise) decreases the duration of each opportunity and the time available to act on it.

Think of the simple but extreme example of timing the stock market. When the market was certain for prolonged durations everyone thought they were a trading genius. Today, the risk of uncertainty has prompted a sustained mass-market exodus. Yet the rewards of economic opportunity are still there, albeit in myriad rapid market fluctuations.

Similarly, if you look at periods of high innovation that have resulted in products and services of sustained value, many of these periods have begun in times of high economic and geopolitical uncertainty.

Consider some

simple and obvious examples such as the space race against the backdrop of the cold war or the enormous post-WWII boom in technology innovation. There is

To deal with the high degree of uncertainty in combat situations modern fighter aircraft are highly responsive and maneuverable. However responsiveness and speed comes with a price, the constant split second adjustments needed to avoid instability.

To control the plane and also focus on strategy, combat tactics, and mission objectives pilots rely on the use of onboard computers that control flight surfaces and make subtle adjustments in time frames that a human could never keep up with.

Today's knowledge workers are in a similar situation. The rate of change and the short duration of each opportunity requires a level of

responsiveness that not only requires new technologies but new tools and behaviors, such as SBL\*, which are built for an age of persistent uncertainty.

\* Scenario-based Planning  
see page 18

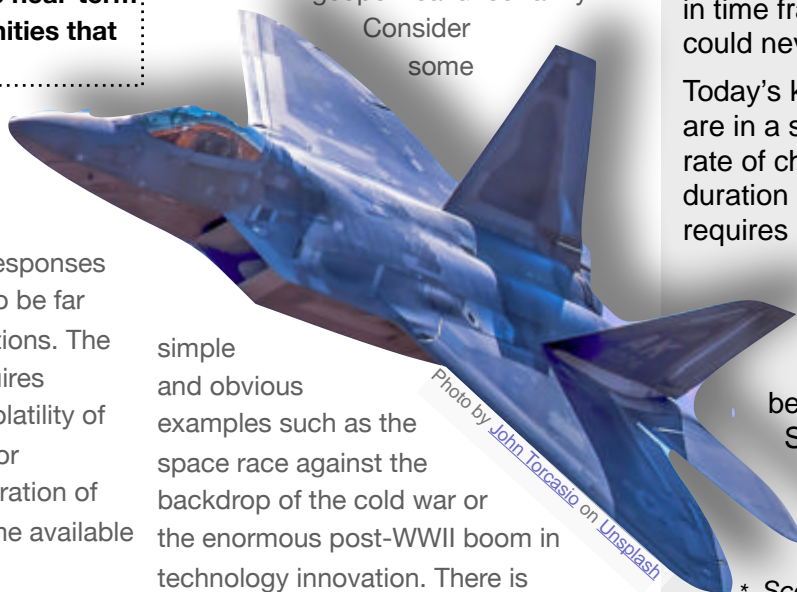


Photo by John Torcasio on Unsplash



## 5 - THE UNCERTAINTY PRINCIPLE

*There is clearly something about uncertainty that causes organizations and society to dig deep into their collective capacity for innovation.*

# Uncertainty and Opportunity

clearly something about uncertainty that causes organizations and society to dig deep into their collective capacity for innovation.

### Uncertainty Increases as the Volume of Information Increases

Intuition tells us that the more we know about something, the more certain we should be about it. In practice, things are usually much more complicated and the inverse is most often true. As we learn more, our certainty is often challenged. The more information available the greater the amount of time needed to reach decisions. The nagging question is not how much information can be gathered, but rather what information is needed to support effective decisions within the available window of opportunity.

### Times of Uncertainty Require Stronger Bonds of Trust To Navigate

At a very base human level uncertainty creates an elevated need for community and trust. In times of heightened uncertainty, individuals seek out relationships and sources of

trusted advice, counsel, and partnership. These provide a sort of safe haven and allow people to exercise some degree of control over what is otherwise an uncontrollable situation.

This trust can take many forms from social to personal to professional relationships.

One of the best historical examples of how we try to create certainty in an otherwise uncertainty world is that of contracts. Contracts



**Figure 1 - The Uncertainty Principle** illustrates the relationship between the level (velocity) of uncertainty and the time to react. The natural inclination of most people is to take more time to consider their options when uncertainty increases. However, the best thing to do is to act faster in order to make decision within an ever closing window of opportunity.

*A leader's job is not to pick the right course by predicting the future, but rather to get agreement from those they lead that the path, once chosen, must be made right.*

# The Trust Factor

form a foundation of reliability in free-market economies that allows us to predict some aspects of the future.

Peruvian economist Fernando de Soto has written extensively on the critical role that indisputable property rights play in the formation of capitalist economies and how the lack of these rights in developing countries undermines prosperity and commerce. In the same way, contracts provide a security in the future that offers a

certainty in outcomes and allows us to plan with predictability.

## Uncertainty Demands a Long View

What is most important for leaders to understand in times of uncertainty is that their greatest challenge is not to pick the right course by predicting the future, but rather to get agreement from those they lead that the path, once chosen, must be made right. Leadership must absorb the

uncertainty of the moment and focus people on progress toward specific goals. Like our fighter pilot, leaders need to focus on clear mission objectives despite the inherent instability of their markets, economies, and organizations.

## The Take Away

As uncertainty increases the time to react decreases. Look for ways to increase your and your team's responsiveness by avoiding the temptation to flood people with too much information, increase bonds of trust, and step up to the mantle of leadership by taking the long view and helping your people focus on clear objectives.

Quick, what do all of these companies have in common?

GE	Allstate Insurance
HP	Burger King
McDonalds	Hyatt
FedEx	Microsoft
Apple Computer	CNN
MTV	Cliff Bar
Method (soaps)	

See bottom of page 21



# Embracing Uncertainty

The job ahead is not to eliminate uncertainty but rather to answer the question, "How we can best operate inside of it?"

To answer that it helps to better understand some of the cornerstones of the uncertainty principle through four lenses:

- 1. The Emotional Impact of Uncertainty**
- 2. The Foundation of Uncertainty In Economics**
- 3. The Origins and the Scientific Basis for the Uncertainty Principle**
- 4. The Changing Doctrine of Organizing for Uncertainty**

## 1) The Emotional Impact of Uncertainty

Any certainty is better than uncertainty. Uncertainty is tedious. It exacts a heavy toll on individuals and organizations as it undermines confidence in our ability to prepare for

the future. Uncertainty is disorienting. It takes away our visibility, the liquidity of our assets, and our situational awareness, leaving us tired and confused.

Certainty, good or bad, can be planned for; it can be priced into markets, it can be built into financial and behavioral models, and it can be anticipated. We can adapt our businesses, our institutions, and ourselves to virtually any sort of certainty, no matter how distressing. For all of those reasons, to regain certainty we will do almost anything.

## Uncertainty Games

To better understand the emotional toll of uncertainty consider for a minute a game that you would associate with uncertainty. Chess is undoubtedly a game that comes to mind. After all, chess is a complex game with nearly incalculable moves. Furthermore, chess is perhaps one of the most popular game analogies for business, especially in cases of negotiation and strategic decisions.

Chess, however, is not representative of uncertainty. Chess is a closed system; the number of moves

is large ( $10^{100}$ ) but it is not infinite. And every game piece on the chessboard has to follow rigorously prescribed moves. The bishop cannot suddenly decide to jump over a pawn and move vertically across the length of the chessboard. No matter how complex the combination of moves may be, each move is clearly detailed in a predetermined and agreed-upon set of rules.

So, try again. Can you think of a game that would be governed by the forces of uncertainty? What about poker? Again, the rules are clear. There is an element of chance or risk involved with the cards you draw or discard, as well as the way you play your hand. You can bluff and force your opponent to operate based on a fear of the unknown. But there are only four aces in the deck and if you have all four there is no chance that your opponent will pull a pair of aces. Your risk can be calculated and your wager gauged accordingly.

Poker and chess are not examples of uncertainty but of risk. Risk is critical to understand and measure when making good decisions, but it is not the same as uncertainty. Uncertainty results from doubt,

*The answers to uncertainty will not be found by relying on accountants to bury our heads further into the denominator of our businesses*

# Uncertainty Games

mistrust, and a lack of confidence in observable phenomenon. Uncertainty is not calculable, arithmetic, predictable, or probabilistic. Uncertainty defies what you know.

Consider the example of poker again. What would happen if your opponent did draw the same cards you had? You would have several choices of reaction:

- Confront him as a cheat, casting doubt on his or her integrity.
- Lose trust in the deck itself (were there really fifty-two cards?).
- Question your own judgment and double-check your observations (did I really have four aces in my hand—does she or he really have two?).

More than likely you'd experience each of those emotions in quick succession. Uncertainty cause us to become suspect of everyone and everything.

Uncertainty cannot be divorced from emotion; it is fundamentally an emotional, not a logical, state of mind.

Uncertainty results in loss of control, adoption of a defensive stature, and the inevitable ascription of blame.

It is this lack of a defined road map that causes the frustration, anxiety, and fear associated with uncertainty. Human beings are programmed to deal with the known. Evolution, genetics, and instinct have all worked to incorporate lessons from our environment into our behaviors.

When these lessons no longer apply, when the environment so radically changes as to no longer map to our responses, we cross into the panic zone of uncertainty.

So, is there a game of uncertainty? There are none. No matter what game you choose there are rules that have to be followed. By definition a game is “a competitive activity or sport in which players contend with each other according to a set of rules.” Therein lies the problem. Uncertainty is not marketable. Nobody wants it. Can you imagine trying to sell a game where a player could arbitrarily change the rules at whim? Who would buy it? People play games because they want to believe that they can out-skill or outwit their opponents.





## 9 - THE UNCERTAINTY PRINCIPLE

*What is it about the lack of resources and capital that is so essential to creating a fertile soil for good idea to grow and thrive?*

Play monopoly with a five-year-old and you'll soon find out why a game with subjective rules would not get too far. Yet this is the essence of uncertainty. It is thrust upon us and our immediate response is to thrust back, to say under our breath, "Damn it—play by the rules!"

### 2) The foundation of uncertainty in economics

Although you might expect uncertainty and economics to be a combination of topics that is a much more recent discussion, its roots go back to nearly the start of the twentieth century and an obscure economist.

The year 1921 was a period of profound global change. World War I had exacted a heavy price from the industrialized nations of the time. Yet it had also provided one of the greatest periods of change, prosperity, and innovation in modern history. Now, nearly 100 years removed from these events, we identify the period in simplistic terms, with a few cornerstone events. But these mask the great sense of transition that was

being experienced. While we may romanticize the period of the Roaring Twenties and the wistful lives of its Gatsbyesque socialites, there was much to lose sleep over.

Uncertainty was looming large for these early twentieth-century citizens. Consider that this was a time when organized crime became rampant due to prohibition. Women had just been given the right to vote. The first radio station had taken to the airwaves. It was a time of irrational jubilation, which ended in the stock market crash of 1929, the Great Depression, and finally culminated in the global conflict of WWII.

Onto this stage walked economist Frank Knight. Knight was a contemporary of another influential economist of that day whose name is much better known, John Maynard Keynes. Both Keynes and Knight focused much of their time on the issue of uncertainty. But while Keynes was busy detailing the mathematics of economics, Knight was attacking the subject from an entirely different perspective, looking at the behaviors that define our interaction with the world of risk, uncertainty, and profit.

In 1914, Knight wrote a doctoral thesis at Cornell that later became one of the cornerstone books of the Chicago school of economics, *Risk, Uncertainty and Profit*. The work was hardly noticed at the time, and will probably not strike a chord of familiarity unless you are a diehard student of economics; and even then the recollection may be faint. Yet Knight's observations are foundational to the discussion of uncertainty.

Knight's approach to economics was unorthodox, but his premise was profoundly simple: *uncertainty is the absence of future knowledge*. From this, Knight constructed a complex view of the many ways in which uncertainty is factored into our lives, going so far as to state that the very role of consciousness is to give living beings "knowledge" of the future.

Today the term Knightian economics is often associated with the description of situations where no amount of information can create greater certainty about an event. This is perhaps the most counterintuitive aspect of Knight's work.

After all, if uncertainty is the absence of knowledge about the future, shouldn't there be some

# The Chicago School

amount of information that would rectify the situation? In a Knightsian scenario, such knowledge can only be gained by experiencing the event, but not beforehand. In fact, more information in such a situation only leads to delayed decision-making and lost opportunity. We should point out that Knight is careful to differentiate between the probabilities inherent in risk and uncertainty. Risk can be assessed through either knowledge of similar past events or the known probabilities of a set of possible events.

If you are rolling dice, the probability of any one of the six sides of each individual die coming up is identical. We can therefore assess the likelihood of rolling a number without any actual experience or observation. This is what Knight called a priori probability. On the other hand, actuaries know from experience and data from the past what the likelihood is of a person living to a particular age, or a house burning down. Knight called this statistical probability. Most economics will factor one of these two approaches into attempts to model an economic behavior.



However, although you can buy an insurance policy on a building, you cannot predict when or if that particular building will burn down. No amount of information will provide that knowledge. To put it in a sentence, risk results in an insurance company's profitability. Uncertainty results in its downfall.

To Knight this sort of irresolvable uncertainty was the essential ingredient in all forms of commerce, without which competition, entrepreneurship, and free enterprise would not be possible. According to Knight, *"The more important task is to follow out the consequences of that higher form of uncertainty not*

*susceptible to measurement and hence to elimination. It is this true uncertainty which by preventing the theoretically perfect outworking of the tendencies of competition gives the characteristic form of 'enterprise' to economic organization as a whole and accounts for the peculiar income of the entrepreneur."*

You can probably see why Knight's work never made it into the mainstream. This is hardly the prose that bestsellers are made out of. But while Knight may have been less than accessible to the average reader, a group of even more radically inclined young Turks were about to cement uncertainty's place as part of the

*What they suggested created a schism for the scientific community not unlike what resulted in the early 1500s when Copernicus asserted that Earth was not the center of the solar system.*

# The Uncertainty Rat Pack

foundation of the way the universe works with theories that would make even Knight's work understandable in comparison.

## 3) the Origins and the Scientific Basis for the Uncertainty Principle

Uncertainty can't be discussed without at least briefly delving into some of the legacy behind the uncertainty principle, namely, quantum mechanics.

My purpose here isn't to delve into physics, but rather to tie an important thread into our discussion and to illustrate how uncertainty is not woven into the very fiber of the universe but increasingly a part of every modern day discipline.

The bedrock of certainty in a set of irrefutable natural laws was shattered at the beginning of the twentieth century by a cadre of young physicists with names such as Bohr, Heisenberg, and Schrodinger. What they and thier peers suggested created a schism for the scientific community not unlike what resulted in the early 1500s when Copernicus asserted

that Earth was not the center of the solar system, as had been thought for 1,400 years.

So what did these young Turks of physics suggest to cause such a sea change? Simply put, that there was an absence of absolute certainty in certain behaviors of subatomic particles.

To simplify this, we can use the earlier example of the poker game in

which your opponent draws some of the same cards that you thought you had in your hand. By way of analogy, Bohr, Heisenberg, and Schrodinger proposed that it is not the cards but the way you look at them that matters in deterring which cards you are holding.

So, what is quantum uncertainty and how does it tie into our discussion of the greater uncertainty that challenges us in the world?

The story begins in 1900 when a young physicist named Max Planck discovered that light energy is transmitted in what he called quanta — what we today call a photon.

What was peculiar about quanta was that they behaved differently depending on how you looked at them. If you looked at them as particles, they behaved as particles. However, if you looked at them as waves of energy, they behaved as waves.

Light had always been the wild card in the field of physics. It couldn't be touched or contained in the tactile way that matter could. Thus, it was okay for light to be a bit quirky in how it behaved. But in 1913, another physicist, Niels Bohr, took this



Werner Karl Heisenberg  
By Bundesarchiv, Bild 183-R57262  
<https://commons.wikimedia.org>

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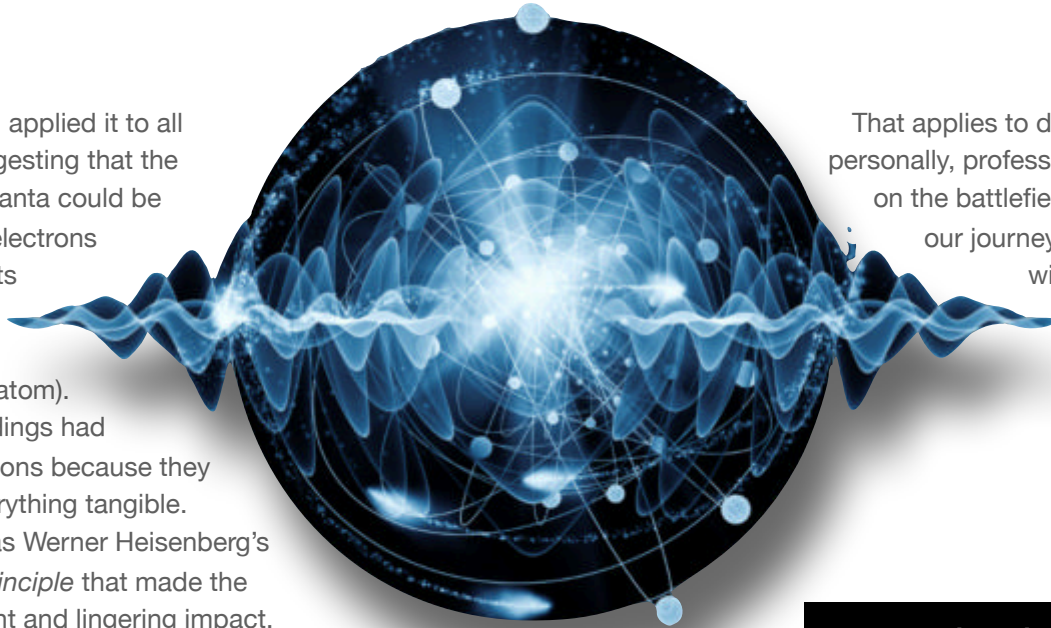
*It is a world of change in which we live, and a world of uncertainty.”*  
—Frank Knight, 1921

quirkiness and applied it to all matter by suggesting that the principle of quanta could be applied to all electrons (the tiny objects that orbit around the nucleus of an atom).

Bohr's findings had many implications because they applied to everything tangible. However, it was Werner Heisenberg's *Uncertainty Principle* that made the most significant and lingering impact.

In its simplest form, without getting mired in complexity, Heisenberg's uncertainty principle stated that you could not simultaneously know both the momentum and the mass of a quantum object with absolute precision. You could only predict the probabilities of both no matter how much information you had available. And the uncertainty of the actual state of the quantum object increased as the interval of time for measurement decreased.

I am admittedly reducing the deep complexity of Heisenberg's work to a grade-school-level explanation. However, the elegantly simple premise



That applies to decisions made personally, professionally and even on the battlefield, which is where our journey into uncertainty will take us next.

### The Take Away

that uncertainty increases as the time to react decreases is the central theme of decision making in any situation where we lack predictability in a specific outcome.

It may seem a stretch to tie the science of uncertainty to what we experience on a day-to-day basis in our lives and our businesses. Admittedly, the subatomic behavior of quanta may well be of little significance in how we run our businesses, but it does add to the larger narrative of how uncertainty has increasingly become part of nearly every aspect of how we describe and understand our world.

Uncertainty doesn't follow the rules we are familiar with and which we expect. That takes an enormous emotional toll on most people as it erodes trust in systems, people, and even our own abilities. However, uncertainty has increasingly become part of the way in which we describe and understand the cornerstone principles of many disciplines, including economics and science. If we discount the importance of managing uncertainty in our lives and our organizations we are also neglecting an increasingly important part of our ability to plan for the future.



## 13 - THE UNCERTAINTY PRINCIPLE

*To put it in a sentence, risk results in an insurance company's profitability. Uncertainty results in its downfall.*

### A New Doctrine Emerges

In writing this ebook a friend introduced me to General John Croker, one of only five senior mentors in the U.S. Air Force tasked with training three- and four-star generals on military doctrine. I had the opportunity to interview General Croker on the military's attitudes toward uncertainty and how they have changed over time.

By way of background, it helps to understand a bit about the recent history of how the military handled the increase of uncertainty in the modern battlefield.

There has probably never been a global organization of the scope and scale that was formed by the allies during World War II, and certainly none as critical in its mission and outcome. The creation of a massive military machine, the confluence of myriad new technologies for warfare, communication and intelligence, the challenge of dealing with simultaneous global conflicts in multiple theaters, and a network of global allies all



presented a daunting scenario of coordination and control.

All of this was set against a backdrop of immense uncertainty. It is difficult to fully appreciate the magnitude of this challenge today, but walking through the Cabinet War Rooms of London—the underground bunkers that Churchill and his cabinet

used during the bombing raids on London—you get a much better sense for the absurd proportions of the task.

The tools and techniques that the allies used to coordinate and communicate are amazingly primitive by today's standards. It seems unthinkable, for instance, that a military organization of any scale,



*...don't fall in love with the plan.  
Fall in love with the process of planning.*

# Planning for the Uncertainty

much less the one responsible for the war machine of World War II, could have been run by tracking planes, tanks, and troops on a wall map with pins and thread. Yet the nerve center of Churchill's war room was just that, a primitive process prone to enormous uncertainty, misinformation, delays, and error.

In its own experience the United States reeled from the devastating attacks on Pearl Harbor, which by many accounts were the result of a lack of coordination and communication among the various sources of intelligence already available.

If we today shudder at how the allies and the free world survived and succeeded in WWII, given the lack of sophistication and technology available, we should take pause. Our memory of recent terrorist attacks in the United States and around the globe are warning again that we need to raise the bar for how we deal with a new level of uncertainty.

One very visible aspect of this is found in how the military is changing to react to increased complexity in global communication and coordination. Here, too, we are not

dealing with a new phenomenon. Not unlike the crisis of communication that spurred the formation of the Department of Homeland Security in the aftermath of the terrorist attacks on the United States in 2001, there was a similar crisis of communication that needed to be addressed after the end of World War II. The result was an effort to consolidate US military services under one command and to create military and civilian intelligence agencies that would collaborate and share information to increase the effectiveness of the military. In many ways the modern military had its origins in this moment of retrospection and the National Security Act (NSA) of 1947.

To offer a front-lines sense for how these changes are shaping the military, and to uncover some lessons that we might also apply to our own organizations off of the battlefield, I asked General Croker to describe some of the specific ways in which military doctrine is being recast to deal with uncertainty. Here is some of what he had to say.

**TK:** How do you get people to accept the higher propensity for failure

needed to take risks in times of uncertainty?

**General Croker:** "First of all, the person who's making the predictions has to face a group of people to study this and anticipate and make predictions. And if they were not batting 100 percent you'd penalize them. So they learn to keep their mouth shut and they don't make predictions unless they have very high confidence they are right. They look in their rearview mirror to tell you what did happen rather than looking down the horizon beyond their windscreen to tell you what's going to happen.

"So, you have to train people and their supervisors to accept that people are going to make errors, and then what you want them to do is not make errors but learn from the errors they make so that they refine or improve their ability to make predictions based on experience. You can do that in the real world and you can also do that through exercises and simulations. But both the leader and predictor have to come to understand that it is safe and rewarding to make predictions. And it is desirable to learn from the errors in those predictions so that you gradually

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*We tell our operational commanders that they should spend between 5 and 10 percent of their time in current operations and 90 and 95 percent of their time on future operations.*

bring the bell-shaped curve closer to the x-axis. Or move the whole x-axis out to the right if you want to use that analogy, so that everybody on the bell-shaped curve is better at it than they were before.

“Mark McGwire gets \$34 million to bat .295. Yet, we’re expecting people to be at 995 or 1,000 instead, and so when they make mistakes they either get fired or let go or hammered. So that’s number one.

“Number two, I think that you can plan for uncertainty. I think we in the military do a very good job of it.

“Now remember, don’t fall in love with the plan. Fall in love with the process of planning, because then you get a shared understanding of where the boss and the corporation are trying to go.

“George Patton once said something along the lines of, ‘I don’t want a brilliant or a perfect plan. But what I want is a reasonably good plan that’s well-rehearsed that everyone understands.’

“So when, the enemy makes a move or another corporation or competitor makes a move and you see

you’re at a decision point, you have already planned for that eventuality. Maybe not perfectly, but you’ve anticipated that that outcome could happen.

“A lot of people don’t use the planning process methodically. Even though it’s uncertain, you can narrow down the range of uncertainty. Try to stick to a number of different outcomes, pick a number. Then do some planning for each of those various outcomes in advance.

“If the outcome happens or if something suggests the outcome is about to happen, then you’ve already got a rough plan in place and the boss’ guidance to help you deal with it. In the military, we have done a wonderful job at that—although perhaps less so in the first case of not killing the messenger—we’re still learning on that one.

“It’s also important to point out that there’s a difference between uncertainty and zero knowledge. Pick a range of alternatives and plan for those. Plan different budget lines and different actions and different

marketing strategies. When these eventualities come to pass or start to, you have an action plan in mind for how to deal with it.

“The third thing we’ve done is experiments and exercises where we developed some concept of how we’re going to deal with the future and roughed it out to see how well it works



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*We need to train our leaders to accept that people are going to make more errors as they enter realms of higher uncertainty.*

out in our war game or our simulations. Then we refine the concept based on the mistakes we've made.

**TK:** This really shifts this whole notion of situational awareness. It puts a distinctive process orientation into our situational awareness. Doesn't it?

**General Croker:** "Right. Process, process, process, process. We tell our operational commanders that they should spend between 5 and 10 percent of their time in current operations and 90 and 95 percent of their time on future operations and future plans. They add value not by fighting today's fight. Our bottom line is you, as an operational commander, add value by setting the conditions for your components to succeed. I would say that the percentage of time that the senior operational people devote to the future is absolutely critical. And that has been an important part of our training."

General Croker's observations on uncertainty apply well beyond the scope of the battlefield. They speak directly to the ways in which all our organizations will need to transform themselves in order to counterbalance the heavy weight of uncertainty.

Here's a short summary of his observations.

1. **Organizational structure has to allow for flexibility and rapid agility** but this also can create the risk of "driving in front of your headlights," where an organization is operating with near-zero visibility. To operate in this way, organizations and leaders must accept a new level of risk and experimentation and put in place quick response mechanisms in order to instantly redirect resources. Much of this will depend on how well established and sophisticated the process methods and infrastructure you have in place are for the opportunity or challenge at hand. In a global setting, as on the battlefield, the challenge is compounded by the application of these processes

outside of localized, well-controlled environments.

2. **We need to train our leaders to accept that people are going to make more errors as they enter realms of higher uncertainty and lower visibility.** We need to put in place tools by which they can quickly learn from these errors so that they refine or improve their ability to make predictions based on experience, from the vantage of an organization.
3. **Don't fall in love with the plan. Fall in love with the process of planning,** and do this across all levels of the organizations. In this way when uncertainty strikes and the hierarchy is not there, the team in the field can take initiative and respond. In a global organization this is especially critical because the nature of separateness and disconnection is an inherent part of how teams will need to work. Remember George Patton's quote, "I don't want a brilliant or a perfect plan. What I want is a reasonably

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*The disturbing aspect of quantum uncertainty is that you would consider subatomic particles to be closed systems, bringing into question just how many of what we consider to be closed systems really are.*

good plan that's well-rehearsed that everyone understands.

4. **As a leader, spend between 5 and 10 percent of your time in current operations and 90 to 95 percent of your time on future operations and future plans.** Your value is not in fighting today's fight. Leaders add value by setting the conditions for success. As uncertainty rises, we need to make sure that our focus on future operations also increases.

5. **Make sure that "you're speaking a common language and have trust and confidence in one another."** For global partnerships there can be no greater call to action than this. Establishing a level of confidence and trust within extended teams is foundational to mutual reliability, shared expectations, and peak performance.

6. **Performance feedback is essential to building processes that are agile.** The alternative is that processes

become stale and new partners learn outdated behaviors. Remember what Mark Twain said, "It ain't what you don't know that gets you into trouble. It's what you know for sure that just ain't so." Use senior mentor or trainers that are knowledgeable in this subject and observe people and give them feedback as they proceed, as they are being trained and as new partnerships are being created.



*...through each era of uncertainty tremendous advances have surfaced, opportunities were seized, and great innovators rose to the challenge.*

# Seeing Uncertainty Clearly

## An Uncertainty Plan

General Croker's comments and insight give us a foundation for moving forward in building organizations that can effectively plan for uncertainty. To do that we'll build on his idea that we "shouldn't fall in love with the plan but with the process of planning."

Developing that sort of a culture begins with leadership.

In the wake of the 9/11 attacks Delphi Group conducted a broad survey of nearly 3,000 professionals that was intended to identify the impact of uncertainty and ways that businesses could mitigate its negative effects on workers. While the survey results aren't available online, as it was conducted over 20 years ago, I remember that one of the questions asked respondents to pick a single factor that most alleviated the negative effects of uncertainty.

The overwhelming majority chose trusted leadership over a variety of other choices, including access to information, capital, media/news, assurances of personal safety from the government, and even the ability to foresee future events.

Your role as a leader is not to sugarcoat or sidestep the truth. It's also not to predict the future. Instead your role is to provide a protected space for those you are leading to feel confident in dealing with the implications of uncertainty.

## An Uncertain Scenario

So, how do you do that? I've found one technique to be extraordinarily effective in going beyond the dogma and providing people with a tool to navigate

uncertainty with confidence. It's called scenario-based planning (SBP).

Scenario-based planning is one of the least-often used tools, and even when it is used it's rarely used correctly. SBP is an exercise in which you identify a variety of threat or opportunity scenarios and then play each one out. The intent of SBP is not to predict the future; it's not even to identify all possible futures. Instead, the most valuable part of SBP is that it develops an organizational muscle that inspires confidence in dealing with uncertainty.





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There are myriad ways to conduct SBP, but the most important thing to keep in mind is that you need to clearly define the dimensions of the challenge. Then identify at least six ways that each dimension can manifest itself. In other words, if you run a coffee shop one dimension will be the loss of adequate inventory. But that can likely be broken down into the type of inventory (coffee/tea/milk/alternative drinks), the geography of the inventory (African/Latin American/domestic), the storage of the inventory (in-store/brewery/warehouse). So, visually, your dimension (column) is Inventory and your categories (rows) are Type, Geography, and Storage. (A full SBP matrix should have about eight columns and six rows.)

Here's where SBP gets interesting. Once you have built a full matrix of the problem dimensions and ways each

dimension manifests itself, you then create randomized scenarios that cut across the matrix by picking one cell at random from each column. At first, these random combinations will seem nonsensical, but the point here is to build a capability to deal with even the most ridiculous outlier scenarios. I've seen this work in virtually every industry, from cybersecurity and insurance to automotive and healthcare

What I've observed firsthand over decades of teaching SBP is that organizations that do it regularly are able to deal with uncertainty much better. They think more creatively, pivot faster, and instill confidence in their people.

Most important, they provide a way to take back some degree of control and confidence in what is usually a situation where people feel they've been robbed of both.

### The Take Away

While we cannot predict the future we can develop a culture that has confidence in its ability to deal with uncertainty. To do that we need to provide a protected space for people to make inherently risky decisions with the knowledge that mistakes are inevitable when dealing with the unknown. We can also use tools such as scenario-based planning to build an organizational muscle that can handle uncertainty with confidence.



## 20 - THE UNCERTAINTY PRINCIPLE

### The Journey's End?

So, have we arrived at the end of our journey into uncertainty? The truth is that we've only started.

We have in the course of 100 years come from thinking we knew everything there was to know about the world, from feeling we would be able to predict the implications of our actions, technologies, and organizations, to an intimate appreciation for the role uncertainty plays in our success.

Life has always been inherently uncertainty, but the speed with which it is today making itself part of our day-to-day lives and professions means that we have to reconsider how we build organizations that can withstand its constant buffeting. This will be as true in the boardroom as it is on the battlefield.

Hopefully the ideas in this ebook help you to look at uncertainty in a new light and with a new sense of opportunity, and an understanding of how you can navigate uncertainty in the process of planning for the future.

Take heart though, as Drucker observed in my conversations with him, there are periods during history when the future is

completely obscured by the haze of the present; times when we struggle to see the shapes and images forming right in front of us. Times when old well-understood rules are thrown out en masse to make way for new ones which we've yet to grasp, much less master.

The fact is that we are living in one of those eras and likely will be for some time. It is a trying and tedious moment for many, measured in real economic and human terms. But we have been here before. The uncertainty of world wars, the uncertainty of the cold war, the uncertainty of the great depression, the attacks of 9/11, and so many more instances when we have been, and will be, challenged by uncertainty.

What remains clear is that through each era of uncertainty tremendous advances have surfaced, opportunities were seized, and great innovators rose to the challenge, providing greater resiliency for us to weather the storm.

The challenge today, as it always has been, is to find the opportunity that we never would have known to look for.

The final take-away is simple. Uncertainty may not seem like a friend. We never call for it and we never welcome it. But if we measure its value in the ability to bring us face to face with the opportunities of the future then perhaps it deserves to at least be called a necessary ally—but never the enemy.



# About the Author

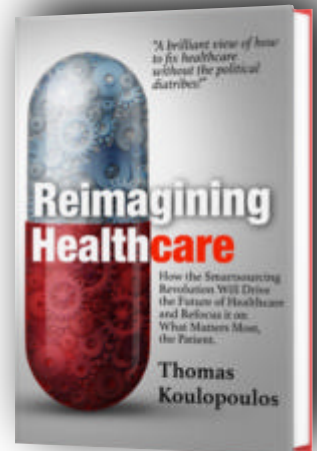


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Tom's latest book, *Reimagining Healthcare*, takes an honest and courageous look at how we

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— Coming May 26th —

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*"The challenge today, as it always has been, is  
to find the opportunity that we never would  
have known to look for."  
- TK*

Answer From Page 6: Each was founded during an economic downturn.



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