



**NONTRADITIONAL
RESEARCH**

Rhythms of Learning

Patterns That Bridge Individuals and Organizations

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Most studies that examine patterns of individual and organizational learning stem from similar European American epistemological assumptions. To enrich this approach, this article begins with a considerably different foundation—the Native American medicine wheel—and constructs a learning framework that has distinct advantages for contexts that are dynamic, diverse, and interconnected. The framework encourages us to perceive, to think, and to create in ways that are multifarious rather than dichotomous, circular rather than linear, longitudinal rather than cross-sectional, and integrative rather than compartmental. We are only beginning to understand how different perspectives may all contribute legitimate insight about the same phenomena; this article celebrates this growing realization.

Marco Polo describes a bridge, stone by stone.

"But which is the stone that supports the bridge?" Kublai Khan asks.

"The bridge is not supported by one stone or another," Marco answers,
"but by the line of the arch that they form."

Kublai Khan remains silent, reflecting. Then he adds: "Why do you
speak to me of the stones? It is only the arch that matters to me."

Polo answers: "Without stones there is no arch."

—Italo Calvino

As Marco Polo elegantly notes above (Calvino, 1972), understanding the realities of a situation lies neither in an awareness of the pieces nor in an awareness of the whole. With either perspective alone comes a sacrifice that constrains potential learning. This sac-

rifice is comparable to using a camera with only a zoom lens or only a wide-angle lens; each tells a different and incomplete story. Similarly, we cannot understand much about organizations through the eyes of only top management or only the janitors, and we

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cannot understand either of these perspectives by attending only to measures of an organization as a whole. Thus we learn from Marco Polo how understanding increases with attention given to multiple levels of analysis (cf. Roberts, Hulin, & Rousseau, 1978). Unfortunately, however, the dichotomous choice—zoom lens or wide-angle lens—frequently underlies the epistemological foundations that support our learning about organizations (Kosko, 1993). It is not uncommon for businesses and business schools alike to consistently bump into boundaries that separate micro- and macroperspectives (deBono, 1991) or that separate differentiation and integration of thought, as if one could exist without the other (Rand, 1967).

The tendency to employ only the microscopic or only the telescopic viewpoint during the process of learning often leads to biased judgments (cf. Shepherd, 1993), to myopic thinking (cf. Wheatley, 1992), to misleading questions (cf. Mitroff, 1987), and so forth. Neither view is inherently better than the other for informing interpretations, yet the tendency to dichotomize and favor one over the other is fairly well ingrained in much of Western thought (e.g., Hartmann, 1991; Kierkegaard, 1843/1986), with roots that lead notably to Aristotle (1952). Although more expansive frameworks of learning (e.g., Kolb, Rubin, & Osland, 1991; Senge, 1990) are emerging to challenge the boundaries of myopic thinking, few embody the inclusiveness and fluidity that certain indigenous cultures have been developing and using for millennia (e.g., Cajete, 1994). The purpose of this article is to examine one of these long-standing epistemological foundations—the Native American medicine wheel—that transcends many dichotomous, linear, cross-sectional, and compartmental premises. This foundation is then used to reexamine the landscape of individual-organizational learning in a more multifarious, circular, longitudinal, and integrative manner. The intent is to provide alternative conceptions that may enhance discussion and broaden the focus of those who study and practice in this area.

To help realize this intention, the article unfolds in the following way. The next section identifies the need for integration within mainstream individual-organizational learning conversations. Part of this section reviews selected studies to delineate the current focus of attention among these phenomena, although intendedly little effort is directed toward recounting the details of such work. The reason is not to downplay the emerging richness of this literature, but rather to

avoid becoming cognitively fixated within these patterns of thought. Instead, the intended flow of the argument throughout the article is more circular than linear (cf. deBono, 1992), bringing readers out to an alternative perspective and then back to rethink some of the mainstream assumptions. The more common approach of building argumentation directly and linearly on mainstream ideas has greater potential of constricting alternative viewpoints by forcing their assimilation within dominant patterns of thought. A linear path also does not adequately represent the inherent qualities of the medicine wheel in the first place. Thus to write the article linearly would miss an opportunity to depict the circular pattern of the medicine wheel. Because many of the ideas presented in the article originated long before current academic interests in integrative approaches to learning began, their value manifests more clearly when we give them adequate space to capture our attention.

The third section of the article explains the medicine wheel (also referred to as wheel). This section hopefully instills an appreciation for the interconnectedness and dynamism that the wheel embodies. If successful in doing so, we comprehend more clearly how learning can unfold in a spiral—continually revisiting orientations within a circle of learning but at ever-increasing levels of understanding. For example, seeing the wheel unfold over time as a spiral enables us to reframe the idea of organizational hierarchy around levels of development. What tends to disappear in designs derived from the wheel are many of the distinctions between individual and organizational learning that derive from dichotomous, linear, cross-sectional, and compartmental perspectives. Consequently, learning becomes the song and dance that everyone engages in for every relationship throughout the course of every day. Organizations continuously learn because relationships continuously grow; previously accepted divisions fade, and conceptual boundaries are reconfigured in a more unified and dynamic way.

The fourth and final sections of the article attempt to interweave the previous sections to promote some rethinking of individual and organizational learning. Rather than directly compare the wheel to particular studies, the fourth section presents four representative and interconnected keystones of learning that derive from the current individual-organizational learning literature. By employing the perspective of the medicine wheel, each keystone is then reconfigured and described as a rhythm of learn-

ing. The transformation from keystones to rhythms is intended to embody a shift in thinking from separate compartments of learning to dynamic relationships (cf. Bateson, 1979). The final section provides a review and discussion.

THE ACADEMIC LANDSCAPE OF LEARNING

Literature on individuals learning within organizations is considerable; it runs directly or indirectly through most streams of psychological and organizational behavior research. Literature on organizational learning is comparatively less, emerging primarily within the last decade. For example, it is explicitly absent from the *Handbook of Industrial and Organizational Psychology* (Dunnette, 1976) and from the *Handbook of Organizational Behavior* (Lorsch, 1987). Despite this historical difference in emphasis, organizational learning has recently received increasing attention as scholars challenge and reformulate existing assumptions and relationships. Evidence of these efforts appears in reviews that scan the landscape of mainstream European and American ideas (e.g., Huber, 1991; Levitt & March, 1988) and in special journal issues, such as several in *Organization Science* (Cohen & Sproull, 1991; Meindl, Stubbart, & Porac, 1994). Such special issues present an array of positions on the nature of organizational learning and add detail in the process of doing so. Most of these sources have roots in important works that highlight links between other individual and organizational processes (e.g., Cyert & March, 1963; Katz & Kahn, 1966; March & Simon, 1958; Newell & Simon, 1972). To include learning among these processes was probably only a matter of time.

Scholars are beginning to illuminate connections that weave together individual and organizational perspectives on learning. For example, both Huber (1991) and Barnett (1994) have contributed insightful syntheses of organizational-learning literature that enrich our understanding of the individual-organizational borderline in different ways. Huber (1991) provides a staged model of the learning process that, together with his attention to definitions of learning, adds precision and a push toward dynamism. Alternatively, Barnett (1994) illuminates convergence among various scholarly perspectives by showing how different definitions, concepts, and processes of organizational learning have common threads. She claims that "there is enough similarity across perspec-

tives that theoretical integration and advancement should become realistic possibilities" (pp. 17-18). Integrative efforts like Huber's and Barnett's begin to build a mosaic among ideas that otherwise appear increasingly fragmented.

Examples of important studies that have begun to focus on the individual-organizational gap include Cohen (1991), Corner, Kinicki, and Keats (1994), Harris (1994), and Fiol (1994). Cohen (1991) illuminates contributions that psychological studies offer to our understanding of organizational learning. Specifically, he draws from the work of Singley and Andersen (1989) about the "transfer of learning" and discusses the roles of procedural and declarative memory in the transfer. Corner et al. (1994) address the context of strategic decision making and build a "multilevel parallel process model." Their efforts enable a reconceptualization of individual and organizational learning: parallel flowing streams with particular points of exchange. Harris (1994), by contrast, shows how both individual- and group-level phenomena can be embodied simultaneously within a framework of organizational culture. He highlights this type of integration by showing how cultures' manifestations unfold within individual sense-making experiences. Finally, Fiol (1994) offers an intriguing look at the concept of "unified diversity." Here she examines interpretive processes of individuals and how they coexist with each other in collective learning situations. As you will later see, Fiol's ideas, from among those represented here, blend most harmoniously with the medicine wheel framework.

Another stream of research that is relevant to this conversation involves the flurry of recent studies attending to the design, formation, and performance of learning organizations. Already, the term *learning organization* is arising in so many contexts as to become quickly amorphous. Perspectives that contribute to our understanding of learning organizations include frameworks that provide wide-angle views (e.g., Senge, 1990); practical applications that provide more focus (e.g., Garvin, 1993; Lundberg, 1989); and social, global examinations that attend to broader contexts in which organizations operate (e.g., Jaccaci, 1989).

At the same time that both internal and contextual interconnections are coming to the forefront, we are also noticing an expansion in attention to relevant organizational boundaries (Shrivastava, 1994). One example of increasing attention to external interdependencies falls under the rubric of total quality, where efforts are directed toward managing variation

to consistently improve (e.g., Dobyns & Crawford-Mason, 1991). The idea of consistently improving over time directly concerns itself with processes of learning, yet has emerged among many U.S. organizations only in the last few decades. Already, as Shrivastava (1994) indicates, the scope of this attention is considered too narrow and too exclusive of other interconnected stakeholder interests (cf. Labich, 1994; Stewart, 1993).

The Concept of Learning

Drawing from the example of total quality, when attempts to improve are pervasive throughout a company, organizations are usually thought to learn. If such attempts occur only within small pockets of an organization, certain individuals are thought to learn. Somewhere between the two lies a threshold for consideration of where individual and organizational learning merge. Simon (1991) claims that "an organization learns in only two ways: (a) by the learning of its members, or (b) by ingesting new members who have knowledge the organization didn't previously have" (p. 125). Huber (1991) suggests that "changing the range of potential behaviors" is the defining characteristic of learning. His interpretation helps us to understand that the learning process need not be intentional and need not lead to improvement. Challenging our assumptions about learning, as both Simon and Huber do, helps to identify implicit conceptual terrain that until now may have restricted our ability to think clearly about individual and organizational learning. An alternative approach toward the same purpose is to start with a framework whose fundamental tenets do not promote dichotomous thinking in the first place; this approach underlies the next section of the article.

By beginning from a different starting point, one that is more inclusive and multifarious rather than exclusive and dichotomous, the intention is to broaden our considerations of learning rather than ingrain more deeply the tracks that existing dominant perspectives have cut. The opportunity to stand outside these perspectives, conceive some fundamental assumptions differently, and then return to mainstream thought is the path that we will traverse in the remainder of the article (cf. deBono, 1992; Musashi, 1974). One reason to pursue this path is consistent with the belief that individual-organizational learning rhythms are dynamic and somewhat elusive and thus do not receive adequate attention. Most mainstream models seem to enable less thinking about learning in

ways that are as integrative, because they rest more heavily on compartmental, cross-sectional, linear, and dualistic cornerstones. It may be that the experience of attending to separate aspects of learning overemphasizes special cases (Kosko, 1993), creating constraints that limit our ability to adequately conceptualize dynamic interconnections.

LEARNING DERIVED FROM THE NATIVE AMERICAN MEDICINE WHEEL

Just as in the case of the arches and stones described at the beginning of the article (Calvino, 1972), an adequate description of the medicine wheel must include attention to components as well as attention to patterns that define the larger entity. As a preface to this discussion, I first must acknowledge respect for those who have provided the basic ideas of the medicine wheel: the generations of Native Americans who have preceded us and, more specifically, the particular Native American elders, scholars, and teachers whose names appear throughout this section. My role in this conversation between cultures is to serve as an interpreter—to attempt to create a bridge of ideas that will establish points of intersection between these worlds of thought, which may otherwise remain unseen (cf. Hall, 1994). My experiences with the medicine wheel have taught me that layers of understanding continue to unfold as long as one lives. Thus the story that I tell will never represent all that there is to know about the medicine wheel—nor would anyone's story. However, it does reflect a position earned from years of study of both mainstream patterns of learning and the cosmology of the medicine wheel, years of interaction with scholars who pursue learning issues from both mainstream as well as indigenous perspectives, and years of experience employing practices consistent with the wheel.

Within this article, only a surface layer of meaning from the medicine wheel can be shared and related to processes of learning. Interested readers can pursue the wheel in greater depth, either indirectly by reading more stories of the wheel in motion (e.g., Black Elk & Lyon, 1990; Meadows, 1989; Storm, 1972; Suzuki & Knudtson, 1992), or directly by designing and participating in activities that offer firsthand experience (e.g., Andrews, 1990; Sun Bear, Wind, & Mulligan, 1991). Notice, however, that just as when learning to play chess, to construct buildings, or to function effectively in a foreign culture, readings do not provide the op-

portunity to move beyond an informational, or novice, level of understanding. Development beyond this level requires experiencing the naturally occurring contextual relationships of the phenomena of interest (cf. Greeno, 1989).

General Overview of the Medicine Wheel

From an epistemological perspective, the Native American medicine wheel is a foundation for lifelong learning that has developed slowly over thousands of years. In many ways it represents integrative learning par excellence, for its referent transcends all dichotomies, narrow perspectives, and disconnected, short-term ideas that embody much of Western thought (Jacobs, 1990). To assist the presentation, I offer a depiction of the wheel in Figure 1 as a skeleton for discussion. The drawing of the wheel is not the wheel, however (Korzybski, 1958). Rather, the wheel is the living, interdependent web of recurring cycles and developmental sequences that comprise our world, that is, the world in which all living creatures learn, interact, and give way to future generations. The wheel includes the understanding that derives from experiencing the world in this manner; it is the knowing—and not just knowing about—patterns of interdependence and dynamism, yet it includes the patterns of interdependence and dynamism themselves (cf. Capra, 1983). Thus to confuse the drawing in Figure 1 (i.e., the map) as the wheel is a critical mistake. The difference is comparable to confusing a map of Chicago with Chicago; regardless of how well one learns the map, it means very little if this level of understanding is not brought to life by experiencing Chicago. The map is only a referent; thus it may help point directions, facilitate conversation, enable shared meaning, and motivate exploration of the real thing. However, neither the figure nor the words used to describe the wheel is the wheel, although they do provide an important starting point.

In its skeletal form, the map of the wheel displays a cycle of change among the four directions, with each direction bearing part of the meaning that comprises a whole. Whereas the directions may relate to the stones to which Marco Polo and Kublai Khan refer, the arch in this situation is only known by experiencing the patterns that the directions form when in motion and in sync. The skeleton of the wheel includes the four principal directions—east, south, west, and north. It also includes the limitless directions between these points through which one travels when follow-

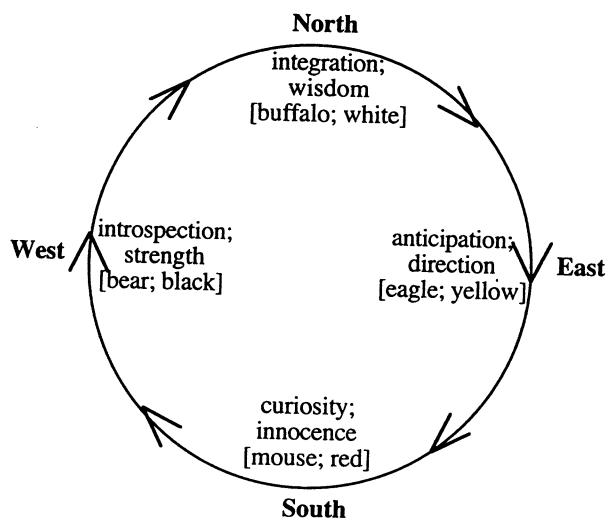


Figure 1: A Map of the Medicine Wheel: Circular Rhythms of Learning

ing the circular path, for example, from one sunrise—beginning in the east—to the next. (For a more detailed description of the wheel, see Meadows [1989]. In his representation, you will find more layers of complexity that can facilitate richer understanding.) The experience of each direction brings with it certain lessons that, over time (i.e., through experience, reflection, and integration), reveal broader and deeper meaning, both individually and collectively.

Native Americans possess some distinct tribal interpretations of particular directions of the wheel (Rael, 1993). For example, some tribes employ unique symbolism to reflect particular contexts, beliefs, and purposes. However, the basic parameters of the wheel, for example, its circularity, interconnectedness, multi-faceted array of life's lessons, and dynamism remain fairly consistent across Native American tribes. These uniformities of structure are also consistent with other indigenous people from around the globe who attend to the natural world for patterns of meaning and for rhythms of learning (Stein, 1992). One form of tribal symbolism is the association of particular colors with the cardinal directions to highlight certain meaning. For example, the colors in Figure 1 are the pattern employed by the Cherokee but not by the Lakota. Within this configuration, white in the North represents seasonal snows of winter as well as the white hair that comes in the winter of age. However, for the Lakota, red in the North represents a spiritual dimension that begins the "good red road," linking the wisdom of the North to the innocence of the South (Lame

Deer & Erdoes, 1992). The Maori from New Zealand—living in the Southern Hemisphere—employ much the same logic as the Cherokee with respect to the placement of white, but for them white is placed in the South where they experience their winters (J. Webster, personal communication, October 11, 1994). These variations compare somewhat with the kinds of differences associated with the dialects and accents comprising a common language.

The wheel, with its many unique representations, derives from empirical observation (Wall, 1993; Wall & Arden, 1990), which highlights the ongoing need to attach learning to experiences and contexts. Thus the circular pattern of the wheel exemplifies many cycles of nature: physical, mental, emotional, spiritual, social, cultural, environmental, and so forth. Examples of these cycles include the rising and setting of the sun each day, the changing moon phases that accompany physical processes such as menstruation each month, the coming and going of the seasons that unfold each year, and the changing of the guard as one generation makes room for the next. From cycles of life's interconnected events—atomic to societal and cosmic—similar paths unfold from origin to fruition to maturity to death and then to rebirth. Seeing interwoven cycles operating each and every day is the beginning of understanding of the medicine wheel.

These cycles portray how learning is a recurrent process, one that can potentially spiral to higher levels of development with each passage around the wheel. Thus the wheel embodies circularity and interconnectedness in learning, rather than the relatively linear and compartmental designs that underlie many American and European educational programs (e.g., Gatto, 1993). In the wheel, a learner is continually enmeshed in the process of learning from life's teachings, rather than expecting learning to occur at only particular times and places, such as at school or by reading a book. These epistemological premises emphasize an empirical path for each and every person and require developing the skill of attention to life's connections (Wall & Arden, 1990). Learning about learning in this manner enables transcendence of monochronic time (i.e., of contrived time that imposes schedules, agendas, and structure on events and processes in ways that often do not correspond to their natural rhythms (cf. Hall, 1981; Hall & Hall, 1990).

Indigenous peoples' "notion of circular time gives rise to a notion of cause and effect that is fundamentally different from the one by which Western civilization functions" (Suzuki & Knudtson, 1992, p. 188). For

example, whereas the Hopi understand learning as an "inside-out" process unfolding at an individual's own pace (Hall, 1994), American and European models of education tend to emphasize group learning, in which time is held constant (e.g., within courses and semesters) and the amount of learning consequently varies. This contrasts with natural systems in which learning is constant and time varies (e.g., Adler, 1988). In the natural world, one cannot keep moving up grade levels under the pretense of learning unless and until one actually learns; "cramming" the night before any of life's real tests simply makes no sense (Covey, 1991). In the medicine wheel, one cannot advance to higher levels of learning because a clock or a calendar says it is time. Learning from the medicine wheel is not artificial, not superficial, and not cosmetic.

Dynamics of the Wheel: Moving Among the Directions of Learning

The description that follows, which begins in the East and follows a clockwise path, derives from Cherokee and Ojibway interpretations (Meadows, 1989; Sun Bear, 1992; Sun Bear, Wind, & Mulligan, 1991). This description takes a Northern Hemispheric view, which, as indicated previously, differs from cultures in the Southern Hemisphere who experience many of the same cycles reversed. For example, the "cosmogram" of the Bantu tribe in Africa depicts the sun moving counterclockwise (e.g., Fu-Kiau, 1991). All of these indigenous interpretations derive empirically from observable patterns that interweave inductive and deductive skills. As an important consequence, learners begin to appreciate the validity of other peoples' perspectives (W. Liu Shueng, personal communication, September 5, 1994) and the importance of all perspectives to the wheel.

East. The East marks the place of new beginnings, for example, as in the birth of a new day and the rising sun. East is the direction that holds vision, the space in the cycle of learning where new ideas and propositions arise. Organizationally, East holds the creative and innovative energies from which strategies emerge. East is the place for the formulation of projective patterns that underlie day-to-day perceptions, patterns that remain unseen for those who possess only a short-term focus (cf. Jaques & Clement, 1991; Rapoport, 1994). In the East, learning transcends range-of-the-moment sensations in order to see pe-

ipherally and beyond current moments in space and time (cf. Hamel & Prahalad, 1994; Jaques, 1986). The eagle symbolizes the East because its mannerisms and behavior embody important capabilities correlated with this direction. Animals serve as living examples that help to provide inductive learning sources within contexts that learners experience daily. Thus for those who do not experience the richness of outdoor contexts, such examples cannot provide much help to enable understanding. In Native American cultures, however, the eagle helps to inform through observation, interaction, and stories, important attributes of the process of acquiring vision. Notice that eagles possess the capacity to fly slowly and high above the terrain—beyond the detail of the landscape—and see great distances that other animals can never perceive.

As indicated earlier, colors also characterize each direction. "The color of each directional power on the Medicine Wheel . . . is an expression of how its inherent qualities are likely to affect us" (Meadows, 1989, p. 66). Each direction carries frequencies of energy that correlate with its respective lessons. Here again, characteristics of learning are modeled through contextual aspects that may be experienced in the life of the learner. The East is filled with yellow, a color whose frequency not only represents the sun, but also the skin color of relatively visionary populations in Eastern parts of the world (e.g., Hofstede, 1991; Yoshida, 1990). Consistently, the characteristics of each direction mirror patterns of learning that have an empirical base; this process in itself helps to establish epistemological roots that prompt the learner to recognize the importance of linking concepts with contexts. As Steve Little Coyote commented, we cannot "know grizzly bears by only reading about them in National Geographic" (personal communication, October 27, 1992). His message is potent: If ideas are not grounded in experiences, understanding inevitably remains incomplete.

East to South. Moving from the East to the South means bringing visionary ideas and anticipations up close for examination. Represented by the color red, the South is associated with the heat of the midday sun, and embodies the curiosity that is more prominent in the earlier stages of life when emotions are coming into bloom. Thus South not only brings close examination of ideas but it also brings forth emotion and passion that, if not adequately balanced, can cause the best of visions to go awry. This learning orientation

shifts attention to issues of action and implementation. South manifests aspects of the mouse and instills appreciation for the virtues of exploring with one's nose close to the ground and of getting one's hands dirty in operational detail of an otherwise expansive idea. South is the "place of innocence and curiosity. With this energy we are able to joyfully search for those things that will help us to manifest the visions of the East" (TwoTrees, 1993). In translating a vision into tactics through the shift from East to South, we begin to understand how learning on the wheel is not the experience of separate, ungrounded activities, but of interdependent, unfolding experiences.

South to West. Taking a vision embellished with its emerging detail into the learning orientation of the West means to shift perspectives from curiosity to introspection to find the personal and social resolve to take responsibility for an unfolding plan. In the West, learning gives the outward appearance of slowing down, as exemplified by both the hibernation patterns of the bear and the absorptive property of the color black. "Here we take our ideas and sit with them in the quiet of solitude so that we may scrutinize and explore how these ideas and visions can fit into our lives" (TwoTrees, 1993). Important outcomes of learning that emerge in the West are strength of conviction and self-assurance, and perhaps also "shared mind" within an organization (Schrage, 1990). Just as the bear retreats into hibernation as a natural process rather than out of fear, and just as black naturally absorbs the frequencies of other colors, the learning that takes place in this direction involves reflective activity and a fair amount of "letting go" of attachments formed earlier on the wheel's path (cf. Steinem, 1992). This introspective space is often absent in many organizations and educational programs when it comes to providing for a full range of learning needs. Fortunately, we are beginning to understand more clearly how education and maturation depend on balancing extraspection with introspection (Bennis, 1994).

West to North. Continuing the path of learning from the West into the North depicts moving to the time of winter, having traversed the freshness of spring, the heated flurry of summer, and the calming retreat of fall. For those arriving in the North, the lessons of learning teach compassion and empathy toward others who currently travel the wheel at earlier stages. Leaders emerging in the North possess the strength to

give to others what they may need to develop further along their paths. To Native Americans, reverence toward old age has an empirical foundation: Elders possess wisdom that helps those at earlier stages of development make sense of the information and knowledge in their lives. The North also teaches how ideas run their course and begin to die. Thus, often just as strength from the West adds confidence, signs of deterioration and atrophy begin to show as the North slowly moves into view. For people who are unprepared for the lessons of the North, these signals may trigger fear. Nevertheless, there comes a time to make room for the next generation of people, ideals, ideas, and so forth. Socially, these lessons tend to trigger processes of elimination, as both organizations and societies attempt to get rid of what is growing old. The manner in which the process unfolds, however, differs remarkably among cultures, and cultures that follow the wheel tend to possess more grace for dealing with the elderly. Furthermore, the elderly in such cultures tend to possess a greater capacity to give away what they have acquired on their own journeys to those they see in need. A significant difference between organizations who learn from the North and those that do not may be that the former find processes of change more natural as they learn to shed aging ideas and make room for growth (e.g., Sherman, 1993). For example, Labich (1994) suggests that unsuccessful organizations possess an overabundance of "glue," which makes them unable to part with the past.

For those who acknowledge the patterns of the North, the process of sharing or giving away its wisdom is modeled in the life of the buffalo, who still commands respect for all that it has given and continues to give. Within the value structure of this perspective, it is a matter of integrity both to use all parts of a buffalo when it gives its life so that others may live, and to respect this interdependence with the buffalo by protecting buffalo herds and enabling them to replenish and to sustain (Wall & Arden, 1990).

North to East. The passage from the North back to the East brings unique experiences and lessons that help to complete the ongoing circles of learning. One lesson is represented in the replenishing aspects of life, in which the old moves on to make way for the young, just as leaves share their beautiful colors before falling to the ground so that new leaves can come forth in the spring. The apparent dormancy of North's winter reveals, on closer examination, inner processes of re-

newal from which the next cycle of life emerges. This pattern certainly fits the continually recurring experiences of business organizations whose successful flurries fade unless rebuilding activities occur. The transition from North to East brings with it the recognition to continue cycling around the learning trail, as new contexts wax and wane endlessly.

Employing the Wheel on the Path of Learning

For Native Americans who understand dynamism within conceptual development (cf. Keil, 1979), words are written down less often than for Americans and Europeans, because the act of writing them too often restricts further understanding about the referent to which words point. Instead, understanding is itself understood as a continually unfolding lifelong process of attention, data gathering, and integration. Concepts continue to grow, to shed erroneous baggage, to reformulate, and thus to unfold in meaning through experiences and conversations. This pattern mirrors the energy of a spiral (e.g., from the massive scale of a galaxy, to the medium scale of a hurricane, to the small scale of New Zealand's Kaponga fern), cycling through levels of richer understanding. Stories are told repeatedly and passed between generations because they serve as linking mechanisms that weave contexts into patterns that provide meaning for concepts.

Interwoven patterns of experience and communication provide the ingredients that help to fill concepts, as compared to memorizing words and their relationships (Gatto, 1992). For example, getting a Lakota elder to describe the meaning of a concept may take hours as she or he conveys an interwoven network of stories, compared to the few seconds needed to convey a disembodied dictionary definition (K. TwoTrees, personal communication, January 7 through May 4, 1993). Whereas a dictionary conveys only a place among interrelated words (Rand, 1967), stories convey a place among interrelated experiences (cf. Bateson, 1979); whereas a dictionary attempts to remove context and presume objectivity, stories attempt to keep context intact without pretending objectivity. Rollo May (1991) describes the U.S. society's dire need for the level of learning that stories can provide by reattaching people to the world in which they live. The medicine wheel facilitates conceptual development by establishing linkages to personal experiences, by attempting to increase rather than to decrease context, and by representing learning as a lifelong path

traversed uniquely for a single person yet in concert with others. For those who live their lives on the wheel, the integrity of concepts and of learning processes is critical, and the power of language is treated with great respect.

With increased understanding and experience of the medicine wheel, additional interpretive positions emerge between the four cardinal directions and within the outer perimeter toward the center of the wheel. Each wave of complexity adds more refined insight from enriched patterns and their previously invisible relationships. More profound levels of understanding continue to unfold across a lifetime of experience traveling around the wheel. The wheel framework is somewhat comparable to the arduous and never-ending path that the Samurai travels (Musashi, 1974). As Musashi reveals, the strategist soon learns to learn from all things and to build understanding each step of the way. Thus the path of the Samurai and the dynamics of the medicine wheel both represent quintessential frameworks of learning, embodying rhythms of movement, interdependence, and development from all angles.

The word *medicine*, as an adjective to wheel, presages the many subtle ways in which it can help mend, enrich, and strengthen systems of various levels. Its unfolding layers of meaning offer the novice learner an ease in getting started as well as the potential for lifelong growth. This process compares to the way novices learn to play the game of chess—starting with very little understanding of chess pieces, of moves, of strategies, and so forth (Newell & Simon, 1972). In chess, as in life on the medicine wheel, the path continues to advance to higher levels of understanding as long as one continues to experience the interconnectedness of patterns that unfold. The ideas of mending, enriching, and strengthening are central in understanding how the medicine wheel can help to bridge learning between individuals and organizations. Before exploring such bridges more directly, it may help to briefly examine the integrative power of circular patterns relative to linear patterns. Understanding this distinction is critical to appreciate how individual and organizational learning coalesce on the wheel.

The Integrative Power of a Circle

Ancient, hard-won indigenous images of nature's sacred cycles and of human obligations to maintain them need not threaten cherished Western visions of

time. But they could provide useful common ground between Western and indigenous thought. They could help to guide Westerners toward a scientifically sound vision of circular time: a psychologically integrating, rather than fragmenting, fusion of time's circular and linear aspects. What we might call time's "spiral" could help transform our society by transforming our views of ourselves. (Suzuki & Knudtson, 1992, p. 180)

Often what appear as separate categories of information about learning reflect parts of circular, recurrent patterns. Circular patterns of learning have existed for thousands of years and within various cultures around the world (e.g., Fu-Kiau, 1991; Matthews, 1989; Meadows, 1989) because they have substantial and sustaining validity. One difficulty in understanding integrative patterns is that they require extending beyond the level of information, that is, beyond "bits" communicated by others, to more synthetic, contextual positions that hint of wisdom (e.g., Capra, 1988; Newell, 1989). Understanding integrative, circular patterns requires transcending logic and linear thought to reveal synthesis and dynamic interdependence. For example, synthesis helps to reveal questions about functional suitability and aesthetics in Calvino's arch (1972) that otherwise remain hidden. Functional, aesthetic questions extend logic in the direction of intuition and do not detach context. Applying this to the arch would generate evaluative questions about use and harmony with a particular environment. One may question whether the bridge will support the weight of continued heavy usage or whether its location will restrict the flow of water during flooding conditions, the view of sightseers toward distant mountains, or the migration of salmon that follow the water's path below. The interconnectedness of a nonlinear and synthetic contextual perspective reveals relationships that otherwise remain mostly invisible (S. Mehta, personal communication, February 12, 1991). This helps to explain how Native Americans live in relative harmony with their environment (e.g., Sun Bear, 1992), and why they attend farsightedly to "seven generations to come" when considering the consequences of current decisions (McCarthy, 1991).

Circular, interdependent patterns add synthesis to analysis but do not eliminate analysis. Synthesis requires skill in dealing competently with higher levels of abstraction, each derived rather than detached from contextual experiences. Such conceptual prowess parallels the cognitive powers of integration and time span that Jaques and others claim are essential for

strategic leadership (e.g., Jaques & Clement, 1991). It is the leader who must understand beyond current, range-of-the-moment awareness (Rand, 1982) to make linkages that help others continue their own development. It is the leader who, for example, can discern stuckness on the wheel as well as imbalance of directions represented within discussions of critical issues (cf. Mitroff, 1987). This level of understanding can enable movement out of lethargy, can motivate direction out of chaos, can encourage letting go to enable the birth of new perspectives, and thus can instill hope, openness, and energy instead of fear, insecurity, and myopia. These are all part of the medicine of the wheel's potential, echoing aspects of what Bennis (1989) claims is missing from American society. In the absence of an epistemological foundation that interweaves conceptual and experiential patterns, however, effective leadership and harmonious organization are less likely to arise.

The difference between linear and circular patterns of understanding pertains to the essence of learning from the medicine wheel, that is, to epistemological roots that encourage interdependence between context and concepts as well as across time. A practical value of a circular framework lies in its capacity to link individual with organizational learning phenomena. These linkages, however, originate at an epistemological level. The next section attempts to make some aspects of this level visible by examining manifestations of the medicine wheel within issues of individual-organizational learning. These connections involve four rhythms of learning (derived from the wheel) that correspond to four keystones (derived from mainstream literature). The rhythms and keystones, although not collectively exhaustive, provide a reasonable range of ideas for discussion.

FROM KEYSTONES TO RHYTHMS OF LEARNING

Four learning keystones provide the preliminary framework for this section. Each represents a composite of knowledge that pertains to a certain region of the individual-organizational learning terrain. The set was selected with two guiding criteria in mind: One was to capture an important theme of current theoretical development, and the other was to help bridge the gap between individual and organizational learning issues. Thus one criteria intends to enable repre-

sentativeness of mainstream literature and the other intends to enable scope.

Each of the keystones is listed and briefly described in Table 1. The first involves the organizational context in which learning occurs: in the relationship between performance and improvement. Keystone one highlights the way in which concern for improvement is generally held conceptually and operationally distinct from performance. The second keystone involves the linear path from novice to expert and addresses the convergent sequences of learning that move from a state of ignorance and incompetence toward an ideal state of expertise. The third keystone attends to the process of variation reduction, the predominant logic applied to change within situations involving organizational learning. This keystone seemingly derives from cross-sectional thinking, which favors the contraction of activities around a given goal or norm. The fourth keystone highlights some of the educational categories that arise within contexts of learning, which are generally disassociated from each other.

An important premise of this article is that keystones derived from literature on individual and organizational learning reflect an epistemological foundation that differs from the medicine wheel. The former foundation gives rise to conceptualizations of the learning process that tend to be considerably dichotomous, linear, cross-sectional, and compartmental. Consequently, models derived from this foundation inevitably underrepresent components of learning that are integrative, contextual, longitudinal, synthetic, exploratory, and so forth. Bringing these keystones within the purview of the medicine wheel requires a shift in the assumptions that beget an understanding of the process of learning. The medicine wheel foundation enables reframing the keystones as rhythms of learning. The difference in meaning between keystone and rhythm helps to capture what the shift implies (*American Heritage Dictionary*, 1985):

keystone: "the central, wedge-shaped stone of an arch that locks its parts together";
 rhythm: "movement characterized by the regular recurrence of different conditions."

To help inform this shift in perspective, Figure 2 illustrates both a cross-sectional and a longitudinal perspective on learning; the latter perspective manifests some of the characteristics of the wheel. Figure 2a depicts individual learning as primarily distinct from organizational learning, with an area of intersection

Table 1
Keystones of Learning

Keystone	Traditional Description
1. Separation of improvement from performance. (Derives from <i>dichotomous</i> thinking.)	Performance requires focus of previous learning whereas improvement requires exploration beyond boundaries of previous performance; conceptually, performance and improvement are generally distinct.
2. Convergent path from novice to expert. (Derives from <i>linear</i> thinking.)	Progressions from novice to expert tend to ingrain patterns of experience from earlier stages, increasing speed and accuracy of performance, while converging on smaller ranges of potential responses.
3. Predominance of variation reduction. (Derives from <i>cross-sectional</i> thinking.)	An emphasis on the reduction of variation within learning processes is common and generally persistent.
4. Information, knowledge, and wisdom as discontinuous aspects of learning. (Derives from <i>compartmental</i> thinking.)	Information, knowledge, and wisdom are usually conceptualized discretely, somewhat parallel with the novice-to-expert path.

between the two. Notice how the static separation within a Venn Diagram captures the dichotomous undertone of learning as individual or organizational. From this perspective, dynamic interdependencies remain mostly invisible, whereas linear, cross-sectional, and compartmental ideas arise reasonably easily. Thus the Venn-Diagram map reinforces thinking about learning in fixed categories such as classes, courses, semesters, departments, and so forth. Boundaries within environments of learning, and boundaries in general, are consistent with this type of epistemology (cf. Perry, 1970).

Figure 2b offers a more spatially and temporally interdependent perspective toward learning, consistent with the epistemological premises of the medicine wheel. This depiction differs from Figure 2a in at least two ways. First, the boundary between individual and organizational learning fades, because the learning of each individual in relation to other individuals becomes the structure of learning comprising the organization. This perspective mirrors the understanding of the strength of an arch: derived not from the strength of each individual stone, but from the relationships among the stones. The organization becomes a tapestry of learning relationships between and among all learners (cf. Hurst, 1991). At any one point in time, each person occupies a location, that is, a direction, on the organizational wheel, as well as a level on what might be considered the organizational spiral. However, each relationship among individuals within the organization represents a mutual and continually unfolding potentiality for learning. A second way that Figure 2b differs from 2a is that the conceptualization enabled by Figure 2b is dynamic, depicting a continual interplay of forces, for example, between

performance and improvement, between novice and expert, and between reduction and amplification strategies. In this representation, a healthy organization requires both oscillation between and harmony among such forces.

The differences between Figure 2a and 2b are differences of kind rather than differences in degree. People trained from an *either-or* foundation (e.g., Peikoff, 1967) or from an *and* foundation (e.g., Kosko, 1993) are likely to have difficulties making clear sense of the other's conceptualization. Figure 2b results in different implications about learning and in different consequences from the design of corresponding learning environments. Organizational and individual learning are inextricably intertwined in 2b, revealing multiple overlapping paths of learning within a dynamic spiral. For example, with each passage around the wheel, a learner has the potential to rise to higher levels of development relative to other learners. Note, however, that a learner also may stagnate, letting others catch up or move ahead in terms of level of development. Thus, at any one point in time, an organizational spiral consists of different people located not only in different directions on the wheel (as seen from above the spiral) but also at different levels of development (as seen from the side view as shown in Figure 2b).

In the context of processes of learning, the wheel suggests movement among directions for everyone over time, just as it suggests balance among directions at any single point in time. An organization would not benefit by having all learners reflecting in the West, just as it would not benefit by having an imbalance of attention to any other direction. The construction of a learning environment based on the premises of the

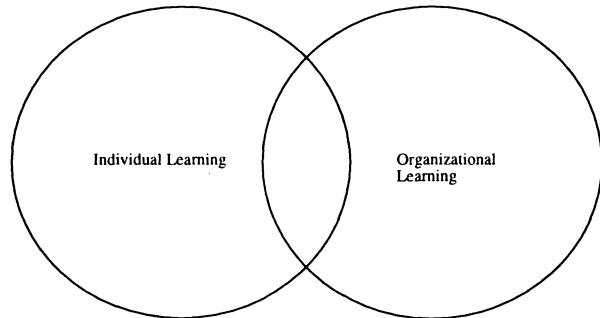
wheel is intendedly fluid, continually reshaping itself in tune with contextual changes and internal dynamics (cf. Wheatley, 1992). Thus, whereas the keystones in Table 1 primarily fit the conceptualization depicted in Figure 2a, considerably different learning configurations manifest from 2b. Before discussing how each keystone changes when compared to assumptions that are consistent with the medicine wheel, it may help to preview all changes at once. Thus Table 2 lists the four rhythms of learning that correspond to the keystones. These rhythms provide ingredients that enable rethinking some of the mainstream ideas about individual and organizational learning and their crossroads. The following discussion examines shifts in thinking that occur—from keystones to rhythms—when we begin with the medicine wheel foundation. We start with a brief overview of each keystone and then turn our attention to the difference that the medicine wheel makes.

Rhythm 1: Experiencing the Shift From Dichotomous to Multifarious Thinking

Effective performance for a sustained period of time demands focus of attention and precision in behavior (cf. Sternberg, 1985). A salesperson who is distracted during a phonecall is likely to lose track of a conversation, just as a writer who does not stay on task for sufficient periods of time will likely diminish in productivity. Expectations of effective performance in both of these examples call for the direction of behavior toward a chosen end (e.g., Locke & Latham, 1990) and the elimination of distractions and randomness in the process of achieving the end (e.g., Dobyns & Crawford-Mason, 1991). On the other hand, when the purpose of an activity is improvement of performance, rather than performance itself, the process usually involves experiencing performance regions that are not within one's current repertoire (e.g., Lessem, 1991). Attention is shifted away from the task, and often out of the performance context, when improvement becomes the focus. The purpose of improvement is to enable a linear ratcheting to a higher level of performance at a future point in time by enhancing response capabilities. In these instances, exploring previously unexplored terrain, that is, increasing variation, is conceived as a virtue (e.g., Quinn, Faerman, Thompson, & McGrath, 1990).

Performance and improvement often remain conceptually antithetical in both the design and the con-

A. Mainstream Perspective: Dichotomous, Linear, Cross-Sectional, and Compartmental.



B. Medicine Wheel Perspective: Multifarious, Circular, Longitudinal, and Integrative.

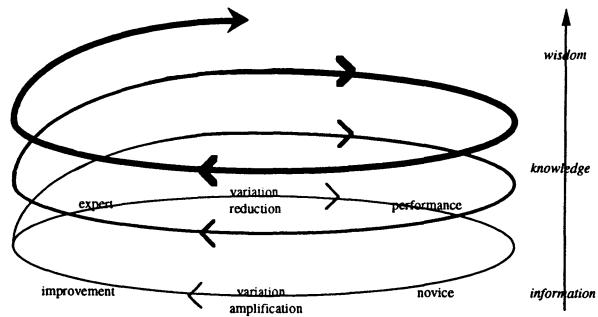


Figure 2: Alternative Depictions of Learning

scious experience of organizations and societies. People who are in the act of performing, for example, a sales team, an orchestra, a baseball team, an airline crew, a board of directors, and so forth, seldom consciously attend to improvement while engaging current activities. "Show time" is "show time," and learning is usually left until later, if not left to happenstance. Attending to improvement during performance is usually thought to divert attention and thus restrict the natural flow of an activity (e.g., Csikszentmihalyi, 1990, 1993). Conversely, people in the act of learning (e.g., in a classroom or training program) seldom consciously attend to performance, because it follows from dichotomous thinking that performance necessitates engagement with a different context. Attending to performance while trying to learn ways to improve is usually thought to detract from the ability to stay mindful of new input (cf. Langer, 1989).

The processes accompanying performance and improvement are generally experienced differently because they are initially conceptualized differently, that is, they originate from epistemological assumptions that keep them in separate conceptual compartments. This has consequences in many subsequent situations, for example, when people treat Whites inappropri-

Table 2
Rhythms of Learning That Enliven Traditional Keystones

Keystones of Learning (focus on separate learners)	Rhythms of Learning (focus on patterns of relationships)
1. Separation of improvement from performance. (Derives from dichotomous thinking.)	Learning underlying every relationship in an organization. (Derives from <i>multifarious</i> thinking.)
2. Convergent path from novice to expert. (Derives from linear thinking.)	Circular path that includes novice and expert. (Derives from <i>circular</i> thinking.)
3. Predominance of variation reduction. (Derives from cross-sectional thinking.)	Continual oscillation between variation reduction and amplification. (Derives from <i>longitudinal</i> thinking.)
4. Information, knowledge, and wisdom as discontinuous aspects of learning. (Derives from compartmental thinking.)	Developmental spiral from information to knowledge to wisdom. (Derives from <i>integrative</i> thinking.)

ately different from Blacks or men inappropriately different from women. In such instances, we can often trace behavioral differences to boundaries in the mind (Hartmann, 1991). The natural mental state during performance requires moving beyond such segmentation—a state of awareness that takes place when novices begin to learn. For example, when learning to drive a car, novices must attend consciously to the stick shift, the clutch, the brake pedal, the rpms (or sound of the engine), the speed, and so forth. Segmentation of attention, however, should disappear with practice as previously separated activities become integrated subconsciously. Socially, many people's thinking tends to remain segmented, as if at a novice level, and experience ingrains ruts rather than promotes integration.

The prescribed mental state during learning usually calls for introspection, reflection, integration, repetition, and so forth, most of which are thought to deter effectiveness when they arise during performance. For example, during a tennis match is not the best time to attend to the nuts and bolts of tennis, and during a meeting is not the best time to practice basic skills of communication. This focus of attention is thought to detract from an appropriate awareness of context, for example, an opponent's moves, an approaching storm, or the changing momentum within a meeting. Performance improvement generally calls for close examination of requisite behaviors and their sequences. Focus on improvement thus tends to emphasize conscious attention to details and to causal connections (e.g., "remember to do A before B when condition C arises"). Consequently, there commonly is a preference to attend to improvement out of context, for example, before or after, rather than during, a tennis match or sales presentation.

A premise operating throughout this section is that the manner in which we think about these processes may serve either as a catalyst or an obstacle to understanding and to learning (e.g., Cooper & Cox, 1989). With respect to performance and improvement, one obstacle is the underlying dichotomy that presumes limited capability for effectively engaging multiple challenges, such as performing and improving, simultaneously (cf. Hall & Hall, 1990). An epistemological foundation that avoids this dichotomy offers an alternative prospect. The medicine wheel, being multifarious rather than dichotomous (Kosko, 1993), suggests that all individuals in an organization can conceivably avoid the separation of improvement and performance. The first rhythm of learning considers this possibility.

As derived from the medicine wheel, the potential for learning lives within every performance and every relationship. This conceptualization makes every person in an organization continually responsible for activating their part of the wheel—both in performing and improving. No part of performing becomes continually unavailable for improving, and no part of improving lies outside the boundaries of relevant performing. The emphasis turns away from the separation of performance and improvement, away from the individual and the organization as separate entities of learning, and toward learning relationships (cf. Bateson, 1979) that continually challenge the system to stay in motion. Relational concepts such as sharing, listening, and caring become accentuated in every organizational process and central to our understanding of learning. The design of organization becomes primarily the design of partnerships, with everyone owning a role within "networks of expert novices."

Expert novices are those "who are sound masters of the procedures needed to learn new things" (Miles, 1988, p. 30). An advantage gained from the expert-novice network is a reduction in potential myopia and stagnation that often sets in with the emergence of assumed expertise. When myopia occurs, mutual listening diminishes in most relationships, which inevitably decreases the potential for insight; when stagnation occurs, people assume that no learning is occurring and so no learning occurs. Whereas "in the beginner's mind there are many possibilities, in the expert's mind there are few" (Suzuki, 1970 p. 79). Relationships built between and among expert novices represent the embodiment of lifelong learning potential where all involved continually approach each experience and each encounter as an opportunity for growth. Every encounter in such a network holds the challenge of sustaining novice expertise on both sides of a relationship, whether between two executives or between an executive and a janitor. Consequently, no one presumes expertise in any context; instead, all people mindfully aspire toward expertise within more and more relationships as an ongoing organizational process.

Consistent with this rhythm of learning, all individuals continually attend not only to their own position on the wheel of learning and to their own level of development on the spiral but also to the position and level of those with whom they interact throughout the course of activities. Within a network of expert novices, only the essential skills of learning become automated over time (Sternberg, 1985), and perhaps even those are reconsidered periodically. The bridge between performance and improvement disappears when learning becomes what everyone does. It is likely that people have much larger capacities for learning than they currently utilize, which remain an untapped resource within today's dichotomous expectations. It is also likely that organizations have greater potential capability to enhance intellectual development of everyone throughout the organization (cf. Jamieson, 1991). In many respects, learning among all relationships points an organization toward the broadly integrative concept of wisdom more than toward the restrictive boundaries of expertise (cf. Bigelow, 1992; Meacham, 1983). With this in mind, Rhythm 2 examines how we might rethink the traditional novice-to-expert path to entertain the possibility of moving toward wisdom.

Rhythm 2: Experiencing the Shift From Linear to Circular Thinking

The novice-to-expert path is essentially linear in its conceptualization, and convergent around specific areas of knowledge and competence (e.g., Quinn et al., 1990). The path generally necessitates focus within a particular context to enable automatization of interrelated skills (Sternberg, 1985). Automatization creates room for attention to contextual aspects of situations in which such skills apply. For example, learning the fundamentals of advertising, chess, or sales creates cognitive room to attend to one's competitor, to unfolding strategies, to environmental changes, and so forth. This path to expertise in a given area requires about 10 years to traverse. As Simon (1991) discusses, "we know that no one—literally no one—becomes a world class expert in any professional domain with less than ten years of full-time dedication to learning.... The evidence for this time requirement is overwhelming" (p. 129). There also appears to be no skipping of stages along the novice-to-expert path. Companies attempting to achieve world-class standards of performance repeatedly find that the challenge is considerable, however hard or fast they try to push (e.g., Dobyns, 1990; Halder, 1991). In a world of continually changing contexts involving high degrees of interdependence, pushing harder on a convergent path becomes increasingly dysfunctional in the long run by promoting myopia and constancy (Jacobs, 1990).

Two characteristics of the novice-to-expert path that pertain to the shift from linear to circular thinking are (a) synthesis of information "bits" into patterns (e.g., Newell, 1989; Newell & Simon, 1972) and (b) automatization of behaviors from earlier positions on the learning trail (e.g., Sternberg, 1985). The first characteristic describes how enhanced performance of an activity occurs when requisite subtasks are learned and integrated. This pattern of synthesis applies to a broad array of activities, including learning to swim, to drive an automobile, to think critically, and to write publishable papers. All include a linear set of mechanical sequences that one learns to relate in logical ways with increasing speed and accuracy toward predetermined ends. The second characteristic describes how the focus of attention shifts as this process repeats. Automatization of subtasks, which initially require conscious attention, allows the mind to attend to in-

creasingly greater contextual information. For example, as one advances in the skills of tennis, the focus of attention shifts away from detail that occupies the mind of a novice, such as placement of feet, grip on the racket, and follow-through of serve. For the maturing tennis player, just as for the maturing executive, attention to bits becomes increasingly automated, leaving room for awareness of broader contextual and strategic concerns.

This seemingly advantageous progression from novice to expert, however, creates disadvantages in a rapidly changing world because it does not involve relearning, that is, it does not enable rethinking, reexamining, or reformulating what was previously learned (cf. Argyris & Schon, 1978). To achieve a mindset pliable enough to incorporate relearning—while continually learning—it is essential to understand the value of circular processes that can trigger attention to earlier stages of one's developmental path. This type of learning resembles learning on a higher or *metalevel* (Schoenfeld, 1983; Sternberg, 1985; Wilensky, 1981) and calls for learning about the process of learning (e.g., Argyris, 1977). Learning that does not incorporate circular patterns inevitably begins over time to ingrain experiences, rather than to promote learning from such experiences. This difference spells trouble for anyone or any organization who begins to fall out of sync with changing times.

One way of enriching the novice-to-expert keystone is by thinking with an element of circularity. This does not imply that expertise is unnecessary or unimportant in the design of learning contexts, it just offers a more expansive view and a more pliable process. Circular thinking requires rethinking the role of breadth of knowledge and reassessing the potential value of understanding interdependencies among contexts. Circular thinking enables a learner to make connections within environments that would otherwise go unexplored (deBono, 1992). Widening horizons and demanding attention to interdependence requires actively employing both inductive and deductive logic to a degree that most people do not engage (Botkin, Elmandjra, & Malitza, 1979). By drawing from the wheel in this manner, organizations and educational institutions would place more weight on linking alternative experiences and alternative issues among all learners' paths. For example, exploring other functional areas, other cultures, other belief systems, other values and perspectives, and so forth would be a valued activity because it enriches understanding,

rather than a devalued activity as conceived within short-term standards like efficiency.

Adding circularity to the novice-to-expert path challenges the assumption that long-term learning should promote only expertise. Circular paths involve unsuspected experiential twists and turns, because they engage environments that would otherwise not be explored (deBono, 1991). Each twist and turn generates new "tests" that provide potential revelations for learning (cf. Bennis, 1994; Campbell, 1949, 1988; Collins, Brown, & Holum, 1991). Unfortunately, such twists and turns are often conceived as wastes of time when viewed from linear, convergent assumptions. Linearity and convergence promote step-by-step advances toward particular and predefined goals and thus discourage peripheral vision and adventure. It is never quite clear, as it is when one pursues the linear path toward expertise, what potential lessons lie around the corner in a circular adventure into the unknown. This path calls for a higher tolerance both for ambiguity and for uncertainty. Consequently, circular rhythms of learning are mostly inconsistent with short-run performance objectives—long-range learning usually suffers when only immediate performance is sought. This occurs, for example, when new salespeople are expected to perform as experts straight out of college, or when newly minted Ph.D.s are expected to make significant and immediate publishing contributions. In both instances, exploring peripheral contexts may be critical in the long run to provide a richer foundation for future competence. However, in societies like the United States, where there is lesser appreciation for long-term patterns of development (Hofstede, 1980, 1991; Yoshida, 1990), the benefits of circular learning paths are assuredly more difficult to see.

Circular patterns of learning that facilitate rethinking earlier stages of learning provide opportunity to avoid some of the negative attributes of automation. By employing circular patterns, a person not only begins to acquire some behaviors that may lead to expertise but also begins to acquire a broader range of contextual linkages that may enrich such behaviors. Thus one learns more patterns of *fit* between potential courses of action and the contextual configurations in which they may unfold. Through circularity in learning, one gains greater fluidity in the process; without such fluidity, responses can more easily become fixed and thus dated as contexts change.

Designing cycles into learning processes reduces the extent to which learning is bureaucratically locked

into written documents, such as rules and standard operating procedures. When learners are continually challenged to rethink earlier positions given the demands of new contexts, it becomes clearer that written documents deprive organizations of opportunities to include newly unfolding contextual relationships in their memory (cf. Walsh & Ungson, 1991). Instead of anticipating one best way to learn, an environment of circular learning paths increases the need for ongoing collaboration in all relationships (Schrage, 1990). These patterns challenge some of the assumptions underlying institutional learning in organizations that still embody static mechanisms of bureaucracy, hierarchy, and so forth. Reducing the stranglehold of these forms of control may further reduce tensions inherent in the dichotomy between individual and organizational learning (cf. Hampden-Turner, 1981; Hofstatter, 1979). Circular rhythms of learning demand greater consideration of ways to increase variation of learning experiences. This demand draws from the flow of the medicine wheel and places considerable value on continual exploration and integration among multiple contexts. The issue of expanding versus contracting learning opportunities points to Rhythm 3, which shifts our thinking from cross-sectional to longitudinal assumptions.

Rhythm 3: Experiencing the Shift From Cross-Sectional to Longitudinal Thinking

For decades, much organizational logic primarily emphasized the reduction of performance variation and the convergence toward right answers. The reduction of manufacturing costs, service-delivery times, error rates, and start-up times all assume convergence. The foundation of this logic includes short-term goals that take a predominantly cross-sectional view of learning, emphasizing what we already know. A longitudinal perspective requires consideration of longer term standards like balance, maturity, harmony, and survival. Often these call for the postponement of immediate gratification and the persistent continuance of experiences that may only come to fruition at later points in time. Careful consideration of long-term development has not been a forte displayed in much of the mainstream educational thought, organizationally or societally (cf. Bennis, 1989; Jacobs, 1990).

The constrictive ways in which many organizations and institutions employ variation reduction in learn-

ing processes create difficulties in the longer run. We are only beginning to recognize the inherent need for diversity within organizations and educational institutions for long-term effectiveness (e.g., Sherman, 1994). Figure 3 illustrates an application of this idea, showing one way that variation amplification and reduction interact over time. This example comes from a physicist who uses it to explain how the paths that particles in quantum mechanics travel are similar to the paths people follow through a park (Davies; 1980). In both cases—from micro to macro—there are many commonly traversed, direct paths. However, there are also paths with the same beginning and ending points that reveal widely different, nonlinear courses. The relevance to a learning context is that too often we attend only to the well-worn paths and fail to recognize the value of variation. Cross-sectionally, variation often seems extraneous and inefficient. However, longitudinally, variation often provides new information needed for a person, organization, or species to survive (cf. Weick, 1979). Through the path of variation, we often discover what we do not yet know.

An assumption accompanying the prescription for variety is that most productive, long-term learning paths involve a balance of variation amplification and reduction (cf. Levinthal, 1991). For example, students who travel abroad for a semester of learning often return to their home base and understand the path that they were previously traveling in more enriched ways. Appropriate learning paths for other learners often remain invisible and rejected by those who have already made their way from Point A to Point B. Consequently, for example, many people do not recognize the future value of studying overseas. In many organizations and educational institutions alike, people are often herded along a few traditional learning paths that certain others have previously plodded (cf. Adler, 1988; Gatto, 1992, 1993). This common practice suggests why variation reduction is the prominent strategy employed educationally: "to get other people to learn the right way" (cf. Langer, 1989; Langer & Piper, 1987). This does not suggest that variation reduction is inappropriate, just that its overuse is detrimental in the long run.

The third rhythm of learning involves balance between the amplification and reduction of variation. This corresponds to the concept of requisite variation (Ashby, 1956), for example, of sustaining sufficient consistency and core competence while enabling exploration to keep in touch with changing contexts.

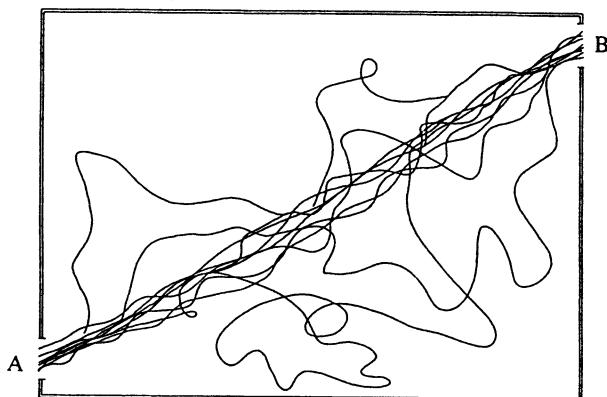


Figure 3: Paths Through a Park (Davies, 1980)

This balance helps to account for harmony among different learners within the same organization. Like the natural alternating rhythms of breathing, long-term learning in organizations, as well as in societies, calls for some learners to explore new situations whereas others help to sustain consistency. Perhaps to some degree, all learners must assume some responsibility for shifting between focus and exploration. Longitudinally, this balance underlies most processes in nature—another observation linked to the medicine wheel. Over time, rather than promote processes that singularly eliminate variation, for example, expecting right answers in all learning situations, a balance of variation reduction and amplification allows for changing roles in different relationships as people explore multiple stages of learning around the wheel. To achieve such a balance, people at all levels of organization must more openly recognize and admit the limits of what they know (cf. Blum, 1993).

Emphasizing balance of variations over time resembles an orchestra conductor who must work to sustain harmony among various alternating energies. The large number of interrelated oscillations within an organization requires considerable attention to temporal, spatial, and social flows. Understanding and orchestrating the flows of people in different directions of learning, among continually changing learning relationships, and across multiple levels of learning is an area of which we know very little. Nevertheless, the survival of both organizations and societies may depend on more understanding of, and balance among, these rhythms (cf. Botkin et al., 1979). Balancing variation—for learning purposes—is a challenge that will require rethinking other concepts such as failures and mistakes, which grow out of as-

sumptions supporting variation reduction around particular end states. Nelson (1992) emphasizes how teachers concerned with enabling students to think for themselves can benefit by identifying the reasons why students make what are normally labeled mistakes. He claims that too often we dismiss such performance without learning from it, even though in the mindset of the performer the mistakes often make perfectly good sense. If we are conditioned to ignore such variation under the guise that it consists only of errors to eliminate, we miss opportunities for learning and growth. To the degree we can better understand the sense that mistakes make, both teachers and students stand to benefit.

The need for variation among learning paths is probably as critical for long-term organizational and social survival (e.g., Harris & Moran, 1987) as it is for survival in the natural environment. Variation enhances the likelihood that any system will survive as conditions change. For example, a forest with only one kind of tree will more likely perish if a disease arises that attacks that particular kind. However, a forest with multiple kinds of trees will more likely survive such a threat by enabling different trees to take up the slack provided by the kind whose end is imminent. This example is common to most systems and adds validity to the many directions of the medicine wheel. Uniformity increases the risk of demise when new threats arise, as does getting stuck in a particular direction of learning.

Educationally, the tendency toward uniformity manifests itself when educators give learners theories that someone else formed inductively through their own experiences and observations. Such a convergent learning path often creates an imbalance toward the memorization of words and away from the development of practical intelligence informed by experiences that give meaning to words. Further, it limits the range of potentially new observations and responses that may be needed as contexts change more rapidly. For learners in these situations, previously digested ideas often lack the nutrition, that is, the contextual connections, that come from generating theories on their own. We may be less able to learn from others' words than we often suspect (W. Liu Shueng, personal communication, September 5, 1994). Consequently, the long-term health of a system may be at stake in ways that go unseen, when requisite variation (Ashby, 1956) among directions of learning and among learning paths is low. Too often, paths are restricted because standards such as consistency, reliability, and stan-

dardization outweigh learning. To more carefully consider how systems of learning might better employ processes that amplify variation, the following section highlights the role of wisdom within processes of learning. Wisdom often means more about admitting what we do not know than it does about espousing what we know (Blum, 1993; Meacham, 1983). Consequently, wisdom often promotes processes of adventure, play, and exploration that otherwise never occur. A critical challenge in moving in this direction, however, is in helping people confront the fear of removing myopic blinders (Capra, 1993).

Rhythm 4: Experiencing the Shift From Compartmental to Integrative Thinking

Distinctions among information, knowledge, and wisdom pertain to the ability to respond at greater levels of effectiveness to changing contexts. Certain distinctions correspond to stages of development along a novice-to-expert path, although not in all cases. For example, we tend to associate expertise with extraordinary competence within a narrow range of information or knowledge. Wisdom, however, seldom arises in formal learning contexts and seldom appears as a goal of educational programs at any level. This section explores the potential for adding wisdom to learning contexts by comparing its relationship to information and to knowledge and then by examining the value it can add within such contexts. An assumption motivating this task is that the path of continually following the circularity of the medicine wheel is ultimately the path toward wisdom. The following definitions from the *Oxford English Dictionary* (*OED*) provide a starting point. The *OED* enables backtracking the usage of concepts to distinguish subtle intended differences that may have become blurred over the decades (cf. *American Heritage Dictionary*, 1985). Thus perusing the *OED* (1971; emphasis added) will enrich one's understanding of these definitions:

- information: knowledge communicated concerning some particular fact, subject, or event;
- knowledge: *familiarity gained by experience; the fact of knowing a thing, state, etc.*;
- wisdom: *soundness of judgment in the choice of means and ends; capacity of judging rightly in matters relating to life and conduct.*

As indicated in the italicized sections, information is knowledge communicated about something particular. This highlights two points. First, information

can be acquired without experiencing the referent phenomenon or entity of interest. For example, information can flow second hand through reports of others' firsthand experiences, or it can flow thirdhand through sources that are even more detached from experiences. Second, information points to the particular rather than to the general; its referent is narrow in scope, delineating a unique space and time configuration, such as a particular event.

The input that informs knowledge is experience. Knowledge necessitates filling in concepts not only with words (i.e., sounds) but also with perceptual linkages that ensure that meaning is grounded in reality. Consequently, what serves as knowledge for one person may serve only as information for another person if that person has insufficient experiences. For example, one can acquire information *about* grizzly bears from a National Geographic TV special, but one cannot *know* grizzly bears without experiences with them; knowing (i.e., knowledge) remains outside the realm of learning without experience (S. Little Coyote, personal communication, October 27, 1992). This difference underlies many of the social problems to which U.S. schools contribute (Gatto, 1992, 1993). In school contexts, it is common to impart book smarts without providing experiential linkages that inform knowing (cf. Sternberg, 1985). Students can acquire only words or symbols; they must then find contextual connections to provide meaning for such "empty concepts" (Rand, 1967). It is not uncommon for students to memorize vast arrays of information, have no idea what such information really means (i.e., in context), and yet make decisions and take actions on such an ill-informed basis. This is a process that is likely to contribute to social ill health. Knowledge is attached to the world of experience, and communication of knowledge is possible only when people share common experiential foundations (cf. Collins et al., 1991). A world detached from experience can easily become more interested in words than in the referents to which they point (e.g., Bennis, 1989). In the process of learning from the wheel, avoidance of such detachment is one of the fundamental lessons.

The tendency to generalize about members of another gender, another race, or another culture is an example where detachment from experience contributes to social problems. Without experiencing the range of variation that makes a group of people real, overgeneralization becomes an unfortunate consequence of relying on information instead of knowledge. When this occurs, people think of groups of

people as all similar, because they do not have awareness of the many experiences that make individuals within the group differ. Thus they often react with stereotyped prejudice, treating all members of another group similarly, which is not grounded in unique experiences that would tend to increase understanding of differences. Hodgkinson (1983) refers to this faulty thinking as a "typing error"; proponents of the medicine wheel attribute such thinking to detachment from the perceptual world (e.g., Black Elk & Lyon, 1990; Wall & Arden, 1990). The potential for such prejudice may be more prevalent with the emergence of technologies, such as television and computers, that detach words from the experiential referents to which they point (cf. Mander, 1991). This occurs when people hear (secondhand) about experiences between women and men or between Blacks and Whites on a television talk program and then apply the same logic to the other gender or another race without examination of within-group differences. Typing errors can create vicious circles (cf. Masuch, 1985) when such conclusions not only influence comments and reactions in subsequent encounters with other individuals but influence others to think and act the same. Losing sight of the important difference between information and knowledge has potentially dire consequences that detract from the advantages that technology can bring to processes of learning. The key issue in avoiding such consequences, however, lies mainly within epistemological rather than technological premises.

Another potential social problem arising from the confusion of information, knowledge, and wisdom involves the process of accumulating knowledge without integrating it. This manifests when people know lots of different things without being competent at much of anything, that is, the accumulation of knowledge without integration (e.g., Peikoff, 1988). The number of educational institutions wrestling with curricular integration attests to the realization that information, knowledge, and wisdom often unfold in compartmental and fragmented ways. For example, business students often take many business courses, which after graduation provide little help in understanding their subsequent organizational real worlds. The issue of detachment remains a concern; however, the failure to effectively integrate also arises. The link between knowledge and wisdom, rather than the link between information and knowledge, addresses this issue of integration. Whether wisdom or expertise results from education depends on the scope of integration, with expertise deriving from narrow scope

and wisdom deriving from broader scope. When learning is guided by the broad, contextually linked foundations of the medicine wheel, the path holds greater promise of leading to wisdom.

Wisdom extends knowledge by enabling soundness of judgment in choosing ends as well as means (cf. Meacham, 1983). So, where expertise enables choices within the rules of a predetermined game, wisdom enables the choice of games and the choice of values around which games are played (e.g., McWhinney, 1992). Wisdom embodies elements of "street smarts" (Sternberg, 1985), where choices not only seek to link actions to contexts effectively but seek to promote effective choices of contexts. With wisdom, there is less detachment between what one knows, what ends one chooses to pursue, how one acts to achieve desired ends, and which contexts one attempts to operate within (e.g., Branden, 1985). Consequently, wisdom enables choices within a broad array of situations, although it may not enable the detailed choices within particular situations that expertise would. For example, expertise may enable effectiveness in decisions about particular pricing factors or about particular foreign investment opportunities; however, it is less likely than wisdom to enable general effectiveness across a broad array of daily business activities. An expert is the person we call on when we know what the contextual circumstances demand; a wise person, on the other hand, is the one we want when we do not understand the circumstances. Wisdom enables us to maneuver more effectively through conditions of uncertainty and ambiguity, where peripheral attention and exploration are as important as focus.

One reason that wisdom is less highlighted in studies of individual and organizational performance (cf. Bigelow, 1992) is that scholars studying learning usually take for granted the ends that others have chosen or that they themselves have chosen. This scenario calls for expertise and a narrowing in focus of attention, rather than for wisdom and the skills of charting unmapped seas. As a consequence, studies of decision making and problem solving generally downplay if not ignore the broad levels of integration that comprise wisdom. This exclusion persists even while we increasingly recognize the need for more integration within educational systems around the globe (cf. Botkin et al., 1979; Harris & Rochlin, 1989). The processes of learning that lead to wisdom are multifarious, circular, longitudinal, and integrative. However, the designs of current organizations and educational systems too frequently manifest epistemological foun-

dations that are dichotomous, linear, cross-sectional, and compartmental. The value of pursuing the medicine wheel lies in the prospect of generating alternative designs that hold the promise of wisdom.

COMBINING MICROSCOPIC AND TELESCOPIC PERSPECTIVES

What one sees at the top of the mountain is not what one sees at the bottom. Without this wisdom, we close our minds to all that we cannot view from our position and so limit our capacity to grow and improve. But with this wisdom, there comes an awakening. We recognize that alone one sees only so much—which, in truth, is not much at all. This is the wisdom that opens our minds to improvement, knocks down prejudices, and teaches us to respect what at first we cannot view. Never forget this lesson: what you cannot see can be seen from a different part of the mountain. (Kim & Mauborgne, 1992, p. 127)

What the medicine wheel brings to our understanding of individual and organizational learning is comparable to the parable shared by Kim and Mauborgne (1992). We realize through the parable that wherever we stand on a mountain, we get a different perspective of the valley below. No one perspective is the right one, and only from a multitude of perspectives can we begin to approach understanding of the valley. Nevertheless, people continue to believe that their unique position on the mountain and thus their perspective of the valley is most valid if not the only point of view that is valid. Experiencing a multiplicity of perspectives is one of the paths that enlightens the learner about the wisdom of the mountain (cf. Torbert, 1991). This parable informs us that at any point in time, the whole story is contained only in the integration of many perspectives—not within any one perspective. To understand the valley below, we are compelled to gather many perspectives in addition to the one derived from our own location and to continue listening to other perspectives and integrating them endlessly.

The parable of the mountain serves as a useful analogy for applying the medicine wheel to patterns of learning that involve individuals and organizations. The lessons of the wheel speak of multifarious, circular, longitudinal, and integrative rhythms that continually weave individuals into organizations, and organizations into the mindsets and collective actions of individuals. Separations really only come from perspectives that stop the wheel to examine its com-

ponents or structures out of context. In the interdependent and dynamic contexts that organizations and individuals share, learning possesses an array of meanings that are richly complex, given the epistemological premises of the medicine wheel. First, learning becomes the essence of each and every relationship throughout the course of every day; it is not something that happens only when performance is put on hold or only in certain contexts. Second, learning involves circular paths that are inherently somewhat uncertain; it is not comprised of only myopic, linear paths that converge toward predetermined ends. Third, over time learning involves continual oscillations between the amplification and reduction of variation; this rhythm cannot flow naturally under conditions that sustain an imbalance. Fourth, learning potentially moves through broad integrations over time—on a spiral path that increasingly approaches wisdom. Organizations are consequently conceived as networks of relationships with different people at different levels and with the responsibility of each person to sustain the dynamism of the spiral through their own learning relationships. In this respect, the spiral is similar to the mountain of which Kim and Mauborgne (1992) speak, where across the organization some people attain more integrative perspectives but everyone contributes an important perspective.

Cognition Derived From the Wheel

Each of the four rhythms of learning discussed in this article originates from the epistemological premises of the medicine wheel. The rhythm associated with multifarious thinking is inherent in the limitless directions on the perimeter of the wheel, which in combination continually enable us to enrich understanding. Thus, although the four cardinal directions add primary colors to our learning (i.e., adding curiosity, introspection, synthesis, and vision), all directions are necessary to complete the color spectrum of the wheel (cf. Jamieson, 1991). The more spokes (i.e., directions or perspectives) that are missing, the less smoothly the organization can roll. This rhythm underlies the call for diversity, via “God’s mix,” that Max DePree (1992) shares when he acknowledges Herman Miller’s need to have people with a wide range of backgrounds and perspectives “not because we do them a favor but because they make us whole” (M. DePree, personal communication, April 12, 1993).

The rhythm associated with circularity is inherent in the structure of the wheel and manifests throughout

the natural world. Physically, spatially, and temporally, the pattern of the circle repeats itself in endless ways, providing numerous empirical learning opportunities to understand the need for circularity and interdependence. The circularity of the wheel suggests that learners must stay in motion, moving around the various directions over and over again, not only to acquire the basic skills of learning, but also to enrich understanding of what otherwise becomes static and myopic. Perhaps, as Simon's work (1991) implies, individuals and relationships within organizations both require thousands of cycles around the wheel to appreciate the real significance of circular patterns and to begin to resonate its harmony. Much of the mainstream business world is only now beginning to experiment with circular designs for organization, a form that Native Americans and other indigenous populations throughout the world have empirically recognized and employed for millennia. "Circles are designed to create cooperation, cross-training and maximum flexibility. It's much better than the old hierarchical, restrictive 'it's not my job' organizational structures of the past" (M. B. Price, personal communication, March 20, 1993).

As the wheel turns, we also notice dynamic rhythms that we can only discern over time (cf. Wheatley, 1992). Thus the wheel informs us of longitudinal oscillations that comprise our world and enrich our understanding of learning and of designs for organization. From subtly rhythmic processes like breathing to blatantly rhythmic processes like the interplay of dry and moist forces and hot and cold forces within storms, and from seemingly simple symbols like the Yin and the Yang (cf. Capra, 1983) to complex symbols like the representation of DNA, we continually observe the interplay and oscillation of contrasting forces (e.g., Lawlor, 1991). Within the wheel, we cannot help but notice the interdependency between the South (perception) and the North (intuition), as well as between the East (prospection) and the West (introspection). In the realm of learning, the wheel permits us to appreciate a similar balance among contractions and expansions. We are taught to understand the empirical reality of the phrase "what goes around comes around." Without experiencing temporal interconnections, such words of wisdom remain only words.

Longitudinally, the turning of the wheel also reveals broader integrations that are relevant to processes of learning and to the design of organizations. This turning rhythm, found within the spiral and shared by many different cultures (e.g., Cowan, 1992; Gattuso,

1993; Matthews, 1989) enables us to see that the wheel is not stagnant as it turns. Instead, and underlying the potential within all relationships that comprise an organization, the turning of the wheel promotes an unfolding of levels of learning. As depicted in the spiral, the wheel is in motion. Consequently, an organization designed with this rhythm has the potential to keep everyone moving to sustain the life of the system—a pattern quite similar to forces within hurricanes, within tornadoes, and even within a tub of draining water. A moving circle forms a spiral. Organizations that can capitalize on the dynamics of the spiral rhythm may be more likely to avoid ruts in learning, to gain respect for their elders and for wisdom, and to survive in the long run by aligning with changing environments (e.g., Serwer, 1994).

To benefit from an awareness of these rhythms, however, scholars of organization and of learning must attempt to continually develop the capacity for longitudinal and integrative thinking. Without these capabilities, the rhythms and their potential benefits remain invisible (cf. Blair, 1991). Without these capabilities, organizations will be likely to continue to structure themselves hierarchically and compartmentally, oblivious to long-run consequences of doing so (cf. Jacob, 1995). Without these capabilities, cross-sectional research will be likely to sustain its position of importance, myopic education will be likely to endure, and societies' inability to overcome the restrictions of mental dichotomies like male and female, capitalist and socialist, old and young, rich and poor, will be likely to continue to plague the world. It may be an appropriate time to reconsider some of the sacred underlying assumptions of American and European thought that restrain the development of such capabilities. In the bigger picture offered by the perspective of the wheel, this challenge does not mean eliminating mainstream thought, but only enriching it to enhance its pliability, its humanity, and its scope.

Future Challenges

One of the predominant motivations for this article is to encourage enriched conversation about learning as it pertains to our organizations and educational institutions. The call is to identify, discuss, and perhaps reformulate assumptions of learning more actively and hopefully more productively. The challenges that remain for scholars addressing learning phenomena are only as limited as the foundations

that guide the conversation. Thus some people may feel that we know enough about these issues already to forge ahead into the next century without more soul searching. From the perspective of the wheel, this would be true if the world were static. However, from the wheel perspective the world is never static, and we must continue to learn about our processes of organization as well as our processes of learning. Within the challenge lies excitement for some and fear and trepidation for others; clearly there is room for both perspectives and a need for the balance that these perspectives enable. The energies to maintain the old and to change to the new are themselves in need of balance.

Predominant challenges in the coming years include not only the enrichment, alteration, or replacement of ideas surrounding the medicine wheel but the development of implementation possibilities for experimenting and empirical avenues for testing its ideas. Empirically, the medicine wheel predates most other frameworks, philosophies, and cosmologies dealing with learning. It possesses thousands of years of empirical formulation and support. However, as the world continues to change, new empirical testing is certainly warranted and needed to keep the wheel in motion. Thus, for example, it is paramount that we more actively track living examples of circular organization—both in tribal contexts and in current business contexts. Each offers a rich but differing source of understanding, and neither should be discarded in favor of the other. The number of indigenous tribes that remain alive and healthy throughout the world offers testimony to the sustaining educational value of circular models (e.g., Stein, 1992; Maybury-Lewis, 1992). Alternatively, the number of emerging organizational forms that are less dichotomous in culture, less linear in process, less cross-sectional in focus, and less compartmental in work flow offer other testing grounds for ideas derived from the medicine wheel. With the 1990s becoming an era of multiple alternative forms of organizing, this time period offers great potential to test ideas that previously were limited to tribal contexts. The challenge in each context—tribal and current business—is to formulate questions that are themselves not limited by mainstream assumptions.

Another challenge confronting the emerging conversations between cultures about foundations of learning has to do with responsibility and respect. Many Native Americans are understandably leery about sharing their ideas with people who have continually tried to drive them into extinction (cf. Lyons

et al., 1992). The fear is partly that the ideas will be distorted and disfigured as they are assimilated into another culture's perspective. Those who hold great respect for their ancestors feel a distinct responsibility that other Americans and Europeans will need to appreciate to engage and sustain these conversations. Gaining the trust of indigenous populations is not something that mainstream societies have done well—if at all—in previous generations. It may be time to rethink our assumptions even at this conversational level. Not only do they affect our potential ability to learn about learning from those who have done it reasonably well in the long run, but they affect our ability to understand human integration at a very fundamental, life-supporting level. To the degree that we can confront such experiences gracefully and productively, we may set in force rhythms of learning that will benefit generations to come.

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