
ROUTES TO REALITY

The Reality “Out There”?

*There are different routes to reality,
Science, art, religion and spirituality,
These are different ways to capture,
The actual functioning of nature*

What is the reality ‘out there’? This is a question with which social scientists have struggled for a few centuries. It influences the way social scientists acquire information. It also raises the question as to what constitutes social science. In general, the purpose of science is to explain and conceptualize physical phenomena, and form a worldview of how the orderliness in the physical world can be hypothesized. Further, its purpose is to predict the future. Thus science is aimed to “get rid of angels, blue fairies... and other agents, whose intervention would reduce the explanation of physical events to other than physical terms” (Bronowski, 1978: 100). Science begins with the belief that the world is orderly, and the aim of the scientist is to find out the order and give an explanation of the order.

NATURE OF SCIENTIFIC ACTIVITY

Scientific activity involves the formulation of scientific laws as a description of the observed order. An event is observed either deliberately or by accident, and patterns are sought that reveal the recurring relationship among the data. Scientific activity constitutes three aspects: (1) observation/(data) (2) law (3) theory. The data is the record of our perception. It is the information perceived. The empirical law is a description of the observed pattern of occurrences, and theory is the rational justification of the law and the explanation of the phenomenon. For example, Tycho Brahe collected with incredible precision, the data on planetary orbits, but he didn’t see the hidden order. The order in the data was observed by Kepler, who laid down three laws, which revealed the pattern of occurrences. Kepler, however, didn’t evolve the central concepts that tie the three laws together. It was Newton who formulated the notion of gravity as the key idea of planetary motion, and using it, created a theory that explained why planets follow Kepler’s laws.

Thus, scientists are involved in making observations, deriving facts and seeking causal explanations. In this view of science, scientific knowledge is based on the data which is collected through observations, *i.e.*, through sense experience. This view, known as the positivistic approach, is based on the premise that verification can be made on the basis of repeated observations. Further, it assumes that the reality is objective and therefore, invariances can be extracted from the objective reality. The positivistic approach creates a worldview of Laplacian determinism and certainty. In this approach, the world is considered as a machine which behaves in a deterministic way.

In the positivistic conception of science, the authority of the senses is the building block of all scientific knowledge, and knowledge not based on sense experience is dismissed as non-scientific. Much of the scientific activity in various disciplines, including the social sciences, has been influenced by this mode of thinking. Accordingly, scientists engage in collection of information about observed phenomena, with a view to explain a reality.

CHALLENGE TO POSITIVISTIC TRADITION

Research in the field of quantum mechanics, revealed the limitations of science based on verification through repeated observations. The Newtonian worldview does not explain the reality at the sub-atomic level. The reality of indeterminism at the sub-atomic level needed a different view of science. The theory of relativity shattered the notions of absolute time and absolute space, and introduced the notion of the subjectivity of time and space, and the intertwining of the two. These discoveries shook the foundations of the Newtonian worldview.

Again, at the sub-atomic level, the very presence of the observing system affects the observed. Therefore the verification process itself becomes subjective. Hence, verification of an experiment, on the basis of repeated observations, runs into trouble, because the exact repetition of an experiment may not be possible. In view of this, the positivistic philosophy is considered an inadequate explanation of the 'orderliness' in the world. If the purpose of science is to search for order, then science is limited by its own purpose. Bronowski has observed, "science is a way of describing reality; it is therefore limited by the limits of observation" (Bronowski, 1978: 100). Thus we notice that the phenomenon of uncertainty has pointed out the limitations of science as a way of describing reality.

SCIENCE AS ART AND ART AS SCIENCE

If science is 'limited by the limits of observations', then how do scientists acquire information in a world veiled by '*maya*'. At the level of observable phenomena, the classical definition of science is still valid, and the acquisition of information proceeds in the usual way of laboratory experimentation and verification through repeated observations. In other situations, the acquisition of information is a subjective process. Capra has pointed out that this subjective process is no different from mystical experiences and the description of reality in eastern philosophies (Capra, 1976). In many situations, the reality is observed through subjective experiences, and there is no objective reality 'out there'. In view of this, the term science itself needs redefinition. Both science as well as art, aim at understanding the realities of the world. The human mind has created an artificial wall between 'science' and 'art', differentiating between the two as being objective and subjective respectively. However, the processes involved are no different. At the mystical levels of reality, science is an art and art is a science.

SCIENTIFIC APPROACHES: A FRAMEWORK

What is defined as science affects the worldview of the researchers in various fields of human knowledge. For example, the methodology of research in social sciences has been deeply influenced by the positivistic worldview (Morgan, 1983). This is reflected in the heavy reliance on the quantitative approach, with a view to extract the objective reality. This bias is due to the core ontological assumption of ‘reality as a concrete structure’. The legacy of the Newtonian worldview is all pervasive in social sciences. However, with the advent of quantum mechanics this worldview has been undergoing a change, although after a considerable time lag. The core ontological assumption of ‘reality as a projection of human imagination’, is now gaining acceptance. This is partly reflected in the increased tolerance for the use of qualitative tools for social research and acceptance of various paradigms. Burrell and Morgan (1979) provide a framework for four distinct scientific approaches in social science. Reality could either be ‘ordered’ or ‘not ordered’. Further, the reality can either be observed objectively or subjectively. The reversible perspective figures provide illustrations of subjective perceptions of the same reality. While some see birds, others see antelopes in the same figures.

On the basis of the discussion so far, we can develop a framework similar to Burrell & Morgan’s framework that will identify the various approaches to knowledge building. This framework is presented in Figure 1.1. In this matrix, the reality ‘out there’ is conceptualized as ‘ordered’ or ‘not ordered’, and this reality could be observed objectively or subjectively.

Basis of Knowledge	“Subjective”	Phenomenology	Meditative Research Eastern Mysticism Zen-Buddhism
	“Objective”	Newtonian Worldview	Theory of Chaos
		“Ordered”	“Not Ordered”

Belief in Nature of Reality

Figure 1.1: A Taxonomy of Approaches to Knowledge Building

This framework classifies various epistemological approaches in the following four categories:

1. **‘Ordered-Objective’ Approach:** This represents the ‘Newtonian worldview’, wherein reality is considered as ordered, and this reality can be captured objectively. Till recently this worldview dominated social science research.
2. **‘Ordered-Subjective’ Approach:** In this view, the reality is considered as ordered, however patterns could be distilled by different persons. Thus, in this approach, the basis of knowledge could be subjective. The phenomenological research is an illustration of this approach.
3. **‘Not Ordered-Objective’ Approach:** In this worldview, the reality is considered as not-ordered. However, the aim is to study it objectively. The recent developments in the theory of chaos, are illustrative of this approach.
4. **‘Not Ordered-Subjective’ Approach:** In this worldview, the reality is considered as not-ordered, and it could be experienced subjectively. The eastern mysticism would fall in this approach of knowledge building.

All the four approaches discussed above have relevance for knowledge building in social sciences. The disorder and the chaos that modern societies are facing, indicate that theories based on the ‘ordered-objective’ paradigm of social sciences, are likely to be inadequate to explain the realities of such societies. There seem to be no settled conclusions for a number of social issues, because many issues don’t fall in the category of ‘ordered-objective’ paradigm. In social sciences, future theory building may well be within the paradigm of ‘not ordered-subjective’ approach. Eastern mysticism, Zen Buddhism and similar other intellectual traditions may form the foundations for such a paradigmatic shift. The research process, for gaining insights into ‘not ordered-subjective’ situations, could be referred to as ‘meditative research’. The meditative research will involve reflective search and experiential approach to gain knowledge. In the process of reflective search, the researcher, as well as the ‘researched’ may jointly be party to the ‘reflection-in action’. However, all the four approaches to knowledge building can provide different insights, and therefore, would be useful for increasing the existing stock of knowledge.

IMPLICATIONS FOR MANAGEMENT AND ADMINISTRATIVE THEORY

The four approaches indicated above have relevance for knowledge building in the field of management and administration. Most of the theory building in these fields falls in the ‘objective-ordered’ category. Further, most of the tools and techniques in management theory have evolved within the context of this paradigm. Thus, the intellectual roots of ‘closed system’ theories can be traced to this paradigm. During recent years, theory building within other paradigms has received momentum. This is primarily because of the realization that reality cannot be bounded according to the models formulated by the theory builder, although the desire to do so is generally very high among researchers. The subsequent discussion relates particularly to the problems that managers confront in situations of ‘not ordered-subjective’ category. Increasingly, it is being realized that the faith in the ordered reality is breaking. Further, it is now well recognized that different organizational actors perceive reality differently. Administrators and managers operating in situations characterized by multiplicity of socio-economic and cultural characteristics are aware that the practical situations they face tend to fall within the ‘not ordered-subjective’ paradigm. In such situations, there are multiple views about reality, and different actors involved in the drama experience it differently. Managers

operating in social development fields can cite a number of experiences that fall in this category. These managers and administrators tend to rely on tools and techniques developed largely within 'ordered-objective' paradigms. Soon they realize the inadequacy of these techniques and point to the theory-practice gap. In view of this, the need for knowledge building within the 'not ordered-subjective' paradigm has become paramount. The methodology of enquiry used in Eastern mysticism and Zen-Buddhism, may provide insights for developing an appropriate basis for knowledge building within this paradigm. Hence, the methodology of 'meditative research' could be used to gain insights into situations falling in the 'not ordered-subjective' category. If the theory-practice gap is to be reduced, it would be necessary to develop appropriate theories, tools and techniques, for dealing with situations within this paradigm.

IMPLICATIONS FOR KNOWLEDGE MANAGEMENT

During recent years, knowledge management has emerged as a new and distinctive field of study. Nonaka and Takeuchi (1995) highlighted the importance of 'explicit' and 'tacit' knowledge in organizational context. Explicit knowledge is similar to codified knowledge and tacit knowledge is the 'knowledge embedded in individual experience'. When the framework discussed in this chapter is combined with 'explicit' and 'tacit' knowledge concepts, we arrive at following four ways of creating knowledge:

1. Objective-Explicit: Knowledge is explicit in nature and has been gained through objective methodology.
2. Subjective-Explicit: Knowledge is explicit in nature and has been gained through subjective methodology.
3. Objective-Tacit: Knowledge is tacit in nature but has been gained through objective methodology.
4. Subjective-Tacit: Knowledge is tacit in nature but has been gained through subjective methodology.

KNOWLEDGE GENERATION WINDOW

In many professional fields, knowledge is continuously generated at two levels viz., by the practitioners in their day-to-day context and the scholars and researchers. Given this understanding of knowledge creation, there could be a four-fold classification of knowledge in the form of concepts and ideas:

1. Known to practitioners and known to scholars
2. Known to practitioners and unknown to scholars
3. Unknown to practitioners and known to scholars
4. Unknown to practitioners and unknown to scholars

Once we put this classification system in a matrix somewhat similar to Johari window, we get an analytical model that can be referred to as 'knowledge generation window' or 'knowledge generation matrix'. This knowledge generation matrix has the following four cells:

- Cell I:** It refers to ideas that are known to both practitioners and scholars. These ideas find their way in standard textbooks and workbooks on the subject.
- Cell II:** It refers to ideas known to practitioners but not known to scholars. This knowledge may be in practitioner's head and is usually not taught at the management school.

Cell III: It refers to ideas unknown to practitioners but known to scholars through their insights and subsequent conceptualization. Such ideas may be lying in scholarly journals inaccessible to practitioners.

Cell IV: It refers to the ideas terrain that is not known to practitioners and not known to scholars. This represents the 'black box' and it offers new horizons for innovative thinking and creativity and has the greatest potential for paradigm breaking knowledge. Clues to the contents of this black box could come from the intuitive insights of workers, customers and others interacting with the organization. For new ideas this black-box needs to be explored.

Ideas which are known to practitioners and have been empirically tested and re-tested by the researchers and scholars, become part of the 'received knowledge' of the subject. Thus, they become the 'standard elements' of the subject matter and are reproduced in textbooks and workbooks for learning by the new entrants in the field. In this case, theory and practice both tend to converge because theory is based on practice and practice is influenced by theory.

Ideas that are known to practitioners but have not been studied by scholars or have not yet been tested, belong to category II. These ideas are based on the 'empirical intelligence' of the practitioners. They are the intuitive flashes, and brainwaves that practitioners generate in the course of their day-to-day confrontations with reality. Since, such ideas have not yet become part of the 'received knowledge' they belong to the category of 'what they don't teach at the management schools'. This represents the case of a practice that is yet to be theorized. Scholars can gain considerably from such 'practitioners' knowledge', as practitioners' insights could be converted into models and concepts.

Ideas that are known to scholars from their insights and interactions with field situations and have been conceptualized and theorized but are not yet available to practitioners, belong to category III. If published, such ideas may be available in journals. It could represent the case of a theory that is yet to be practised. Practitioners can enhance their 'knowledge circle' by accessing such knowledge.

Ideas that are neither known to practitioners nor known to scholars in the field represent the 'dark spaces' with 'dotted spots'. There are many examples of new and innovative ideas coming from people outside the field leading to opening up of new knowledge doors. For example, many physicists have contributed to development of stock market theory. Since, they didn't belong to the field they offered some fresh insights in an unrelated knowledge area.

GROUNDED PRAXIS APPROACH TO KNOWLEDGE BUILDING

Knowledge generation window discussed above points out to the gap between theory and practice. Aim of 'grounded praxis' is to bridge the gap. Grounded praxis implies that theories, ideas and concepts are related to ground realities. It further implies that 'practice' or empirical reality is used to develop ideas, concepts and theories. Thus, it leads to development of practical wisdom. Essentially, grounded praxis approach to knowledge creation implies two way interaction between theory and practice. In grounded praxis, current knowledge forms the foundation for action followed by a process of reflection resulting in insights in the form of wisdom. Wisdom thus acquired acts as a feedback to revise the existing knowledge. This process of knowledge creation is presented in Fig.1.2 as Knowledge-Wisdom cycle.

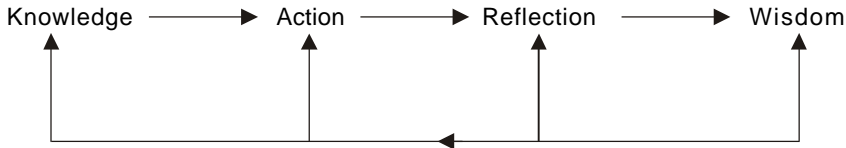


Figure 1.2: Grounded Praxis Approach to Knowledge Creation Through Knowledge – Wisdom Cycle

It may be indicated that in knowledge-wisdom cycle, we also find an integration of reason, intuition and practical approach. Action-reflection leads to sharpening of intuition. Intuition combined with reason and practical approach leads to better decision making. With experience leaders and managers learn to combine reason, intuition and practical approach in varying combinations for decision making and problem solving.

It may also be observed that grounded praxis not only helps in bridging the gap between theory and practice, but also helps in bridging the gap between macro policies and micro realities, strategic vision and operational requirements, global perspectives and local realities, gram (grass root action and management) with market realities and corporate vision, ideal solutions and practical needs, etc. Thus, grounded praxis is helpful not only in knowledge building but also in decision making and problem solving. 3D approach of Discussion, Dialogue and Discourse creates the democratic ambience for grounded praxis approach to knowledge creation to take roots in an organization.

WISDOM EQUATION*

In wisdom equation, wisdom is viewed as a combination of reason and intuition. The equation is as follows:

$$W = R + I$$

Wisdom = Reason + Intuition

Wherein the symbol + is a mathematical operator.

The wisdom equation indicated above has many interesting interpretations as given below:

1. Wisdom equation is a synthesis of reason and intuition. It suggests that the two play a complementary role and display a dialectical harmonization and not a dialectical opposition.
2. The principle of complementarity in quantum physics represents the essence of wholism. Wave particle complementarity is at the heart of the dual nature of light. The wisdom equation also represents the essence of this complementarity principle.
3. Chinese yin-yang model views the reality in a wholistic manner represented through the complementarity of the yin *i.e.*, intuitive aspect and the yang *i.e.*, rational aspect. Thus, wisdom equation is also a yin-yang equation.

* See, *Quantum Rope: Science, Mysticism and Management*, Subhash Sharma, New Age International Publishers, New Delhi, 1999, 127–132.

4. Indian *Ardhanarishwar* concept of 'dialectical harmonization' is also a holistic view of reality. The wisdom equation also captures the essence of the dialectical harmonization.
5. Wisdom equation indicates that decision making is a combination of the subjective and the objective which has also been referred to as 'omnijective', a phrase coined by Talbot (1981).
6. Wisdom equation reflects the two sides of the brain *i.e.*, the left and the right representing the rational and the intuitive faculties.
7. In wisdom equation we find a combination of the 'Western windows' indicating the rational-analytic or the scientific route to reality and the 'Eastern doors' indicating the intuitive-creative or rishi route to reality.
8. Wisdom equation is indicative of two routes to reality *viz.*, the 'atomic route' or the route of science and '*atmik route*' or the route of mysticism and spirituality. It implies learning from both these perspectives.

Wisdom equation also suggests three methods of problem solving *viz.*, rationality approach, intuitive/creative approach and wisdom approach. Thus science, art and wisdom represent three approaches to decision making and problem solving. Leaders and managers tend to use all the three approaches depending upon the situational requirements.

DIVISION, D-VISION AND DIRECT VISION APPROACHES TO KNOWLEDGE CREATION*

In general, human mind operates at different quantum states *viz.*, Division, D-Vision and Direct Vision. During Division state, mind views the reality in division terms *i.e.*, Divided vision. It divides the reality. In the 'scientific' approach to reality, mind usually operates in this state which is a 'reason' based dimension of mind. In contrast to division state, in D-vision state, mind takes a holistic view by viewing the entire horizon in its front. In this state mind operates at intuitive level. In its third state *i.e.*, Direct Vision state, mind gets the direct perception or *darshan* of reality. It operates at *darshan* level. Thus, there are three approaches to viewing reality and also problem solving *viz.*, Division or scientific approach, D-vision or intuitive-holistic approach and Direct-vision or *darshan* approach.

Different individuals operate from different states of mind leading to different mindsets. Hence, they view reality in different ways and their approach to problem solving also differs. The three mindsets or states of mind could also be viewed in terms of a three steps model. This model suggests three methods or approaches to problem solving and decision making through reason, intuition and *darshan* or direct perception approaches corresponding to Division, D-Vision and Direct Vision states of mind. During Division state of mind, mind views problems in terms of sub-problems and uses reason to analyze the problems and seeking solutions. This is typically scientist's mindset. In D-Vision state, it takes an integrative view and uses intuition to find solutions. This is an artist's mindset. In Direct Vision state, mind takes a direct-perception view and comes up with creative solutions that are holistic in nature and are 'out of the box'. It also represents the '*rishi* approach' to problem solving through super-intuition. In this approach *Rishi* also implies an individual who can Re-see the issues in new perspectives. Thus, corresponding to three quantum states of mind, there are three types of mind *viz.*, scientist's mind, artist's mind and *rishi* mind and correspondingly there are three ways of solving problems *viz.*, a scientist's approach, an artist's approach and '*rishi*' approach.

* See, "Quantum States of Mind: Ordinary Perception to Extra-ordinary Perception", Subhash Sharma, Psychological Studies, Journal of the National Academy of Psychology, India, January 2005, 9-15.

It may be indicated that the three types of mindsets are also reflected in the very language and phrases that we use to solve problems through Division, D-vision and Direct vision approaches. For example, the phrase, 'Conquest of Everest' represents the ego oriented worldview or Division mindset. In contrast, 'Quest of Everest' represents the eco-oriented or D-vision mindset. Viewing Everest as a place for spiritual experience and place of enlightenment represents the cosmic orientation or the divine mindset revealed through Direct vision. Similarly, when feminist thought was rooted in Division mindset, it emphasized the woman *vs.* man worldview rooted in the conflict view of life. When it shifted to D-vision perspective, it moved in the direction of man-woman complementarity. Further, the Direct vision view suggests the yin-yang integration and the concept of *Ardhanarishwar* as foundation for an integrative vision of humanity. Many other problems and their solutions in organizational and social contexts can be viewed from these three different perspectives.

In addition to the above three quantum states, there is also a fourth quantum state of mind that could be referred to as Divine vision state. At this state an individual's mind operates at revelation level and can achieve integration of scientist's, artist's and *rishi* approaches. For example, Ramanujan, Einstein, Aurobindo operated from this quantum state of mind.

It may be indicated that in direct revelation, deep insights arise from a direct experience of enlightenment or direct encounter with an event or person. Buddha's experience of enlightenment and Vivekananda's meeting with Ramkrishna Paramhansa, are illustrations of the same. Arjuna's example provides us another illustration of problem solving through enlightenment approach. In this case, enlightenment was created by lord Krishna through the technique of 'divine *darshan*' thus lifting Arjuna's mind from delusion state arising from 'division' view to 'divine vision' state. Once Arjuna's mindset changed, he felt liberated and rest is a known story.

The above discussion suggests a four step model of mind's evolution and development. In this model, reason is the first step of mind's evolution. In this stage, mind operates in Division quantum state. Intuition represents the second step. In this stage mind operates in D-vision quantum state. *Darshan* is the third step. In this stage, mind operates at Direct vision quantum state. Revelation or enlightenment is the fourth step. In this stage, mind operates in Divine vision or '*Divya Darshan*' quantum state.

The approaches discussed above are not only useful for creation of new knowledge, but are also useful for decision making and problem solving in practical contexts. Further, they create awareness about one's own mental evolution in life's journey. Hence, these ideas are also useful for one's own creativity and enlightenment as well as for invoking creativity and enlightenment among others as they lead to mental liberation, supramental liberation and transcendental liberation. These three steps represent an individual's mind liberation journey through different quantum states.