Chapter IX

Avoiding Epistomological Myopia

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Abstract

Organizational approaches to knowledge management are unlikely to lead to organizational wisdom unless the organization increases its awareness of factors that contribute to epistemological myopia--a nearsightedness that limits what and how the organization knows and how it learns. Contributors to this myopia include organizational learning pathologies, an unquestioning acceptance of fundamental concepts, such as time, and measuring success as the absence of failure. In many instances, the vocabulary, language, and business methods used by an organization, society, or culture reify these pathological factors and thereby further hamper the potential for learning. By raising our awareness of these contributors and the factors that support their reification and continued acceptance, we seek either to avoid these limitations or to develop corrective lenses that can extend the organization's vision and enable it to resolve issues with greater clarity. The conceptual frameworks used in this chapter are drawn from four distinct areas of study: systems theory, organizational knowledge and learning, the organization as a learning community and community of practice, and linguistic relativity. The underlying theme is the organization as an

inquiring system--a system that seeks to learn and become more knowledgeable. Because learning processes are culturally biased, and the bias is reinforced by a culture's values, language, and vocabulary, the premise is that these biases and values constrain the organization's epistemological methods and processes.   The potential solutions to epistemological myopia include deliberate nurturing of cultural diversity, the institutionalization of Singerian approaches to inquiry, and the fostering of managed risk in experiments that do not guarantee success. While few organizations exhibit all of these desirable characteristics, there are some examples from the literature and practice that provide confidence that organizations can avoid epistemological myopia.

Introduction

In examining organizations as learning systems, we acknowledge that considerable prior work (mostly from an economic perspective) has contributed to the increased attention given to organizational knowledge and learning. Much of this can be traced to the resource-based view (RBV) of the firm (Penrose, 1959) and from the more recent knowledge-based view (KBV) of the organization. The knowledge-based view (KBV) of the firm, anticipated by Drucker (1988), may be viewed as a special case of the RBV with a focus on knowledge as an organizational resource (Grant, 1996a, 1996b). In this view, knowledge is seen as an increasingly important asset for firms, especially in technology-driven growth economies. Technology often is applied to add value to existing products and services and is the basis for creating new products and services. Survival in a technically and economically dynamic environment requires not only knowledge but also knowledge renewal. Learning--the continuing renewal of the knowledge asset--is necessary for competitiveness, and some have even argued that it is the *only* basis for sustained competitive advantage (Stata, 1989).

Because knowledge management and organizational learning are viewed as critical functions in many firms, information technology and information systems should be supportive of these functions. Consequently, the concept of knowledge management activities became popular both as a way for a firm to appropriate its own internal knowledge and for consulting firms to improve the efficiency of delivering services to their clients. Both approaches have been examined in cases and practice-oriented summaries (e.g., Davenport & Prusak, 1998). The information systems community has benefited from the research summaries of the foundations of organizational learning (Huber, 1991) and knowledge management (Alavi & Leidner, 2001).

This chapter acknowledges these economic and information technology motivated reviews of knowledge management and learning by organizations, but it is aimed toward the gap between the philosophical foundations of learning systems and the unstated assumptions that tend to guide knowledge management practice. Churchman (1971) provides the philosophical inspiration for our discussion about organizational epistemology with his view of organizations as inquiring systems. Beginning with the metaphor of sight as a medium for knowledge and knowing, we seek to illuminate issues that

constrain and limit organizations in their inquiring activities. The intent is to identify and explore methods that enable organizations to fully realize their potential as learning systems.

In addition to Churchman, the theoretical foundation for our discussion is motivated by and constructed from fundamental systems concepts such as von Bertalanffy (1968), whose idea of a higher organism includes deliberately disrupting the status quo in order to learn. The learning model perspective is that of the Kolb (1984b) experiential learning cycle, which is robust and flexible enough to accommodate principles of other learning models. Finally, we consider the organization as a community of practice (Wenger, 1998) in which social activities shape the organization's learning processes and identity.

Each of these readings invokes the metaphor of the organization as a living inquiring organism and as exhibiting behavior that reflects a particular epistemological viewpoint. The central thesis is that this learning behavior, just as a human's learning behavior, can reflect a myopic epistemology, and this myopia can limit the organization's ability to see clearly and to understand and interpret its environment. Being mindful of the possibility of myopia can help the organization avoid the accompanying limitations to learning and understanding.

Our motivation is to enable organizations to fully realize their potential as learning systems. We posit that these myopic limitations may be overcome by changes in organizational processes and practices. We further posit that *corrective lenses* or *vision exercises*, developed from an understanding of the interactions among culture, learning, and organizational practice, can reduce epistemological myopia.

To present this argument, we begin with a brief discussion of the nature of epistemological myopia. For our purposes, we use the term loosely to refer to a range of conditions that limit learning and knowledge acquisition. As metaphor, it suggests ways of examining the nature of organizations as systems that learn and manage knowledge.

Next, we argue that effective organizations, indeed, are learning systems, organisms that interact with their environment and use feedback to adjust their behavior to succeed in this environment. Particularly recently, organizational success is associated with creating and managing knowledge, so learning organizations have a competitive advantage over organizations that do not learn. Indeed, learning organizations may be the only survivors in a competitive environment that rewards innovation and continuous improvement. We further argue that *effective* learning organisms not only adjust their behavior to match their environmental needs, they additionally engage in behavior that might be called disruptive--they deliberately create disequilibria in order to explore, experiment, and play with alternative arrangements with their environment.

Next, we discuss ways that organizations can become foiled in their learning efforts. By omission or commission, organizations engage in behavior that is consistent with a myopic epistemology. To understand how these behaviors arise, we consider organizations from a systems perspective and examine learning from three conceptual frameworks--the experiential learning model of Kolb, the relationship of learning with culture and language, and learning as a social phenomenon that occurs in communities. Each perspective or framework enables us to identify ways in which myopia may arise or be reinforced.

Finally, we suggest that organizations can develop deliberate policies and actions that change their behavior, correcting their epistemological myopia. With this clearer vision, the organization becomes more like the inquiring system envisioned by Churchman. The chapter concludes with suggestions for further research and implications for management practice.

Nature of Epistemological Myopia

Myopia is a particular visual pathology, a deviation from *normal* sight, in which images are formed in front of the retina instead of on the retina. Someone with myopia is referred to as *nearsighted*; they are able to see nearby objects with greater acuity than ones at a distance.

Rather than using *myopia* in its more precise meaning, this chapter uses the term more loosely to encompass a range of visual deficiencies that might more precisely be labeled as *blind spots*, *having blinders on*, or *tunnel vision*. *Epistemological myopia* therefore is shorthand for a range of deviations from *normal* epistemology, indicating that an organization's nature of knowledge and knowing is limited by correctable factors. This limitation may be associated with what the organism knows and how it knows it, with how it acquires new knowledge (learns), or with what it accepts to be adequate evidence of knowledge.

With this use of the term myopia , the following paragraphs examine an inquiring organization using three complementary conceptual models. First, we view an organization as a learning *system* and compare its behavior to systems fundamentals. Second, we use a general model of learning to view the organization as an entity that engages in the activities that comprise this learning model. Finally, we view the inquiring organization as a community (social system) of learning and practice and examine the factors that may affect learning from this viewpoint. For each of these perspectives, we identify the deviations or pathologies that can be associated with *epistemological myopia*. Each conceptual model draws from existing literature and focuses on one or a few sources from each field rather than attempting to be comprehensive.

The theoretical foundation for our discussion of the system model of an organization is based on Churchman (1971). This systems perspective is further motivated by the fundamental systems concepts of von Bertalanffy (1968), in which the higher (living) organisms deliberately disrupt the status quo in order to learn. The learning model perspective is that of the Kolb (1984) experiential learning cycle, which has been applied frequently to organizational learning. Finally, for consideration of the organization as a community of practice, we draw from Wenger (1998), who emphasizes that social activities shape the organization's processes of learning and identity formation.

Each of these readings invokes the metaphor of the organization as a living organism. As our focus is on the inquiring organization, we will use *organization* often instead of the more general *organism*, remembering that some of the discussion is at the metaphor level and may not be suited to a precise mapping.

The chapter concludes by identifying research issues raised by considering these epistemological pathologies. The final discussion reviews practical implications and suggests activities that may help organizations avoid epistemological myopia.

Organizations as Learning Systems

Organizations have long been considered systems. To analyze them as systems, we specify their boundaries, their inputs (raw materials they use), their processes of transformation (their value-creating activities), and their outputs (products and services). From this systems viewpoint, we model organizations as systems with feedback mechanisms that provide information on the impact of their actions on the environment. This fundamental conceptual model of the firm as a closed loop system is part of the foundation for management information systems (e.g., McLeod & Schell, 2004). Managers use feedback to make judgments about modifying their actions in order for the organization to adapt to its environment. This ability to adapt and learn is seen as essential for a goal-seeking system; it is essential for the system's survival.

This feedback control model is a useful model for a large part of organizational activities. It provides a view of the organization that succeeds in adapting to its environment and in meeting the expectations of its customers. As in Maslow's (1962) hierarchy of needs, feedback control may be viewed as a necessary condition for survival, but it is an insufficient condition for an inquiring organization--it is not the highest need for an inquiring organization.

A review of system theory (von Bertalanffy, 1968) provides a reminder of one of the fundamental issues with which early systems researchers and thinkers struggled—how organisms approach learning and how feedback is used in learning. A somewhat robotic view of an organism's approach to learning is that learning occurs by way of repeated stimulus response behavior, in a kind of Skinnerian or Pavlovian repetition that leads to portfolios of behavior consistent with survival and with the achievement of the organization's objectives. In this view, reactive learning is an essential component of an organism's efforts to maintain homeostasis, or a dynamic equilibrium with its environment. Behavior is aimed toward achieving this dynamic equilibrium, and the goal of the organism is to learn what behavior enables and supports this homeostatic state.

However, such views have been criticized as leaving no room for explanations of play, exploration, and creativity--the very essence of learning or striving for a higher level of existence. The criticism is that homeostasis is a state more appropriate as a goal for a closed system. In a closed system, the second law of thermodynamics posits that entropy (or disorder) continues to increase toward an ultimate state of zero differential energy. At this point, with no energy differential, the system is incapable of work and may be considered "dead."

Instead of viewing an organism as a closed system, tending toward disorder and decay and eventual death, the contrasting view is that of the organism as an open system. In this view, the organization is a system that not only interacts with and adapts to its

environment, but more importantly, it also engages in activities that are intended to change the environment. In other words, it learns through a series of exploratory, experimental, and even playful behaviors that are intended to disturb equilibrium. Much as Stata (1989) later argues for learning as the only basis for competitive sustainable advantage, von Bertalanffy (1968) argued that this active behavior of seeking to disrupt the equilibrium is normal for a living organism. "Life is not maintenance or restoration of equilibrium but is essentially maintenance of disequilibria" (p. 191). To behave otherwise is to lead to decay and death. From a systems standpoint, the organization disturbs its environment and thereby assures that simple feedback control is inadequate. In this approach, the organization is creating an unstable equilibrium, requiring that it exercises an active control mechanism (rather than simple cybernetic feedback control) for its continuity and survival. This desire to disrupt the status quo is observed in all higher forms of life; von Bertalanffy (citing Hebb) notes that even rats have been observed to behave in ways that disrupt equilibrium (*op. cit.*, p. 209).

In summary, the normal state of an organism (including human organizations) is to create a circle of disrupting equilibrium, exercising *active* control, and thus engaging in a virtuous cycle of active control and learning. If an organism is not disrupting equilibrium, it is missing an opportunity to learn, and we identify this as our first organizational pathology associated with epistemological myopia--pathology about how organizational members view the goal of the organization:

Pathology 1: limiting the organization's goal to that of seeking a dynamically stable equilibrium and using feedback control as the mechanism to achieve and maintain this equilibrium.

If an organization's leaders, who have the responsibility for articulating its goal, define this goal only in dynamically stable terms, the organization may experience short-run success by adapting to the immediate demands of the environment. It will not realize the longer-term success of an inquiring organization.

Consider the history of Digital Equipment Corporation (DEC), which pioneered minicomputers and networks. DEC's founder and leader, Ken Olsen, in one famous quote, said "There is no reason for any individual to have a computer in his home" (Olsen, 1977). Among many analyses of the failure of DEC, one might view it as one of the founder's myopic visions of the market for microcomputers and a dependence on establishing and maintaining a stable set of loyal and reliable customers (Schein, 2003).

An inquiring organization will intersperse periods of stable equilibrium (opportunities for incremental learning and progress) with activities that disrupt equilibrium (opportunities for discontinuous learning). The organization in these latter periods develops skills that enable it not only to adapt to environmental demands but also to shape the environment to its own goals.

How can an organization introduce these periods of disequilibria? It must continually question the mental models it uses to collect and interpret data. Models of learning provide clues about how this can be accomplished.

How Organizations Learn

For this discussion, we may view organizational learning from three perspectives. A simple high-level model posits that individual learning and organizational learning are similar and can be linked (Dixon, 1999; Kim, 1993). We begin with one such model, the Kolb experiential learning cycle. We can assume that organizations learn as the individuals in the organization learn (Huber, 1991). However, individual learning depends on culture and language, so we must examine the influence of these factors on learning. Additionally, because global organizations comprise individuals from multiple cultures, we expect that organizational knowledge can emerge from encompassing the collective knowledge of these cultures. Finally, we note that organizations are social structures, and the learning processes involve not only individual learning but also the organizational practices that enable the sharing of individual knowledge.

Learning Model: The Kolb Experiential Learning Cycle

Of the many models of the learning process, the Kolb (1984b) experiential learning model, formalized in the 1980s, is one of the most widely studied and cited. Although developed for individuals, it was used as a basis to understand organizational learning even before being published in its current form (Carlsson, Keane et al., 1976). With the model's emphasis on experience as the basis of learning, it is particularly applicable to organizational learning (e.g., Dixon, 1999; Kim, 1993), and its simplicity makes it helpful in illustrating our discussion of inquiring organizations. Kolb developed the model as a synthesis of the work of several researchers, including Piaget, Lewin, and Guilford. As shown in Figure 1, Kolb posits that experiential learning occurs along two dimensions: abstract-concrete and active-reflective. Learning requires completion of each of four activities: abstract conceptualization, active experimentation, concrete experience, and reflective observation, and the cycle is recursive.

Individuals have learning preferences, and the *learning style inventory* (LSI) (Kolb, 1984a; see http://trgmcber.haygroup.com/ for the latest version) is a widely accepted means of measuring preferences for learning--that is, preferences for taking in and processing information in the learning process. Considerable research suggests that different learning style preferences are associated with different career choices. As one might imagine, individuals who are more thoughtful and prefer to reflect and work with abstractions gravitate toward careers that reward such behavior (e.g., academics). Individuals who prefer more active learning and seeing concrete results tend toward work that rewards these activities (e.g., entrepreneurial endeavors or management).

We generally visualize the process proceeding clockwise around the model so that *active experimentation* is informed by an *abstract conceptualization*, then the results of this experimentation become data, or *concrete experience*, and this experience is the basis for *reflective observation* on the significance of these data and experiences. The cycle is completed (and begins again) when the individual compares reflections and observations with the abstract concept with which the process began. It is recursive with continuing learning taking place as the cycle is repeated.

Organizations and individuals have learning preferences and may begin the process with any one of the activities. An observer hearing a lecture or viewing a work of art may form a mental model related to the subject of the lecture or art. After exploring further (experimenting), getting additional information about the subject (concrete experience), the observer may reflect on this additional experience (reflective observation). The result may be that the original mental model is modified or reinforced.

 The model reflects the scientific method and should be familiar to anyone who does positivist research. A researcher normally begins with a theory (abstract concept), then tests the theory through an experiment (active experimentation), obtains data from the test (concrete experience), and finally analyzes the data and compares the results with the theory (reflective observation). The outcome of the cycle may be a modification of the theory to fit the data or a statement that further supports the theory. In either case, the researcher has *learned* by completing the cycle.

The significance of this model for epistemological myopia is that learning requires all four activities. Myopia occurs when (a) the organization avoids or skips one of the activities, (b) fails to link two adjacent activities, or (c) becomes stuck by cycling between adjacent activities. Any of these three behaviors results in stunted or limited learning.

Avoiding concrete experience, for example, results in an untested theory, an abstraction that may have intellectual appeal but whose validity has not been demonstrated and that may not withstand an application in the physical world. An organization that has a theoretically ideal project plan but never implements it does not learn.

The complementary failure is the failure to reflect on concrete experience. An organization or person may have considerable concrete experience, but if the entity does not reflect on this experience (reflective observation), there is no learning. (An old witticism captures this when it says of a job applicant: "this person does not have ten years' experience—only one year's experience ten times.") Without the reflection step in the cycle, the practitioner does not learn but simply is accumulating concrete experience.

The most familiar aspect of this incomplete learning is that an individual or organization experiences single-loop learning but not double-loop learning (Argyris & Schon, 1978,1996). Single-loop learning occurs when the organism learns incrementally (e.g., increases efficiency through a learning curve). Double-loop learning requires that the organism learn discontinuously by challenging and possibly changing its model of reality (McKee, 1992). From the Kolb model, this can be understood by observing what happens if an organization gets stuck by cycling between adjacent activities. For example, an organization that tries something different (experiments), gets unsatisfactory results, simply tries again with a modified set of values, then continues this cycle of trial and error, can be seen to be stuck in the upper left corner of the learning cycle in Figure 1. This behavior might lead to incremental learning (single-loop learning and progress along the learning curve), which in itself can be valuable. Without examining the fundamental assumptions, however, there is no basis for complete (double-loop) learning.

Pathology 2: incomplete learning cycle—not completing the entire learning process, either by omitting one or more of the steps in the Kolb learning cycle or by being stuck in one quadrant of the cycle.

Figure 1. Kolb Experiential Learning Model
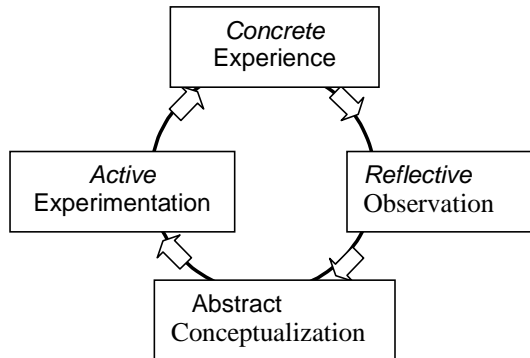
Research at Proctor and Gamble (Carlsson, Keane et al., 1976) indicated that R&D teams that followed the complete learning model performed well. The model also provided a way to understand problems that required additional attention. Without attention to each activity in the model, teams could end up idea poor, *unable to learn from mistakes*, or unable to *recognize problems/opportunities*.

To assure a complete organizational learning cycle, leaders should examine processes at the operational control, management control, and strategic levels to assure that each of the steps is a part of the business practice. The inquiring organization not only designs its work activities according to a plan (abstract concept), it continually reassesses this plan based on the results of prior efforts and changes in the environment.

Finally, an organization must *learn to learn*. An organization may develop the capability for triple-loop, or *deutero* learning (Argyris & Schon, 1978, 1996), but this capability may be associated with organizational culture. The complex relationships among learning, language, and culture are not fully understood but deserve some background discussion.

Learning, Language, and Culture

Language, thought, and culture are closely related (Gumperz & Levinson, 1996). This simple statement reflects the general acceptance of a range of scientific and philosophic communities over the past several generations as these communities have debated exactly what can be said about the relationships among these areas. If we are to manage knowledge and if organizations are to be learning organizations, we must recognize that the relationship exists. We will explore briefly two aspects of this connection: the relationship between learning and culture and the relationship between language and

thought. Much of the work has been done on distinct national and ethnic cultures and their languages; we believe much of the results are relevant to the cultural aspects of organizations, and this is explored in the next section as we examine the nature of organizations as communities of practice.

Culture and Learning

Hall (1966) summarizes the relationship between learning and culture by saying,

> *"Once people have learned to learn in a given way it is extremely difficult to learn in any other way…Culture reflects the way one learns"* (p. 000)

Learning is a complex process, and despite decades of research, there still is much to understand about how individual learning is facilitated. In 1930, Vygotsky and Luria proposed a culture-centered approach to learning (Vygotsky, Rieber et al., 1987), and later work has demonstrated the empirical significance of this approach (Forman, Minick et al., 1993; Kozulin, 1998). This viewpoint posits that culture mediates how individuals learn, and evidence indicates that lasting effects occur from an early age. In the formative years of a child, sociocultural activities shape cognitive processes and different cultures result in different processes. A child's early cultural environment provides for different systems of mediated learning experiences, and these different experiences are revealed later as differences in how the individuals as adults perceive and make sense of the world. In effect, distinct cultures are associated with different worldviews, and these different worldviews mediate how individuals from these cultures learn. That different worldviews exist may be revealed in simple tasks, such as the classification of objects according to their similarity.

Churchman views classification and the more basic task of making comparisons as fundamental to a Singerian inquiring system. Such a system begins with the fundamental capability to judge equalities, or alternatively, to discern differences (Churchman, 1971, p. 186). With this capability, one has the basic capability to place objects and events into categories, thereby distinguishing what is known and familiar from what is new and maybe not yet categorized.

An example of cognitive differences is demonstrated in asking British and Mayan speakers to classify objects (a task such as "is object A more like object B or object C?"). British speakers tend to use shape as a primary classification heuristic, and Mayan speakers tend to use similarities in material as a basis for classification. Interestingly, the authors determined that small children used shapes in both cultures; the shift to the use of distinct differentiators occurred before age 8 (Lucy, 1996, p. 51).

Other studies have demonstrated that early formal education also makes a difference in how adults perceive the world (Kozulin, 1998). Studies of young adults, who have completed schooling in one culture and move to another culture, indicate that the nature of the initial formal schooling makes a difference. This difference goes beyond a difference in knowledge base and seems to be associated with the basic skills by which

one learns new concepts. In the studies reviewed, the young adults exhibited specific difficulties associated with coding schema, concepts, graphic, and symbolic devices used in communication of ideas (e.g., tables, ordering, plans, and maps). The difficulties extend to cognitive activities, such as the ability to identify or define problems (that is, the ability to apply their knowledge to a set of data and infer the implicit question or issue), the ability to work with multiple sources of information, and so forth. In short, the young adults were missing the cognitive antecedents that would enable them to excel in their new environments (Kozulin, 1998).

Language: Both Cultural Expression and a Vehicle for Learning

What are we to make of this relationship between culture and learning? The fundamental proposition that links language, thought, and culture--and a concept that is widely debated in the field of linguistic relativity--is that the *semantic structures of languages are fundamentally distinct*. This strong position has several broad consequences. If accepted, it means that *true* translations from one language are impossible. It also suggests that speakers of distinct languages think and act differently. In essence, it says that the interlocking of culture, language, and thought makes it likely that each language has associated with it a distinct worldview that influences how speakers perceive and make sense of the world.

Historically, the fundamental concept may be traced to 19th century authors (e.g., Humboldt & Heath, 1988), but the most frequently referenced (and often misunderstood) statement is the more recent Sapir-Whorf hypothesis. According to this concept, "users of markedly different grammars are pointed by their grammars toward different types of observations and different evaluations of externally similar acts of observation, and hence are not equivalent as observers, but must arrive at somewhat different views of the world" (Whorf & Carroll, 1956, p. 000).

In its extreme interpretations, the concept was taken to mean that language was fundamental to thought and presupposes thought by making possible abstract (symbolic) thought. In this interpretation, if a language does not have a word for a concept, then the speaker of that language (assuming no other language) would have no way to think about this concept. This challenges some intuitive thought and seems inconsistent with some of the evidence of hardwired linguistic patterns in language across the globe. (A recent survey of this work by Chomsky and others is presented in a recent book by Baker, 2001.) However, the concept caught the attention of a broad range of scientists, including linguists, psychologists, and anthropologists. At some point, the idea became somewhat corrupt and was seen as an attack on the methods of anthropologists, who--it was argued--were simply struggling with translation difficulties (Gumperz & Levinson, 1996, p. 3). The more recent cognitive science position is that there are some basic roots (universals) across languages but that sense making, meaning, and discourse are influenced by differences between languages. In other words, universals such as *objects* may be perceived similarly across languages, but *relationships* among objects and communication about these and other abstractions may be expressed from a distinctive

worldview that is associated with a particular culture or language. Moreover, using Whorf's terminology, different languages point us toward different types of observations and toward different evaluations of what we observe. Language draws our attention to particular features of the physical world and enables us to make sense of what we observe within the context of our experiences in the culture as expressed by our language. In short, different languages point us to different salient features and lead us toward different interpretations of our observations.

It is this latter statement that deserves our attention: knowledge management not only is about storing and accessing knowledge, it is also about knowledge creation. Reality and knowledge are socially constructed (Berger & Luckman, 1966), thus knowledge creation in an organization emerges from a social process of exchange among individuals. If the organization comprises individuals who have similar cultural backgrounds, these individuals will learn differently, and they will perceive the world differently because of their distinct languages. In such an organization, the knowledge and shared meaning that emerge may encompass the cultural knowledge and experience of those within the organization. Generally, group diversity has been positively associated with group creativity, but the organizational culture and the mechanisms by which members of the group exchange information can influence the degree to which a group or organization will be able to capture or appropriate the range of knowledge among its members (Woodman, Sawyer et al., 1993).

Consequently, we may infer that an organization may experience epistemological myopia if it restricts itself to members with the same or similar cultural backgrounds.

Pathology 3: organizations comprising members from a single cultural background or having the same native language

Pathology 4: assuming that the metaphysics of one's own organization is the only way to understand and make sense of the physical universe

Digital Equipment Corporation (DEC), noted earlier for exhibiting Pathology 1, may also be cited as an example of an organization that exhibits these pathologies. DEC's staff and management were predominantly from engineering backgrounds. In the series of analyses in a recent book on DEC, the significance of a relatively closed corporate culture frequently was mentioned as a contributing factor to the company's demise but ironically as part of its legacy as its executives became part of other organizations. As another irony, the firm's initial successes in technology leadership and market growth supported this closed culture by reinforcing the leaders' beliefs that their worldview and their practices were the bases for these successes (Schein, 2003).

Is Diversity Enough?

From this discussion, one can argue that a heterogeneous group may help avoid epistemological myopia, but is something else also required? In other words, having a

heterogeneous group might be a *necessary* condition to avoid epistemological myopia, but it may not be a *sufficient* condition.

As one might expect, diversity itself is insufficient, as has been shown by a longitudinal study of homogenous and heterogeneous teams (Watson, Kumar et al., 1993). In this study, less diverse teams were able to be more effective sooner, but after about two-thirds of the way through the 17-week study, the diverse teams had developed processes that enabled them to be more productive. At the conclusion of the study, overall performances for the homogeneous and heterogeneous teams were similar. However, the diverse teams improved their process and performance more quickly than did the homogeneous teams and had higher scores on two task elements: identifying problem perspectives and generating alternative solutions (Watson, Kumar et al., 1993, p. 499). It is evident that a homogeneous group, one in which all members share similar backgrounds, can begin applying its knowledge to a task faster than a heterogeneous group. However, once the group develops processes for information exchange, the diverse group is more likely to develop creative solutions to problems and to use a wider range of approaches in trying to solve problems. Consequently, along with members from diverse cultures, an inquiring organization must establish an internal culture that encourages the exchange of knowledge and complementary information.

A recent study of knowledge management systems concluded that knowledge management systems (KMSs) rarely, if ever, take culture into account in their design and use (Mason, 2003). Instead, a common critical success factor for such systems appears to be a strong corporate culture in which use of the KMS is expected, and ethnic and national cultures are subsumed in the organizational culture. This finding is not necessarily in conflict with the pathology identified above--a corporate culture that encourages the sharing of information is a necessary condition to avoid such a pathology--but an organization that neglects the knowledge and learning differences embedded in its members' native cultures is unlikely to benefit from the complete range of knowledge available to it.

Language presents a current snapshot of culture. Words and grammar capture prior experiences and their significance. To truly understand a language is to understand the culture associated with that language. Importantly for our discussion, language may be viewed as a means toward constructing reality among the speakers, not simply as a means of communicating an external objectively verifiable reality. Even if such an objective reality exists, the relationships among the physical entities in this reality, and how one makes sense of these relationships (i.e., the abstractions that constructed about the physical objects), depend on language and grammar. Different languages and grammars reveal different underlying values in how they deal with abstract concepts and the relationships among physical objects.

Time: Example of How Different Cultures Place Value on Abstract Concepts

A vivid example of how these differences are expressed is the socially constructed concept of *time*. Whorf uses Hopi and English to demonstrate an extreme difference. In

the Hopi language, not only is there no word corresponding to the abstract concept *time*, there is no clue (e.g., tense) about when something happened. (It is almost as though the Hopi are the ultimate existential communicators--everything is in the present.) For English, and to a great extent the Western world, the concept of time performs a critical role in organizing our lives and creating systems. Yet, according to Whorf, the Hopi language nonetheless "is capable of accounting for and describing correctly, in a pragmatic or operational sense, all observable phenomena of the universe" (Whorf & Carroll, 1956, p. 53).

Time and space are culturally associated but not always in exactly the way that Einstein posited for the physical world. The relationship of objects in space often implies a temporal or procedural relationship as well, and this can lead to differences in classification, in conceptual models of the physical world, and in how ideas are communicated (Bowerman, 1996; Levinson, 1996).

The Western world generally views time as a precious (scarce) commodity, as a raw material for accomplishing a goal or meeting a target. Common epigrams reflect this view: "Time is money" (Benjamin Franklin); "don't waste time"; and so forth.

Time is one of the foundations for measuring the value of other socially constructed abstractions, so that Western business students easily understand the "time value of money" and the notion that by reducing the duration for a task, we have improved the "benefit-cost" ratio of the output. Franklin's dictum is reflected in modern economic theory and is invoked whenever one seeks an improved way of accomplishing a task.

Because time is one of the fundamental socially constructed concepts that govern economics, the Western world has been preoccupied with structuring it to increasingly higher precision (classifying it into smaller and smaller increments). This capability has enabled increasingly complex systems in which components work together with an efficiency that would amaze a visitor from an earlier era (e.g., Gleick, 1999). However, such systems are closely coupled, and any variation can lead to the failure of an entire network. Sometimes we see the impact of this preoccupation with efficiency, as when weather closes a single hub airport for a few hours, causing days of disruption in air travel, or when a failure in a power line leads to widespread power outages in the power grid.

Given the dominance of western thought in the world's economy, one would think that time would be viewed similarly among developed countries in the western hemisphere, but there are variations and distinctions. Most of these distinctions are curiosities, but the style by which different cultures organize time can lead to misunderstandings and lack of effective communications within an organization (Bluedorn, 2002; Hall, 1966). An example is how individuals structure tasks over time. Individuals who are polychronic tend to engage in multiple activities simultaneously (e.g., an executive who reads or signs papers during a staff meeting); individuals who are monochronic engage in a single task at a time and do not move to the next task until the first one has been completed.

Pathology 5: organizations comprising members from multiple cultures try to structure time in only monochronic or polychronic ways.

While polychronic and monochronic are individual characteristics and exist on a scale rather than being a binary variable, different national cultures tend toward one end or the other of the scale. Germanic and English cultures tend to be monochronic; Latin and Mediterranean cultures tend toward the polychronic end of the scale. Without having an awareness of these characteristics, a person from one end of the scale can be frustrated in trying to work with a person from the other end of the scale. In the extreme, either can lead to dysfunctional actions and not simply to myopia.

An example of this frustration is the story about an American attaché in a Latin country who wanted to call on the minister who was his counterpart. After some difficulty, he made an appointment. He arrived a few minutes ahead of time, as is the custom in the United States. The appointed time came, but the attaché continued to wait. His anxiety increased until after forty-five mintues, he protested in strong language ("damned sick and tired" of this type of treatment) (Hall, 1959, pp. 4-5). As Hall notes, the attaché's stay in the country was not a happy one.

The author has personal experience that confirms the significant difference between U.S. and Latin views of time. On a visit to Brazil as an invited lecturer several years ago, two of us avoided having an experience similar to attaché's only because one of his hosts had warned us ahead of time. "If you make an appointment to meet someone for dinner at 10:30 or 11 (they eat late in Brazil), don't be surprised if they don't show up until 11:30 or 12. If by 1 A.M. they still have not shown up, then perhaps something has happened, and they are not coming. This is the Brazilian way." We also experienced it at one particular stop on our lecture tour when we arrived late and expected to rush into the lecture hall to the hundred or so people waiting. Instead of rushing in to accommodate the crowd, as we would have been inclined to do based on U.S. protocol, the director of the research organization ushered us into his office for a cup of coffee and 20 minutes of conversation while the audience continued to wait patiently.

An inquiring organization both creates knowledge and seeks knowledge externally. Different time perspectives can create myopia by inhibiting communication among the members and inhibiting the acquisition of knowledge from outside. Most organizations recognize the necessity for different values of time by creating project teams that have project timelines and milestones for outcomes that are urgent and forming research groups for which timelines and outcomes are not directly linked to time as a measure of success.

This discussion has emphasized *time* as a source of misunderstanding and potential difficulty in communication and exchange of knowledge. There are other examples of national cultural differences (Hall, 1959, 1966; Hofstede, 1980), each of which can lead to difficulties in understanding and inhibit the creation of knowledge. By acknowledging these cultural differences and affirming their value, the inquiring organization may benefit from all the knowledge available.

Organizations as Communities of Knowing and Practice

Each of the above pathologies is a socially created idea, so why can the organization not simply change ideas and avoid the pathologies? The answer is that it can, but not simply.

The prior beliefs of an organization are part of the organization's identity and enable the organization to maintain a culture which can be extremely productive but which can resist change. The work practices of the organization, the processes by which the organization creates value, are also the means by which members of the organization come to make sense of their experiences and to give meaning to their actions (Wenger, 1998). Ideas and values are abstractions, but the community reifies these abstractions, and they become critical actors in how members of the organization establish identity and how they generate and use knowledge. To change, the organization may need to change work practices so that the abstraction of accepting and valuing multiple cultures is put into practice.

As one example, many organizations have a community value of always succeeding, and it would be viewed as almost nonsensical to propose a risky project, one that is not likely to succeed. Nonetheless, undertaking risky projects is one way to learn, and some have argued that failure should be part of a learning strategy (Sitkin, 1996).

Pathology 6: undertaking only projects that have a high probability of success.

A few years ago two major lighting firms, one in the U.S. and one in Japan, decided to undertake a joint venture. The origin of the project was an idea hatched from a dinner conversation between the CEOs of the two firms. An initial investigation by a small group of engineers from each firm came back with the recommendation that there would be little hope of success. When the executive of the U.S. engineering group reported this to his CEO, the CEO's response to the executive was, "This is not the right answer. Make this happen." As might be expected, the venture came together. After operating for several years, it eventually was dissolved.

After the venture had been in operation for about three years, the author asked the executive of the U.S. firm (the one responsible for "making it happen") about his judgment at this point in time about its success. "Has it been a success?" I asked.

The executive was equivocal, so I persisted. "Has it been a financial success?" "No," was his answer. "Well, has it achieved the technical exchanges you expected?" He hesitated but again answered, "No." "Then why are you not willing to say that it has been a failure," I asked. "Because," he said, "we have learned so much."

Inquiring organizations have learned to manage risk. They undertake endeavors that may not succeed but may provide major opportunities for learning.

Summary and Discussion

Avoiding and Correcting Myopia

The premise of this discussion has been that organizations can become more like the Singerian inquiring organization envisioned by Churchman by acknowledging sources of epistemological myopia. By recognizing the sources, actions (changes in practice) can lead to changes in how the organization perceives its role and in how its members identify themselves.

Table 1 presents some of the organizational characteristics identified with a myopic epistemology and how an inquiring organization might view these characteristics. While it is clear that changes in outlook are critical, changes in practice will be how an organization is able to avoid myopia. An organization cannot make changes overnight, nor can it go to the extremes of always seeking to disrupt the status quo. One can expect continual tensions between the need for change and the need for a dynamic equilibrium and between the desire for classification (precision and detail for depth of understanding within a worldview) and the necessity for a softer focus (enabling other perspectives and worldviews to come into focus) to avoid myopia.

For an organization to change, it needs to be aware of how its present culture and current practices may be limiting its epistemology and contributing to myopia. Self-awareness can be difficult, but executives might begin the process by conducting an *epistemological audit*. Such an audit--basically addressing a series of questions about how the organization collects, interprets, and uses information and knowledge--can aid in revealing hidden assumptions in the organizational routines and practices that may contribute to myopia. External benchmarks, evaluators, and reviewers can be helpful in providing a basis for comparison to the organization's own internal audit. Table 2 presents an outline of such an audit.

Resources are necessary to make the changes in practice, to experiment with alternative worldviews, and to accommodate and embrace multiple cultures. Thus, a corollary to what has been presented here is that an organization that recognizes its own myopia must have or develop slack resources in order to make the transition to an open Singerian learning organization.

Implications for Research

The power of metaphor lies in provoking thought and discussion, and the purpose of this discussion is to stimulate organizational executives and organizational observers to reflect on the epistemology embedded in the organization's culture and routine activities. Nonetheless, the discussion suggests some paths of research that might prove valuable in developing a more structured understanding of epistemological myopia in organizations.

Table 1. Impact of Epistemological Myopia on Views of Organizational Success

Organizational Characteristics	Myopic Epistemology Interpretation	Singerian Epistemology Interpretation
System behavior	Possibly closed	Open
System goal	Stable equilibrium	Unstable equilibrium; disequilibrium necessary for learning
Control approach	Feedback, cybernetic	Active
Culture	Create single culture for learning	Embrace multiple cultures for learning
Unbroken series of project successes	Operational triumph of control approaches	Missed opportunities for learning
Unsuccessful project	Failure of controls	Normal and expected; some are necessary for continued learning
Out of bounds behavior; needs that were not anticipated	Contributes to inefficiencies; avoids surprises by trying to anticipate all needs	Opportunities for learning
Strong corporate culture	Shared corporate culture is necessary for effective knowledge management	Acknowledging distinct cultures (a corporate multicultural environment) may be a necessary step in learning
Value of time	"Time is money" and short term measures provide feedback that can assure long term success Monochronic organization of time	Time is socially constructed and is only one dimension; "timeless" worldview may enrich understanding and redefine success Embraces range of monochronic and polychronic time organizations

Case studies would be a useful way to study the culture and practices of organizations that have survived changes in competition, technology, and economic conditions. *The Wall Street Journal* recently highlighted one such company, GKN, a 245-year old British company that seems to have avoided many of the traps of epistemological myopia (Michaels, 2004).

Organizational epistemology can be more precisely developed as a concept. Such a step is necessary if this metaphor is to become more than a provocative basis to initiate discussions about how organizations learn.

One approach would be to better articulate the elements of epistemology for an organizational context. This chapter has provided some ideas for how these elements can be identified. A complementary approach would be to examine organizations as a value chain of knowledge developing, storage, interpreting, and distribution systems (Alavi, 2001). By testing and validating questions, such as those in Table 2, then using these to perform an audit on the processes in this value chain, the hidden assumptions in the organization's epistemology might be more visible. One might speculate on what such an approach might reveal, as in the following postulates.

Table 2. Outline for an Epistemological Audit

Area	Possible Questions	Sources of Information (Internal)*
System behavior	Do the leaders of the organization see their role as maintaining equilibrium or as creating disequilibrium?	CEO and top management team Board
	Are strategic controls in place that focus on correcting errors, or do the controls focus on managing risk of uncertain projects?	CEO and top management team
Attitude toward failed projects	Did the project fail because our controls were inadequate? Are these failures opportunities to learn? Are we learning from these experiences?	CEO and top management team Middle management Project leaders
Time	Does the organization have mechanisms that enable it to tolerate (or even embrace) both monochronic and polychronic behavior without individual frustration and stress?	HR Department Middle management Project leaders
Cultural diversity	Does the organization have a policy of hiring based on finding qualified persons from different cultural backgrounds?	HR Department
	Are culturally different worldviews seen as opportunities for learning, or are they "corrected" by others in the organization?	New members of the organization
Learning Activities	Can each of the four activities in the Kolb learning model be identified?	Middle management Project leaders
	Are there sufficient resources (time) for reflection, or is the prevailing value on efficiency without time for contemplation?	Middle management Project leaders Staff
	Is there an effective way for staff suggestions to be evaluated?	HR Middle management Staff
	Is there a formal post audit for projects?	Middle management Project leaders

Postulate 1:   An epistemological audit can be developed that will reveal qualitative differences between organizations according to their Singerian inquiring properties (or, conversely, according to their epistemological myopia).

Postulate 2:   When organizations are ranked or classified according to the degree of myopia, the executives in the more myopic organizations will view their organization as having a corporate culture that diminishes the significance of national cultures and ethnic backgrounds in the organization's performance. Conversely, executives in the Singerian inquiring organizations will view their organizational culture as embracing differences in ethnic backgrounds and national cultures and using these differences to create value.

Postulate 3:   Compared with more myopic organizations, Singerian inquiring organizations will have slack resources, or will have resources devoted to reflective activities, such as project post audit reviews.

Postulate 4:   Compared with more myopic organizations, Singerian inquiring organizations will exhibit behaviors that explicitly disrupt their own status quo in organizational structure, worldview, processes, and product-market mix.

Postulate 5:   Compared with more myopic organizations, members of Singerian inquiring organizations will be more comfortable with tensions arising from different cultures, worldviews, and the disruptive activities that are part of the organization's culture.

Conclusion

The concept of epistemological myopia focuses attention on the sometimes hidden assumptions that affect organizational learning. As a metaphor for how organizations acquire, interpret, and value knowledge about their environments, epistemological myopia raises awareness and can initiate discussions of organizational culture and practice that can inhibit learning. The concept has the potential for identifying areas of research on organizational learning that can improve both our understanding of organizational effectiveness in a highly competitive and dynamic environment and how organizational leaders can develop organizations that can thrive in such environments.

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