The VUCA-Plus Challenge of COVID-Related Expertise: Dancing on a Moving and Warped Plane

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The leaders operating in 21st Century societies often must deal with major challenges associated with the anxiety experienced by members of their society. This anxiety can be induced in many ways—and there are multiple sources of societal anxiety. We often seem to be stranded on a boat that is caught up in the "perfect storm" of societal anxiety. Perhaps the easiest way to sum up the multiple sources of anxiety is to evoke the now commonly used acronym: VUCA (volatility, uncertainty, complexity and ambiguity). The challenges in a VUCA environment involve both determining what is "real" and how one predicts and makes decisions based on an assessment of this elusive reality. I propose that leadership and decision-making in our 21st Century societies has become even more challenging given the big VUCA wave that is hitting us right now—the COVID-19 invasion.

The VUCA-Plus Environment

I will dwell briefly on the meaning to be assigned to each of the VUCA terms and then suggest how we might expand on VUCA. Complexity concerns the many elements and dynamic interaction among elements that have to be taken into account, while Volatility refers to the rate and shifting rate of change among the elements. The other two terms have to do with epistemology (the way in which knowledge is acquired and reality is defined). Ambiguity concerns the assessment of both the evidence available regarding reality and the meaning assigned to this reality. The fourth term, Uncertainty, is about the stability of any assessment being made regarding reality. Does reality change over a short period of time? Why do an extensive assessment if our world is constantly shifting?

VUCA is deservedly becoming the coin-of-the-realm among contemporary organizational analysts and is certainly relevant in a world of pandemic invasions. These four terms (volatility, uncertainty, complexity, and ambiguity) clearly capture much of the dynamics swirling around in the perfect storm of COVID-19. I have offered a similar, pre-virus description of our current environment (Bergquist, 2020). However, my categories differed a bit and expand upon VUCA. I identified four challenges: complexity, unpredictability (uncertainty), turbulence and contradiction. Two of these challenges align directly with VUCA, while the other two (turbulence and contradiction) expand on the VUCA environment.

In describing Turbulence, I turned to a metaphor offered by Peter Vaill (2008), who suggests that we are living in a "white water" world. I suggested that this whitewater world represents a turbulent system (Bergquist, 2019a). Furthermore, I proposed that this whitewater system incorporates four subsystems that are exemplified by the properties of a turbulent stream: (1) rapid change (flowing segment of the stream), (2) cyclical change (the stream's whirlpools), (3) stability/non-change (the "stagnant" segment of the stream), and (4) chaos (the segment of a stream existing between the other three segments).

All four of these subsystems are operating in our current time of pandemic invasion. There is rapid change occurring as the virus rapidly spreads and communities throughout the world are massively

impacted. Cyclical change is to be found in the patterned way that COVID-19 enters and spreads in a community—and tragically in the probable way in which the virus will return seasonally (until such time as there is virtually global immunity). We can find stability and non- change in the resistance to new norms and rules in virtually all societies. All of this leads to the growing presence of the fourth subsystem: Chaos. This is to be found not only in the inconsistent way we are each living our lives in response to the virus, but also in the way public policies are being formulated and revised in many countries.

What about Contradiction? I identified the frequent presence of contradictory constructions and interpretations of reality in my 2019 essay and wrote about the differing meaning assigning to the reality that is being constructed (Bergquist, 2019). I suggest that these contradictions are even more prevalent now, with the heightened anxiety associated with the virus (Bergquist, 2021). We must make decisions that take into account contradictory and polarizing values regarding thoughtful consideration and caring compassion; furthermore, these decisions are subject to frequent review and modification as we try to navigate the perfect storm and prepare for present and future corona waves. Obviously, Turbulence and Contradiction are strongly influenced by and tightly interweave with all four of the VUCA challenges. In describing our current pandemic challenge, I will use the term VUCA-Plus with this expansion on the description of a VUCA environment.

The Landscapes of Puzzles, Problems, Dilemmas and Mysteries

VUCA plus issues—and issues associated with the COVID-19 virus in particular—pose a major, multi-tiered challenge for leaders and other decision-makers in contemporary organizations, communities, and societies. I specifically propose that there are four kinds of issues being addressed: puzzles, problems, dilemmas, and mysteries. Each of these COVID-19 related issues involves a different landscape and each, in its own way, yields contradictions that we must confront individually and collectively.

Puzzles

Puzzles are the everyday issues that we all must face. Puzzles have answers. They are uni-dimensional, in that they can be clearly defined and can readily be quantified or at least measured. Puzzles during the era of COVID-19 concern such things as how we schedule time at the supermarket to minimize contact with other shoppers or how do we obtain more protective masks. Puzzles also concern changes in our institutions to accommodate new COVID-19 laws— such as re-arranging an office floor plan or determining how many customers can enter our story at any one time. With a puzzle, the parameters are clear. The desired outcome of a puzzle-solution process can readily be identified and is often important to (and can be decided by) a relatively small number of people. It is the sort of issue rightly passed to the lowest level of responsibility where the necessary information is available.

Researchers, such as Miller and Page (2007), who study complex systems use the metaphor of landscape to distinguish a complex challenge from other types of simpler challenges being faced in various systems, including organizations. They point to the image of a single, dominant mountain peak when describing one type of landscape. Often volcanic in origin, these imposing mountains are clearly the highest point within sight. For those living in or visiting the Western United States, we can point to Mt. Rainer (in western Washington) or Mt. Shasta (in northern California). Mt. Fuji in Japan also exemplifies this type of landscape. You know when you have reached the highest point in the region and there is no

doubt regarding the prominence of this peak. Similarly, in the case of puzzles, we know when a satisfactory solution has been identified. We can stand triumphantly at the top of the mountain/puzzle, knowing that we have succeeded.

Furthermore, we can look back down to the path followed in reaching the solution/peak. We can record this path and know that it can be followed again in the future when, once again, we need to reach this peak or solve this puzzle. We have gone to the supermarket at the best time—when there are few other shoppers. The new protective masks arrive at our front door. Our staff members have set up partitions between desks at the office.

Problems

I have labeled the second type of issue that we face during the era of COVID-19 as a Problem. Problems can be differentiated from puzzles because there are multiple perspectives that can be applied when analyzing a problem. Several possible solutions are associated with any one problem and multiple criteria are applied to the evaluation of the potential effectiveness of any one solution. There are many more cognitive demands being placed on us when we confront problems than when we confront puzzles—given that problems do not have simple or single solutions.

Problems are multi-dimensional and inter-disciplinary in nature. They are inevitably complicated in that they involve many elements. Any one problem can be viewed from many different points of view that are each creditable; thus, it is unclear when a problem has been successfully resolved. We face the cognitive and emotional challenge of acknowledging multiple realities and solutions. For example, because of the virus, our community closes unessential businesses, but we find that this devastates our economy. At a more personal level, we want our son to find a way to see his special girlfriend. Yet, we know that this risks his health and the health of other family members given the invasion of COVID-19. At an even more profound and wrenching level, we want to bring our aging parent to our home and away from their senior living facility (which is threatened with virus). We know, however, that this will jeopardize the health of other family members.

Because the outcome of the problem-solution process itself is of significant interest to many people, often the most important and difficult discussions revolve around agreeing on the criteria for solving a problem. At the level of public policy, the discussions revolve around reducing the number of deaths and keeping the economy from total collapse. How will we know if we have been successful in combating the virus if we don't even know what "success" would mean: "lives or livelihoods"? At the personal level we must ask questions that are impossible to answer: whose feelings and whose life is most important in this family? We can't even evaluate if the solutions are successful. We will continue to be plagued by the unanswerable question: Did we do the right thing?"

Miller and Page (2007) describe the settings in which what I call problems tend to emerge as "rugged landscapes." This type of landscape is filled with many mountains of about the same height. Think of the majestic mountain range called the Grand Tetons or the front range of the Rocky Mountains that citizens of Denver Colorado see every day. Compare this with a landscape in which one mountain peak dominates. In a rugged landscape that is complicated, one finds many competing viewpoints about which mountain is higher or which vista is more beautiful. A similar case can be made regarding the challenging problems that must be engaged by all of us individually and collectively during the pandemic invasion.

Dilemmas

When certain issues that we face appear impervious to a definitive solution, it becomes useful to classify them as Dilemmas. Many problems associated with COVID-19 are actually dilemmas. While dilemmas like problems are complicated, they are also complex, in that each of the many elements embedded in the dilemmas is connected to each (or most) of the other elements (Miller and Page, 2007). We may view the issue from one perspective and take action to alleviate one part of the issue, and we immediately confront another part of the issue, often represented by an opposing point of view offered (with passion) by other members of our family. community or society.

We loosen up our policies regarding the re-opening of businesses and find that rates of infection and death are rising dramatically. We let our son spend wonderful time with his girlfriend. He is very thankful, but other members of our family are fearful and even angry about his "selfish" behavior ("after all this is only a passing infatuation"). Leaders of a society and members of a family may not always recognize a dilemma for what it is. We tend to see dilemmas in a limited or simplistic way and attempt to deal with them as if they are puzzles or problems. When that happens, we dig ourselves deeper and deeper into the complexity, seriousness, and tragedy. Our navigation of the pandemic sea is a "mess". It is more a "swamp" then a sea. (Schön, 1996).

At times we find that the issue actually is embedded in several sets of nested dilemmas. One set of conflicting priorities exists within another set of conflicting priorities. For instance, we want to give our son a chance to be in love but are concerned that if we do so other members of our family (and our son himself) will be at risk. This dilemma, in turn, rests inside an even bigger dilemma: we want to be considerate of the feelings experienced by each member of our family; yet we are concerned that feelings take the place of security. We want to live a high-quality life (complete with feelings), yet we also want to remain alive so that we can have this high-quality life. These are very complex dilemmas - not readily solved puzzles or even complicated problems.

As in the case of problems, dilemmas can be described as "rugged landscapes." However, because dilemmas involve multiple elements that are intimately interlinked, they are far more than a cluster or range of mountain peaks of similar size. This type of complex landscape is filled not only with many mountains of about the same height, but also with many river valleys and forests. Think of the Appalachian Mountains (in the Eastern United States) or the Alps (in Europe). Compare this with a landscape in which one mountain peak dominates or in which a series of mountains dominate. In a complex, rugged landscape, one finds not only abundant competing viewpoints and values, but also an intricate interweaving of these differing viewpoints and values.

Effectively engaged members of a family, community or society can hold opposing and contradictory views. They can meet the challenge of VUCA plus. The sign of a viable family, organization or society is that it can live with and manage its dilemmas in real time, without questioning its identity at every turn in the road, whip-lashing its strategies, tearing and rebuilding its structures reactively, or scapegoating its people. To return to our landscape metaphor, we may find that we are living not in a complex rugged landscape but in what Miller and Page call a "dancing landscape." Their term is certainly very appropriate in describing our current challenge. Priorities during the COVID-19 crisis are not only interconnected, they are constantly shifting, and new alliances between old competing perspective are being forged.

Clearly, when a world of complexity collides with a world of uncertainty and a world of turbulence, the landscape begins to dance--and we must all learn how to make our families, organizations, communities and societies dance (Kantor, 1990).

Mysteries

As we begin to address the challenges associated with dancing landscapes, we enter a domain in which problems and dilemmas seem to merge into Mysteries. Mysteries operate at a different level than puzzles, problems, or dilemmas. Mysteries are too complex to understand and are ultimately unknowable. A specific mystery is profound. It is awe-inspiring or just awe-ful. A mystery is inevitably viewed from many different perspectives and is often deeply rooted in a specific culture and tradition. Mysteries have no boundaries, and all aspects are interrelated. COVID-19 is fundamentally a mystery.

We don't know why this horrible virus has afflicted us. At a more sacred level, do we deserve to be "punished." Are the wages of sin now evident? Is this some divine retribution for the inequities and warfare we have inflicted on our fellow human beings. At a more secular and political level, perhaps the virus is just highlighting the cracks in our societies that have been ignored for many years. At yet another level, we might ask if Mother Nature is simply trying to take back her environment—given that we can see all around us the signs of a clearer and less contaminated world (given reduced automobile travel and industrial production).

Mysteries are constituted of multiple and often nested dilemmas. They are beyond rational comprehension and resolution, and they must be viewed with respect. Some mysteries relate to traumatic and devastating events: Why did I get out of the World Trade Center while my desk mate perished? Why did the fire reach our home but not the one next to us? Why did my child die before me? The virus evokes many profound questions of mystery. Why is my mother forced to die alone? Where does all of this anger in our society come from? Will this ever end?

While it is often hard to identify or honor the positive mysteries in our life, they can be found during moments of reflection. How did I deserve all these years of health and security? What is my destiny? Why have I been so blessed in my personal and professional life? Why did I fall in love with this person? Why did this remarkable person fall in love with me? How did I ever raise such an exceptional child? There are even blessed mysteries to be found during this difficult time of COVID-19. Isn't it wonderful that my son has found love during this difficult period? How did I earn so much affection from these people who have been asking me about my health during the pandemic and have reached out to offer support?

Locus of Control

We perceive mysteries as taking place outside our sphere of influence or control. Psychologists call this an external locus of control and note that some people are inclined to view most issues as outside their control (that is, as mysteries). By contrast, puzzles are usually perceived as being under our control. Psychologists identify this perspective as an internal locus of control and note that some people are likely to view all issues as being under their control (that is, as puzzles).

Problems and dilemmas are usually complex mixtures of controllable and uncontrollable elements. Internal and external locus of control exist side by side with one another—especially in the nested dilemmas we often face with the virus. Our task is to discern: what can we control and what can't we

control? We will be able to successfully address a problem or dilemma only by embracing a balanced perspective regarding internal and external loci of control. One of the most helpful inquiries when confronting problems, dilemmas and (in particular) nested dilemmas is to identify what is and what is not under one's control, and to do that from a perspective that challenges immediate perceptions. A problem or dilemma that is embedded in a rugged landscape is more likely to have components that are under our partial control than is a problem or dilemma embedded in a dancing landscape.

There are myriad challenges associated with the task of identifying and addressing these four different kinds of issues. First, we typically want our issues to be puzzles that we can control or perhaps mysteries for which we have no responsibility. Puzzles can be solved, and we know when we have solved them. Mysteries are outside our control, so we need not feel responsible for resolving them. But problems and dilemmas—these are much more difficult to address, and they are swirling around us in abundance.

The perfect storm and big waves created by COVID-19 are clearly present and demanding of navigation skills related to locus of control. During this era, we must determine which aspects of the COVID-19 problems or dilemmas are under our control and which aspects are not. The confusing mixture of internal and external control is inherent in problems and dilemmas. So is the balancing of competing but valid interests represented by different members of our family, organization, community, and society. Perhaps Mother Nature should also weigh in. That is what makes these issues so difficult to address.

Living and Leading on Challenging Landscapes and Planes

I have already introduced the work of Miller and Page regarding rugged and dancing landscapes. This intriguing metaphor holds great promise in helping us better understand the nature and dynamics of the current COVID-19 crisis, as well as future pandemic crises. I will briefly revisit this landscape metaphor and then turn to a topological metaphor—the warped plane —that I believe offers even greater insights regarding the virus. It is living on a warped plane that creates the experience of tippy virus-based vulnerability.

I ask, in revisiting the rugged landscape: how do we assess and gain a full appreciation of complex interdependencies operating on this landscape? The topographers (map makers) suggest that we sample points and prepare a "terrain mesh" (or network) of points and connections between the points. Meshes are made up of triangulations. In the case of landscapes there are not only horizontal triangles (links between points in the landscape that show up on a flat map), but also vertical triangulations (between high and low points). There are, in other words, multiple triangulations and multiple levels of triangulation. This is what makes measurement of a rugged landscape difficult—and makes accurate and useful measurement of the various operations in a complex system (organization, community, society) also challenging. Accurate assessments of landscapes require multiple measurements at many points in the system, using a variety of assessment tools—what assessors often call a multi-trait/multi-method approach to program evaluation.

There is another important challenge regarding triangulation: Because rugged landscapes (and complex systems) are a set of triangulations, they tend to be strong and stable—that is what makes change in any system so difficult. Rugged landscapes and complex systems are hard to measure and even more difficult to change. Yet, once you have shifted one element in a rugged landscape or complex system, the other elements will tend also to shift—and shift in unpredictable and profound ways. All the triangulations must adjust to accommodate the change in any one triangle.

This is the opportunity (and threat) inherent in rugged landscapes and complex systems (organizations, communities, societies). They are hard to change, but once they begin to change— watch out! We witness the profound power of geological earthquakes that can change an entire landscape. We similarly witness the profound operational and psychological earthquakes that often are experienced inside a complex organization. Both systems are vulnerable and tippy, while at the same time being stable and hard to change. We are now witnessing the tippy-ness and remarkable changes occurring at many levels of our society and other societies throughout the world as the result of sometime microscopic in size; the COVID-19 virus.

The VUCA-plus world of the 21st Century is requiring us to live on dancing landscapes. Organizational, community and societal earthquakes are occurring all the time. We witness them when a black man declares that he can't breathe and soon dies. An earthquake is rumpling when the merger of two communication giants alters the way in which media is produced and controlled (or not controlled). As the landscape begins to dance, we must learn how to join this dance and we must dance alongside other members of our family, organization, community and society.

Navigating on a Warped Plane

One of the most important and sometimes overlooked concepts to come out of chaos theory is the observed tendency of all fluid systems to bifurcate (split into two or more pathways). In essence, when fluid systems begin to break up (as a function of the speed at which the fluid is moving or as a result of the introduction of a foreign, intrusive element) parts of the system tend to move in different directions. These diverse movements of particles, units or people will, in turn, form two or more coherent subsystems that may later subdivide again. Thus, if I pour a small glass of water on a smooth surface (such as a table or countertop) it will tend not to flow in one direction or remain together as one coherent mass. Rather, it will soon break into two or more sub-streams that flow in two or more directions across the surface of the table or countertop.

The noted biologist, Conrad Waddington (1997) describes this same tendency toward bifurcation in his model of chreods—warped planes on which objects move in an unpredictable manner. Waddington uses the metaphor of a ball being placed at the top of a slopping plane (thin sheet of metal or plastic). As we bend and warp the plane, ridges and valleys are formed. When the ball is placed on a tilted plane, the inherent dynamics of the plane become evident. The ball will begin to roll straight down the plane until it encounters one of the ridges. At this point a series of oscillations tend to occur. The ball moves back and forth before it eventually begins to roll down one of the valleys and picks up speed again.

The Warped Plane
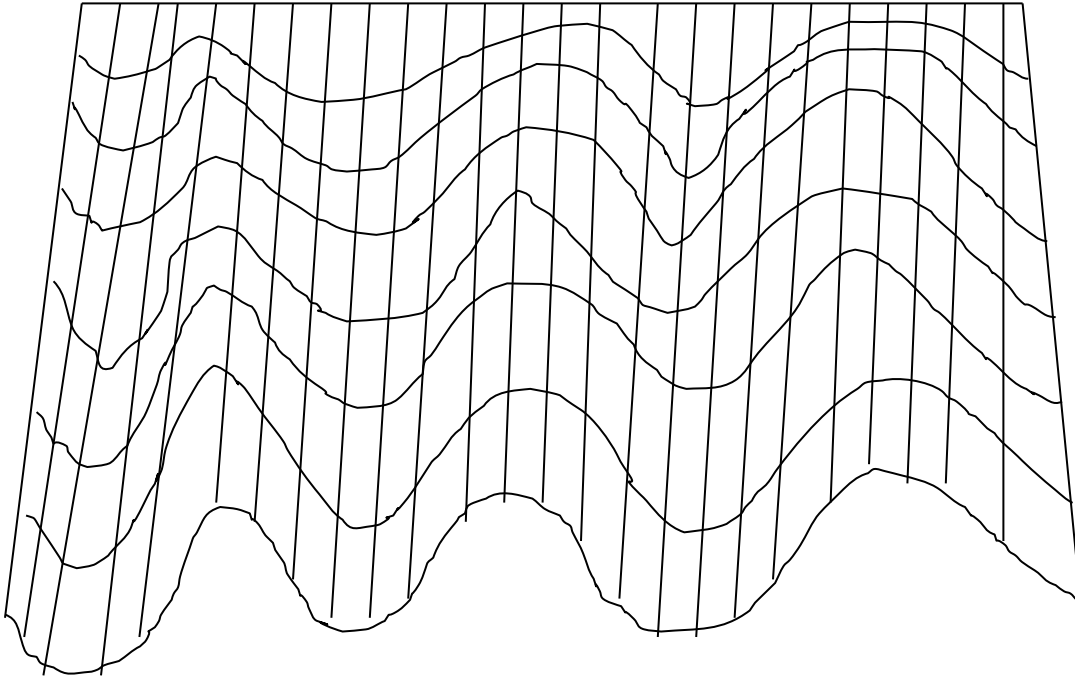
If several balls are rolling down the plane at the same time, this first ridge will become a point of bifurcation for the entire system. Some balls will move in one direction (depending on the pattern of oscillation when encountering the ridge) and roll down one valley, while other balls will move in a different direction, rolling down one or more of the other valleys. A ball may gain enough momentum to roll over the top of one ridge into a second valley. If there is not sufficient momentum, the ball will remain in the current valley. Thus, a few critical moments in the life of the ball's roll down the plane make a major difference in the outcome of the roll. The pattern of oscillation determines which valley is chosen and whether or not the momentum is sufficient for the ball to shift to another valley. There is a cluster of conditions (in the form of valleys and ridges) that define the specific alternative courses to be taken by the ball.

Waddington's warped plane relates directly to the alternating patterns of chaos and order that many complexity theorists have identified. The tendency toward order is evident in the movement of the ball down a specific valley. Once we know which valley is chosen, we can predict the movement of the ball back and forth down this valley. However, before the ball moves into a specific valley we can only guess on its ultimate pattern. In essence, balls appear to be groping for order and a specific direction of movement. The balls engage in a process of oscillation that occurs immediately before the balls bifurcate and begin rolling down one of the specific valleys.

Groping is a trial-and-error (oscillating) process in which many different options are examined and even tested. It plays a critical role in any evolutionary process. For instance, natural biological evolution

requires the spontaneous fluctuation of species and the subsequent irreversible selection of specific species-specific characteristics. Successful adaptation of any type—whether individual or organizational, reactive or creative—must always contain a random component. In essence, an organism that is seeking to adapt to a changing condition or environment begins by trying out a variety of behaviors. It will fluctuate in its behavior and become temporarily unpredictable, as in the case of the ball's oscillating back and forth at the top of the warped plane.

Several biologists have recently suggested that oscillation tends to occur in many organisms at a point immediately prior to its transition from a stable to chaotic state and its ultimate commitment to a specific, irreversible course of action (a bifurcation). Many of these oscillating behaviors— these trial-and-error (innovative) efforts—are not effective. They do not work. One or two do work, however, leading the organism to expand its repertoire and shift its regular mode of functioning to accommodate these changes. The exploratory processes—the endless trial and error of mental progress—can achieve the new state only by embarking upon pathways randomly presented, some of which are selected for the survival of an individual or organization. We may, as a species, be involved right now in this exploratory process regarding our capacity to live with our current pandemic and other pandemics that will inevitably occur in our increasingly flat and interconnected world.

Confronting the Virus on a Warped Plane

We return to Waddington's warped plane to get a concrete sense of this dynamic, ordering process as it relates to COVID-19. At the start, as the ball is rolling down the warped plane it encounters the first warp (a ridge with two adjacent valleys). At this point, it tends to oscillate. As just noted, oscillations tend to precede bifurcation. At the point when the ball ceases to oscillate and begins to move down one of the adjacent valleys, an irreversible decision has occurred. This is the dynamic operating when a virus leaps from one region of the world (one valley on the plane) to another region. Typically, there is just a small number of infected people who usually have traveled from the original region of infection. The infection can be immediately detected, and the infected person quarantined. Nothing occurs. The virus is "stopped in its track." It is a matter of perfect timing and fast response. The oscillation in this instance is the moment of decision being made by those in medical authority. Unfortunately, the response is often not timely or fast. Many delaying or deferring questions are asked:

"Are we sure this is the dreaded virus?"

"I thought it was present only in xxxx (name of country or region)."

"This could just be a nasty flu. We certainly don't want to alarm people in this community—they are already stressed out."

"If we announce that one person has been infected and quarantined then our economy will immediately go down in flames! All because one old person got sick (or) All because that damned tourist went to the wrong country and hung out with the wrong people!"

System theorists (e.g. Meadows, 2008) tell us that one of the most important (and often overlooked) features of any system is the delay function. How long does it take to detect a change that is acting on the system from outside (or inside)? How long does it take to share information with other sectors of the system about this change? How long does it take to act upon the information that has been received and shared? In the case of COVID-19 (and other viruses) a delay of even one day can be devastating. The

ball no longer oscillates. It moves into the new valley (infecting residents of this second valley at a high rate).

There is more to say here about the movement of the ball (and the virus) down the new valley. When the ball begins to move down one of the valleys, it usually doesn't roll directly down the center of the valley. Rather, because it entered the valley from an angle (having oscillated among several options before entering the valley), it rolls up the side of one of the valley's ridges. The ball then corrects itself by rolling back across the floor of the valley and up the other ridge of the valley—while continuing to move down the valley. Ideally, those people who are residing in this second valley make quick, yet orderly adjustments and minor changes at this point. They are agile, moving in a self-correcting fashion. This is all well and good—provided that the system is operating in an optimal manner, with abundant agility. Leaders are making thoughtful decisions in a slow, measured manner (Kahneman, 2011).

Tragically, this is not the way things operate in many valleys. What happens when the system is stressed, and levels of anxiety are high? What takes place when there is an invading enemy (such as COVID-19) that is uncaring about the welfare of people living in the valley and is itself quite agile (and invisible). Under these conditions, the natural swings of the ball back and forth down the valley can trigger even more anxiety. This leads to fast, "knee-jerk" reactions--what behavioral economists call the reliance on inappropriate but convenient "heuristics". The ball often swings back and forth even more violently— and may move to yet another valley. This means that the disfunction of one community or society can result in the virus spreading elsewhere. The blame as well as the virus spreads and intensifies. A perfect storm takes place, and we are facing a full- blown, globally destructive pandemic.

What does it look like in a system that experiences the movement of the ball into its own valley? Everyone knows that something terrifying has just come to their organization, community, society. Pretty soon things are in disarray. Something is about to happen. Unfortunately, one can only speculate on what will happen under these conditions of disarray or chaos. The oscillations of the ball are unpredictable (as is the spread of the virus). When the ball is swinging widely from one ridge to the other ridge, it has as great a chance of moving over the top of the left ridge into the adjacent valley as it does of moving over the top of the right ridge into that adjacent valley.

Most of the members of a system (organization, community, society) don't really know much about (or perhaps even care much about) either of the adjacent valleys. There is always hope that the ball will continue to roll down the current valley without much oscillation or uncertainty. If it does go to another valley then perhaps it will never return to our valley. Someone else will have to deal with the virus—it is no longer our problem.

Clearly, the ball is not done with the change process and the virus has not discontinued its spread to other communities and regions. The oscillation in any one valley can be attributed, at least at times, to the anxiety and inappropriate actions that have been taken. At other times, the oscillation can take place because the rate of change (speed of the ball) is simply too great for the valley (society) to handle--the faster the speed, the wider the swings The ball may have swung too far and actually rolled up over the top of the ridge into the adjacent valley.

As in the case of the initial oscillations that preceded the ball's movement into the second valley, the movement into a third valley is preceded by oscillations—though in this case the oscillations are usually quite large. They are quite visible and bigger than what was expected (given what has been conveyed by

residents of the previous valleys through which the ball rolled). The virus is now well-known and even more frightening to all involved. Occupants of all the surrounding valleys are increasingly anxious and are likely, as a result, to operate in an inappropriate, thoughtless manner is and when the virus hits their own valley. The virus even more easily wins the day, moving from valley to valley.

If the ball does move over the top of one of the ridges, then it will roll down the side of another valley. A whole new set of parameters will be in operation in the new valley. The systems operating in this valley need to make some immediate adjustments. The ball will not be at the top of the valley when it rolls over the top of the ridge. Hence, it is not like a ball that is starting at the top of the warped plane. On the one hand, residents of this new valley have ample opportunity to learn from mistakes (and successes) of residents in valleys through which the ball rolled (virus invaded). On the other hand, residents of the new valley must "hit the ground running" as the ball (virus) enters their valley. They must learn some new lessons as well as listen to the lessons conveyed by residents of valleys through which the ball has previously rolled.

Why must new lessons be learned? This is because the ball (virus) will never operate in the same manner in the new valley. Its trajectory at the top of the first valley (the inception of the virus) no longer operates. The ball (virus) is now entering each valley from a different angle, at different speeds. It is received in different ways in each valley—depending on levels of anxiety, expertise, and culture-based attitudes about the ball (virus). A large company that downsizes will never be the same as a smaller company that was never large in the first place. A reformed alcoholic will never be the same as a lifelong teetotaler. The reformed alcoholic, for instance, might be more compassionate (or less compassionate) regarding those who are still active drinkers. The wounds caused by downsizing will never really heal. We can never again be indifferent to a threatening pandemic once we have experienced an outbreak of one virus. Pandora's box can never be closed again—the evils of our world (and the virus) have been let loose and can't be recovered or fully controlled. What about the next virus to hit our shores? A new virus outbreak is perceived in a different manner from a virus that has been moving through communities for several months.

And what about a virus that has been with us for many years and that is only occasionally given much attention?

Multiple Valleys and Multiple Truths: Perhaps We Are the Ball

The challenge and potential harm become even more profound when we recognize that the ball in real life may be residing simultaneously in two or more valleys—as certainly is the case with a virus. Technically, it is a bit different if the single ball splits into two or more balls at the top of the plane or if there were always two or more balls operating all the time on the warped plane.

In the case of the current virus, the ball appears to have split and multiplied – though in the case of COVID-19 there has been some speculation that it actually broke out in several locations, perhaps over an extended period of time. There may have been multiple balls let loose at the top of the plane. The corona virus, in some form, might actually have been with us for quite a while— in which case the ball is not new to us but has been rolling around our valley undetected or mis- perceived for an unknown period of time.

We might even come to realize that we are living in several different valleys and can't simply wait for the ball (virus) to leave one valley. As global citizens, we are not only living ourselves in multiple

valleys—we are required to embrace multiple truths and perspectives arising from our life in each valley. And we must care about what happens in these other valleys, for we live there too. We are living in and journey through multiple valleys on a warped plane. Being a global citizen during this challenging era of VUCA plus and COVID-19 is quite a challenge.

What about dancing landscapes? When living on Waddington's warped plane, we are likely to feel that this plane is a dancing landscape. We encounter new balls flipping into our valley. It is a tipping point for us—the unpredictability of the ball entering our valley may be experienced as a dancing change in our life. Is the landscape actually dancing, or is it each of us who is dancing?

Are we actually the ball on the warped plane that is entering a new valley? Are we what is "tipping" over the top of the ridge? Everything changes when one is moving into an unanticipated valley and rolling in a new manner through this new valley. There are new realities and new viruses. As global citizens we feel confused and vulnerable—with considerable justification.

Concluding Comments

There are many applications that can be extracted from the various models I have offered in this essay. Hopefully, I have identified a few that are relevant to the reader of this essay. A complex, unpredictable and turbulent environment is not easy to navigate. This is particularly the case when this navigate is through an environment that is swirling with COVID-19. We must look to many sources of wisdom and insight when thoughtfully formulating strategies that are responsive to the challenges of tippy virus-based vulnerability. I believe that some sources of wisdom are to be found in the recognition of internal and external locus of control as related to puzzles, problems, dilemmas, and mysteries. Wisdom might also be found in a full appreciation of rugged and dancing landscapes, as well as warped planes. Given the VUCA plus world in which we now live, courage and creativity must be found to complement this wisdom. This is especially the case when we must address the additional challenges of COVID-19 and other future pandemics. At least there will be the thrill of dancing with our family, community and society on this moving landscape and there is always the prospect of new scenery as we travel through multiple valleys on the warped plane. Life will never be dull.

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