Tippy Organizations and Leadership: Engaging an Organizational World of Vulnerability

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In the world of 21st Century organizations we experience profound vulnerability—in large part because the environment both inside and outside the organization is filled with complexity, unpredictability and turbulence (a confluence of order and chaos). This makes organizations very tippy and organizational leadership very challenging. Malcolm Gladwell's book on tipping points proved to be very popular and widely-read in large part because we all experience this tippy vulnerability in our organizational life (and perhaps often in our personal life). I will offer several perspectives on this tippy vulnerability, borrowing from both evolutionary biology and topology. I also make use of the emerging and critically important interdisciplinary study of complex systems. In the use of concepts from these diverse fields, I will trace out specific implications for contemporary leaders and those who coach these leaders. I begin with the relationship between evolution and innovation (the latter being one of the major sources of tippy vulnerability in contemporary organizations).

Evolution and Innovation

In the field of biology there is a classic (sometimes controversial) mathematical model called the Hardy-Weinberg Equilibrium which provides some rich insight for not only those interested in evolutionary change, but also those who are coaching leaders facing the challenge of introducing innovation and change in their organization. The Hardy-Weinberg Equilibrium model works backwards with regard to evolutionary change—it is about the five key assumptions that lead to NON-change in terms of biological evolution.

The first assumption is that there are no mutations in a population. This would mean that all of the genes that form the basis of all life forms are the same for all members of one species. There is no room, in other words, for variations or mistakes. The second assumption is that any specific population is isolated. Individual members of a specific population (community) can't migrate into or emigrate out of that specific community. The members of any species within a specific community can only breed with individuals from the same community.

The third assumption that would block biological evolution concerns the size of the population. The population has to be very large for the blocking of evolution to occur—leading to the averaging out of differences among members of any one species. If the community is small then any differences will make

a big difference (big frog in a small pond), whereas in a large community, differences will be absorbed and not have much of an impact. The fourth Hardy-Weinberg assumption leading to equilibrium is about mating preferences. There will be little evolution if mating is random—anyone from the other gender will do and there is not much discrimination. If members of a species show preferences for those of the opposite sex who are bigger, stronger, prettier, faster, smarter or hairier, then evolution is more likely to occur. The final assumption to be made is closely related to the fourth. It concerns survival and reproduction in a specific population. Evolution is unlikely to occur if everyone in the community has an equal chance of survival and an equal opportunity, as a surviving adult, to mate and produce offspring.

So, what if anything does this rather theoretical model of evolution have to do with the very real world of organizational innovation and the challenges of fostering change within a complex system (such as exists in 21st Century organizations). I would suggest that all five assumptions can be applied to organizational life. If all or most of the five Hardy-Weinberg assumptions are descriptive of an organization, then it is likely to remain in equilibrium and innovation is unlikely to occur. The key, therefore, for the organizational coach and leader client is to ensure that these assumptions aren't being met. Let's focus briefly on each assumption and see what it says about organizational innovation and change. Furthermore, what applications can be made to the work being done by an organizational coach?

Mutations and Organizational Diversity

If there are no mutations in a population then evolution will not take place. There is no room for variations or mistakes in a system in equilibrium.

Implications: Innovation requires that things are not always going right in an organization. There must be variations if the organization is to generate innovations. Scott Page (2011) writes about the generation of multiple ideas (mutations) and the power of diversity within any system in his very challenging book, *Diversity and Complexity*. Page suggests that a world filled with many perspectives is one in which good ideas, clear thinking and accurate information is likely to emerge: "if we have lots of diverse paths . . . , we are not likely to make mistakes. If we only have a few paths, mistakes are likely." (Page, 2011, p. 240) Page makes the strong case for the important interplay between complexity and diversity. Systems that are complex and diverse will be more resilient and amenable to change:

> Systems that produce complexity consist of diverse rule-following entities whose behaviors are interdependent. . . . I find it helpful to think of complex systems as "large" in Walt Whitman's sense of containing contradictions. They tend to be robust and at the

> same time capable of producing large events. They can attain equilibria, both fixed points and simple patterns, as well as produce long random sequences. (Page, 2011, pg. 17)

There is one thing we have learned in recent years with regard to the viability of organizations that has almost become an axiom: if there is extensive variability (disturbance) within the environment in which an organization operates, then there must also be extensive variability (diversity) inside the organization. Page identifies this axiom as the *Law of Requisite Variety*:

> . . . the greater the diversity of possible responses, the more disturbances a system can absorb. For each type of disturbance, the system must contain some counteracting response. . . . The law of requisite variety provides an insight into well-functioning complex systems. The diversity of potential responses must be sufficient to handle the diversity of disturbances. If disturbances become more diverse, then so must the possible responses. If not the system won't hold together. (Page, 2011, p. 204, 211)

*Applications***:** In order to promote organizational innovation, a coach must encourage her leader client to value diversity within the organization. However, the coach should also help her client to recognize that diversity requires the client (and other members of the organization) to tolerate increased ambiguity, effectively manage conflict, and provide safe settings in which alternative ideas can be explored. Therefore, the coach should help her client identify strategies (training, setting of norms, creating supportive settings) that enable her client and other members of the organization live with ambiguity, work with conflict and provide safe places for idea exploration.

Migration and Open Boundaries

Evolution will not take place if a specific population is isolated. If individual members can't migrate into or emigrate out of that specific community then evolution is likely to be stymied.

*Implications***:** Organizational theorists and change agents have often emphasized the difference between open and closed systems. Organizations are systems that can be differentiated in this manner: some have relatively open boundaries and others have relatively closed boundaries. Closed systems and organizations with impermeable boundaries are likely to be stable and secure over the short term, but are also likely to soon die because of a lack of replenishing resources from outside the system and because of an inability to respond effectively to the impingement of outside (environmental) forces.

Cross-pollination of ideas in a cross-cultural context occurs in open-boundary organizations and is critical to innovation, sustained success and even organizational survival. At the individual level, we are talking

about those men and women who are cosmopolitan in their perspectives as compared to those who are parochial in their perspectives on life and the world. The cosmopolitans create and live in a world of open boundaries. These are the early adopters in the diffusion of innovations. (Rogers , 2003)

We see the increasing viability of open boundary systems in the flat world made famous by Thomas Friedman (2007). Clearly with the Internet and globalization of many markets, there is the need for more open boundaries. However, as I mentioned 20 years ago in *The Postmodern Organization* (Bergquist, 1993), the challenge of open boundaries is the need for some "glue" that holds the organization together. This glue can be found in the clear and compelling mission, vision, values and social purposes of the organization, in the strong and enduring culture of the organization, or (sadly) in the absolute control exerted by a central leader or C-Suite coalition of leaders.

The flat world of Thomas Friedman is filled with many additional challenges--including the emergence of *Power Law* dynamics in the Internet-based markets of our 21st Century world. In many instances, the market for specific products or services has expanded at an exponential rate (the Power Law in operation)—or collapsed at an exponential rate (also exemplifying the Power Law). As Taleb (2010) has noted in *The Black Swan*, a few products (books, technologies, etc.) and a few websites tend to account for most of the sales and traffic on the Internet. Furthermore, the tides created by these sales and Internet traffic tend to ebb and flow quickly and in unanticipated ways.

Thus we find that temporary dominance and centralization will distort the open boundaries described by Friedman. The Power Law calls for new perspectives regarding the migration of ideas, people, products and services in our 21st Century world. We find the promise of diffusion and equity via the Flat World tempered by the challenge of temporary (or long-term) dominance and centralization in the global marketplace.

*Applications***:** In order to promote organizational innovation, the coach should encourage her leader client to focus on the creation, identification, clarification and/or institutional-embedding of mission, vision, values and social purposes. A coach should also encourage and guide her client in the appreciation, honoring, strengthening and use of the existing culture within their organization, recognizing its value as a source of stability and coherence in their organization. Furthermore, the coach should encourage her client to gain a cosmopolitan perspective (learning about and visiting other organizations and geographic regions), as well as encouraging her client to find ways for other members of their organization (especially mid-managers) to gain this cosmopolitan perspective. The coach should also help her client recognize the need for contingency planning in their organization in response to the rapid, complex, and

unpredictable Power Law changes that can occur in the marketplace and environment in which their organization operates.

Size and Deviant Impact

If the population of a specific species is very large then evolution is unlikely to occur, for in a large population there is an averaging out of differences among members of any one species. If the community is small then, according to Hardy-Weinberg, any differences will make a big difference.

Implications: Very big organizations tend to swallow innovations. Rosabeth Kanter (1990) wrote about this many years ago when she described the challenge of teaching giants (big organizations) to dance. She noted that there is a pervasive tendency for large organizations to be preservation-seeking bureaucracies. Unfortunately, this tendency is counterproductive in our volatile 21st Century world. As Kanter prophetically noted, large organizations must become more entrepreneurial and less bureaucratic if they are to survive. They must become focused, fast, friendly and flexible. These organizations, in other words, need to be able to dance—and this seems to be ironically appropriate, given that they must survive in what Scott Page (Miller and Page, 2007; Page, 2011) describes as the *Dancing Landscapes* in which many of these organizations now operate.

The preservation-seeking bureaucracies described by Kanter seem to evolve from several fundamental principles regarding the size of systems. We have known for many years that an increasingly large proportion of a system's resources (people, money, energy, conversation) goes into the maintenance functions of this system, as it grows larger (and as it grows older). As I noted in *The Postmodern Organization* (Bergquist, 1993), this general principle regarding systems can be specifically applied to organizations. A small organization will tend to devote a large percentage of its resources to the generation of specific products or services—whether it is producing chairs or offering hospitality services.

A large organization, by contrast, will often devote as much as 90% of its resources not to production or provision of services, but to the overall maintenance of the organization (management, communications, coordination, etc.). As an organization grows larger (and older) it takes much more time, attention and people to hold the organization together—especially if the organization operates within a hierarchical structure rather than allowing self-organizing dynamics to prevail (an idea first promoted by Ilya Prigogine and later described in greater detail by many chaos and complexity theorists and researchers, such as Scott Page and Steven Strogatz, and made accessible by Margaret Wheatley in *Leadership and the New Science*) (Prigogine, 1984; Strogatz, 2003; Wheatley, 2006; Page, 2011)

*Applications***:** In order to promote organizational innovation, a coach should encourage and guide her leader client in the management of growth and size within their organization (recognizing that most organizational problems can't be solved simply by growing larger). She should also encourage her client to consider growth not in the size of their organization, but in the number and diversity of cooperative and strategically collaborative agreements they have with other organizations. (Bergquist, Betwee and Meuel, 1995; Kanter, 1997, Chapter 20)

Preferences and Distinctive Contributions

There will be little evolution if mating within a specific species is random. If members of a species show preferences for specific characteristics in those of the opposite sex, then evolution is more likely to occur.

*Implications***:** Life in an innovative organization isn't fair. Some people seem to be doing a better job and are coming up with more ideas than other people. In his assessment of diversity and complexity, Scott Page proposes that: "systems need competition to flourish and diversity increases competition." (Page, 2011, p. 217) "Absent competition" concludes Page, "entities—be they firms, species, political parties, or ideas –may lack pressure to improve or respond to changes on the landscape. . . .[D]iversity provides the seeds for innovation and thus . . . pulls toward more pressure." (Page, 2011, p. 216) This emphasis on competition and preference for the fittest certainly doesn't appeal to our sense of fair play and may even contradict the societal values of democracy. However, it might be critical to the promotion of innovation and organizational change.

What is the distinctive contribution to be made by each member of the organization and by each functioning unit of the organization? How do we take full advantage of the distinctive strengths of each member and unit – while also recognizing that these distinctive strengths can get the member, unit (and overall organization) in trouble if overused or used inappropriately. The answer to these questions in part resides in the analysis of the fifth assumption in the Hardy-Weinberg Model—with specific emphasis being placed on an organizational culture of appreciation (Srivasta, Cooperrider and Associates, 1990; Bergquist, 2003; Cooperrider and Whitney, 2005; Bushe, 2010).

*Applications***:** In order to promote organizational innovation, a coach should guide her leader client in the identification of leverage points (internal strengths) within their organization and strategic advantages (external opportunities) they hold with regard to other organizations in their same market. The coach should also help her client identify the individual strengths they hold in the organization, as well as ways in which these strengths may be over-used or used in an inappropriate manner by themselves.

Survival and Appreciation

Evolution is unlikely to occur if everyone within a species has an equal chance of survival and an equal opportunity, as a surviving adult, to mate and produce offspring.

*Implications***:** Organizations foster innovation when they are truly being challenged to do it right in order to survive. There is a critical decision-point in the life of any organization and any leader of an organization. When faced with a major life-threatening challenge, the choice is to either freeze and hope the challenge will go away, or seek out new solutions—and perhaps even more importantly seek out actions that have already been engaged in the organization when faced with a similar challenge in the past. This doesn't mean returning to old solutions. As Scharmer (2009, p. 7) has proposed in *Theory U*, we must be able to "learn from the future as it emerges".

Scharmer notes that: "leaders cannot meet their existing challenges by operating only on the basis of past experiences . . . . Sometimes you work with teams in which the experiences of the past are actually the biggest problem with and obstacle to coming up with a creative response to the challenge at hand." (Scharmer, 2009, p. 8) How do we learn, as Sharmer writes, "to better sense and connect with a future possibility that is seeking to emerge?" I would apply to organizational life the biological theorists' proposition that evolutionary change requires selective survival: the surviving organization in the 21st Century is likely to be one that can learn into the future.

How do we learn into the future? It doesn't mean we abandon the past, but it does mean that we are selective about what we take from the past and are required to always test this acquisition from the past against emerging challenges and realities. We need to catch people when they are doing it right in response to the new realities and need to reinforce this successful behavior. Members of an organization will often do it wrong in a world that is changing rapidly and in unpredictable ways. However we can learn not just from our mistakes but also from our successes. We create a learning organization when we can appreciate (and learn from) the times when our organization gets it right.

This is the key point to be made by Hardy-Weinberg: not every idea is equally good, so we must reinforce the good ideas. We must not just celebrate our successes, we must also spend time reflecting on the lessons to be learned from these successes, knowing full well that these lessons will not fully match with future challenges (learning forward). This appreciation provides courage and persistence, as well as partial answers to the new challenges.

*Applications***:** In order to promote organizational innovation, a coach should encourage her leader client to create and maintain a learning organization that is geared not only to learning from its mistakes but also to

learning from its successes. The coach should encourage and guide her leader as he learns into the future through embracing successes rather than just seeking to avoid failures.

Living and Leading in a Rugged Landscape

Previously in this essay, I mentioned the work of Miller and Page regarding "dancing landscapes." This intriguing metaphor holds great promise in helping us better understand the nature and dynamics of organizational evolution and innovation. I will briefly consider this landscape metaphor, along with another metaphor (the rugged landscape) which represents a system that is less dynamic but equally as complex). I then turn to a topological metaphor—the warped plain (chroed)—that I believe offers even greater insights regarding the experience of tippy vulnerability.

Researchers who study complex systems use the metaphor of landscapes to distinguish a complex challenge from other types of simpler challenges being faced in various systems, including organizations, (Miller & Page, 2007). 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 regaining the prominence of this peak. One knows when a satisfactory solution has been identified and one can stand triumphantly at the top of the mountain, knowing that one has succeeded and can look back down to the path followed in reaching the peak.

There are other landscapes that are much more challenging—and these are the primary domains of coaching. As organizational coaches, we are likely to often confront the challenge of helping our clients work with complex problems—even dilemmas and nested dilemmas. (Bergquist and Mura, 2011) These problems and dilemmas can be said to reside in (and help to make up) "rugged landscapes." (Miller and Page, 2007) This type of complex landscape is filled with many mountains of about the same height, as well as river valleys, forested plains and many communities (think of the Appalachian Mountains), as compared with a landscape in which one mountain peak dominates or in which a series of similar-sized mountain peaks dominate (the mountain range). In a complex, rugged landscape, one finds not only many competing viewpoints but also an intricate and often paradoxical interweaving of these differing viewpoints. Dilemmas confront us in complex rugged landscapes with the need to balance or manage two or more opposed, yet equally valid, interests or *polarities*. Whenever multiple stakeholders with unique interests are involved, it is safe to expect a dilemma to present itself for the leader who intersects with it.

The dilemma-filled challenges that the 21st Century leader faces makes the role played by a 21st Century coach even more important (perhaps even imperative).

How do we assess and gain a full appreciation of complex interdependencies operating in a rugged landscape? We sample points and prepare a "terrain mesh" (or network) of points and connections between the points. Meshes are made up of triangulations. And 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 very difficult—and makes accurate and useful measurement of the various operations in a complex organization also very challenging. Accurate assessments of landscapes and organizations by a leader and her coach require multiple measurements at many points in the organization, using a variety of assessment tools—what assessors often call a multi-trait/multi-method approach.

There is another important challenge for leaders (and coaches) with regard to triangulation: Because rugged landscapes (and complex organizations) are a set of triangulations, they tend to be very strong and stable—that is what makes organizational change so difficult. Rugged landscapes and complex organizations are hard to measure and even more difficult to change. On the other hand, once you have shifted one element in a rugged landscape or complex organization, the other elements will tend also to shift—and shift in unpredictable and profound ways. All of the triangulations must adjust in order to accommodate the change in any one triangle. This is the irony inherent in rugged landscapes and complex organizations: 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 and we similarly witness the profound operational and psychological earthquakes that are experienced inside a complex organization. Both systems are vulnerable and tippy, while at the same time being stable and hard to change.

Living and Leading on a Dancing Landscape/Warped Plane

I would suggest there is an even greater challenge for leaders and their coaches during these early years of the 21st Century. Organizational earthquakes are occurring all of the time. We may find as coaches that our clients are living not in a complex rugged landscape, but in what Miller and Page (2007) call a "dancing landscape." Priorities are not only interconnected, they are constantly shifting, and new alliances between old competing polarities are being forged. Clearly, when a world of complexity collides with a world of uncertainty and turbulence, the landscape begins to dance and we, as organizational coaches,

learn how to dance with our clients. Both we (as coaches) and the leaders we are coaching are increasingly challenged to develop superlative strategic thinking and communication skills as participants in the ongoing dance. This is the challenge I was referring to earlier when writing about the evolutionary relationship between size and deviant impact.

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 into 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 will flow in two or more directions across the surface of the table or countertop.

The noted biologist, Conrad Waddington 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 the 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.

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. In essence, the 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—which leads us back to the relationship between evolution and innovation that I discussed in the first half of this essay. Natural 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, as I noted previously, 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.

Living Vulnerably on a Warped Plane

We return to Waddington's warped plane to get a concrete sense of this dynamic, ordering process. 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 noted above, bifurcation tends to be preceded by oscillations. At the point the ball ceases to oscillate and begins to move down one of the adjacent valleys, an irreversible decision has occurred. When the ball begins to move down one of the valleys, however, it usually doesn't move 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 roll down the valley. In this setting, an organization makes orderly changes and operates in a self-correcting fashion. The organization is moving toward a specific goal (the bottom of the valley) and its leaders usually can rather clearly articulate the skills, knowledge and

attitudes that are needed among the men and women who are working in the organization. This is an evolutionary process, whereas the initial movement into the valley is much more revolutionary in nature.

The ball or organization may not yet be done with the change process. At times, the ball may swing too far and actually roll up over the top of the ridge into the adjacent valley. Changes in the first valley have become too great —usually as a function of the speed of the ball's movement (the faster the speed, the wider the swings). As in the case of the initial oscillations that preceded the ball's movement into the first valley, the movement into a second valley is preceded by oscillations—though in this case the oscillations are usually very large and quite public. Everyone knows that things are in disarray and that something is about to happen. Unfortunately, one can only speculate on what will happen under these conditions of disarray or chaos. When the ball is swinging widely from one ridge to the other, 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 an organization don't really know much about either of the adjacent valleys and there is always hope that the ball will continue to roll down the current valley and never really go over the top.

If the ball does move over the top of one of the ridges, then it will roll down the side of the second valley. A whole new set of parameters will be in operation. The organization needs to make some immediate adjustments to this new valley. 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 valley and has had ample opportunity to learn from its mistakes. The ball/organization and its members must "hit the ground running" in this new valley. It will never be the same as a ball/organization that started at the top of the valley. It must instead develop its own style. 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) with regard to those who are still active drinkers. The wounds caused by downsizing will never really heal.

Coaching Leaders Who Are Living on a Warped Plane

In addition to all of the fast learning that must occur, the ball/organization may be in for a spectacular ride! And the leaders of this organization may find the services of experienced coaches to be invaluable. The ball enters the second valley at an angle and at the peak of one of the second valley's ridges. Therefore, it will tend to roll high up on the opposite ridge of this second valley. It may even roll over the top of this second valley into yet another valley (another revolution). Regardless of the valley in which it settles, the ball will swing back and forth wildly from one ridge to the other before settling into a more stable pattern of slowly oscillating, self-correcting movement down the floor of this valley.

What determines the nature and outcome of the movement of the ball/organization down the warped plane? We have already mentioned speed as an important determinant. The faster the ball is moving, the more likely it is to shift between adjacent valleys. The amount of oscillation is also dependent on the height of the ridges. Adjacent valleys and organizational types with low ridges (highly permeable boundaries) are conducive to frequent movements between valleys. Thus, in a postmodern world with highly permeable boundaries, we are likely to find more revolutionary changes in organizations—more swinging between valleys.

The amount of oscillation within a specific valley is also dependent in part on the amount of friction that exists between the ball and the plane on which it is rolling. High levels of friction in a valley tend to slow down the roll of the ball and hence the extent (and height) of the movement up the side of either ridge of the valley. Organizational valleys exhibit friction to the extent that they have strong cultural resistance to change. Organizations with dominant, stable cultures tend to slow down oscillations as well as the movement of the organization down the valley. As I mentioned earlier, complex organizations (with many triangulations) are likely to be less efficient and responsive to change, are more likely to be stable. Ironically, as I have already mentioned, these organizations are also likely to be vulnerable to large-scale and disruptive changes. If the ball does roll into a second valley, everything must be adjusted—revolution is inevitable!

Effective (and powerful) coaching in a contemporary organizational setting might best be described as a short-term excursion of the ball/organization into foreign valleys: into valleys that can be anticipated, valleys that offer alternative perspectives on the valley in which the leader is now traveling, or alternative valleys that might better serve the leader and her organization. As coaches we help our clients enter these foreign valleys not by chance, but by choice.

What about dancing landscapes? When living on Waddington's chreod, the leader/ball moving down the warped plane "feels" that this plane is a dancing landscape. The leader/ball enters a new valley. It is a tipping point for the leader—it is experienced as a dancing landscape. Is the landscape actually dancing, or is it the ball on the warped plane that is entering a different valley—"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. Leaders need the assistance of coaches when living and moving of this warped plane. They feel 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. Leadership, innovation and

organizational change are not easy to implement and guide in the complex, unpredictable and turbulent environment in which contemporary organizations operate. We must look to many sources of wisdom and insight when helping our leader clients formulate strategies that are responsive to the challenges of tippy vulnerability. I believe that some of the sources of wisdom are to be found in the full appreciation of evolutionary processes, rugged and dancing landscapes, and warped planes that seem to dominate the world of 21st Century organizations and challenge the courage and creativity of 21st Century leaders and their coaches.

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