

Monarch Business School
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**Recursive Organizational Dynamics:
A Novel Approach To Organization Design**

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CANDIDATE:	William Maxwell Wright, M.Sc.
THESIS SUPERVISOR:	Dr. Jeffrey Shawn Henderson, D.Phil.

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QUOTATIONS

For we do not regard even the perfect hierarchy, the most harmonious organization, as a machine put together out of lifeless units that count for nothing in themselves, but as a living body, formed of parts and animated by organs which possess their own nature and freedom.

- Herman Hesse (from *The Glass Bead Game*)

All things grow in nature through the interplay of reinforcing processes that foster growth and limiting processes that constrain growth. This is why all effective leadership strategies always come down to nurturing reinforcing growth processes and relieving the limiting processes. Period. Effective leaders recognize intuitively the interplay of these forces and learn to work with them.

- Peter Senge (from *Leadership in Living Organizations*)

If you can see intuitively, you will live the true and natural way. If you understand the Tao intuitively, you will always be pure and still.

- Taishang Laojun (from *Cultivating Stillness*, Eva Wong, translator)

Naturalness is the basis of effectiveness. If one poses to be something else, one loses the charm of naturalness. The result is that one accumulates stress.

- Maharishi Mahesh Yogi (from a lecture in Kössen, Austria, September, 1971)

Pluralitas non est ponenda sine neccesitate.

- William of Ockham (*Occam's Razor*)

Change and movement have their times; safety and danger are in oneself. Calamity and fortune, gain and loss, all start from oneself. Therefore those who master change are those who address themselves to the time. For those who address themselves to the time, even danger is safe; for those who master change, even disturbance is orderly.

- Thomas Cleary (translator, from *Zhonghoji, the Book of Balance and Harmony*)

Thus, what enables the wise sovereign and the good general to strike and conquer, and achieve things beyond the reach of ordinary men, is *foreknowledge*.

- Sunzi (from *The Art of War*, Lionel Giles, translator)

Generalship requires one to follow nature, depend on timing, and rely on people in order to achieve victory. Therefore, if nature works but the timing doesn't work, and yet people act, this is called opposing the time. If the timing works but nature isn't cooperating, and still people act, this is called opposing nature. If timing and nature both work, but people do not act, this is called opposing people. Those who know do not oppose nature, do not oppose the time, and do not oppose people.

- Zhuge Liang (from *Mastering the Art of War*, Thomas Cleary, translator)

Spare the ROD and spoil the company.

- Author (from *Looking Through the Eyes of Nature*)

DEDICATION

This work is dedicated to the myriad teachers who have graced my life. Of course, that would include friends and family, many professional colleagues, and the grandmasters of *taijiquan* it has been my great good fortune to train under. However, here I would especially like to emphasize:

The memory of my mother who taught me how to think.

The memory of His Holiness Maharishi Mahesh Yogi whose patient teaching, vital epistemological discoveries, and remarkable kindness can never be repaid.

And also Grandmaster Xiong Wei whose performance remains, after more than a quarter of a century, the gold standard for my own *taiji* practice and without whose inspiration this work might never have been conceived.

NOTES TO THE READER

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PURPOSES AND ATTESTATION

This document is prepared as a dissertation submission to UGSM-Monarch Business School, Switzerland in fulfillment of the degree of:

Doctor of Philosophy in Business Research

The author hereby attests that the work herein provided in fulfillment of the above degree requirements is wholly of his own effort and hand. Further, the author attests that this document constitutes the entire submission of the dissertation component.

Dissertation Committee Members:

Committee Chair: Dr. Jeffrey Shawn Henderson, D.Phil.
Dean of Studies
Professor of Business Ethics

Member: Dr. Donald Oxford York, D.Phil.
Dean of Student Development
Professor of Organizational Psychology

Member: Dr. Christos Antoniou, Ph.D.
Professor of Management

March 15, 2014

William Maxwell Wright, M.Sc.

Date

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CHAPTER ONE - INTRODUCTION

INTRODUCTION

1.1 Background

It is ironic that while the vagaries of legal history granted corporations all the rights and privileges of real flesh-and-blood citizens, they are still frequently organized around the mechanistic command-and-control structures in vogue a century ago (Wheatley, 2006). And while the public becomes ever more enraged by the seemingly cynical abuses of a corporate elite hiding behind these assumed rights, it is clear that in a fluid, globalized economy, such rigid and outmoded organizational structures are inadequate in the area that is truly the corporate domain, i.e. the marketplace (Senge P. M., 1999; Capra, 2010). In order to address the suggested operational shortcomings of the modern company, there is a growing cadre of researchers and consultants who have realized that the body corporate is better described by a more organic model of organization. These researchers include Margaret Wheatley, Peter Senge, and Arie De Geus. In order to illuminate new approaches these authors show repeated allusions and allegories to biological systems and even comparisons to the strange world of quantum mechanics.

In these modern perspectives, instead of a Newtonian production-oriented collection of individuals and discrete events, the corporation is viewed as an energetic creation-oriented web of relationships (Senge P. M., 1999; Wheatley, 2006; Wolfe, 2011). This is the concept of a living organization, where 'living' refers to the way it communicates,

evolves and creates, and not to its legal status with respect to the legislative apparatus. Unfortunately, there appears to be no direct formal correlation between organizational processes and actual processes in living systems after which the theorists model them and this is identified as a possible gap in the current state of the discipline. The presented research introduces a novel method of rational and consistent explanation for how the complex web of organizational relationships follow, and can be characterized by, the underlying mechanisms responsible for the orderly functioning of the natural world. A formal model is presented that connects the concepts of organic organization with a structured means of design. In 2004 the author coined the term “Recursive Organizational Dynamics” (ROD) to describe the model which provides a powerful linkage between traditional organization design and the intrinsic patterns of communication inherent in nature (Wright, 2007).

Successful organization design should be about people and should be oriented towards the desired corporate culture it is intended to support. However, up to this point in time it can be argued that the western academic community has not connected the organizational structure of business relationships back to the underlying theories of the natural world that are core to more holistic systems such as those espoused in the Eastern classical philosophies (Senge P. M., 1999). What is believed to be needed is a theory that augments the existing scholarship with a deeper and richer understanding and application of the architecture described by the natural sciences and found within the laws of nature. This augmented theory would be evidenced through discussions of

biological systems coupled with a discussion of Eastern philosophy, thus striving to fill the gap in the existing western academic business literature that does not presently speak to this line of reasoning.

Outside of any legal considerations, many have noted that the characteristics of a modern corporation fulfill the defining requirements of a living system, a new life form and yet almost all organization design seems to have been addressed at the macroscopic surface process level in building communication pathways and structures (Wheatley, 2006; Capra, 2010; Wolfe, 2011). For the sake of clarity, the term “microscopic” will be adopted to refer to events at the subatomic level, and the word “macroscopic” will be used to mean everyday reality on the ordinary level of business activity. Senge observes that: “the metaphor of the machine, which has given us incredible material affluence but also rigid bureaucracies, assembly-line jobs and schools, and an ever more frenetic, disconnected way of living, must be superseded by the image of the living system”, (Senge P. M., 1999). The principles of quantum cosmology and chaos theory are beginning to appear in organic organizational models, but there has been little recourse to practical and time-tested oriental cosmologies and techniques to illuminate and manage underlying mechanisms (Capra, 2010). This knowledge has shaped eastern understanding of the world for thousands of years since the founding of the Chinese and Indian civilizations usually considered to be around five thousand years ago. Arguably, what we find missing in the western worldview is a lively connection and attention to the intrinsic natural architecture shaping evolving systems,

from the microscopic level throughout their range of development (Capra, 2010; Wheatley, 2006; Senge P. M., 1999).

The structure of an organization is what is typically depicted in the organization chart and is a specific result of organization design. Kates and Galbraith have stated that:

Organization design is not limited to structural considerations, and many variations of a structure can be made to work... The structure sets out the reporting relationships, power distribution, and communication channels (Kates, 2007, p.9).

There are many ways to structure and staff an organization but as functional groups and departments become more decentralized and structurally complex, there tends to be greater use of internal and external consulting services, ad hoc project-based groups and matrix reporting structures (Kates, 2007, p.96). Also, the more people involved in a logical unit of work and the more complex the organizational structure involved, one can argue that it becomes more difficult to manage interpersonal communications and relationships. Therefore, as the structure of the work environment continues to diversify, there could be a need to gain additional insight into ways of enhancing interpersonal relationships and effectiveness in both intra-group and inter-group situations. Kates and Galbraith note that: "It is the job of leaders and managers to manage the complexity that is created by the organization's design", (Kates, 2007, p.5).

1.2 The Cosmological Connection

For millennia, the peoples of Taoist China and Vedic India have had highly detailed cosmological models that they have used to explain everything from the galactic to the smallest processes within physiology. Such understandings have long ago been put to use in an organizational context. For example, Cheng Yi, the eleventh-century luminary and founder of the *Lixue* movement in China, used the venerable Taoist *Yijing* in analyzing group dynamics.

By understanding the patterns of events and the human condition, Cheng contends that it becomes possible to bring about mutual understanding and cooperation among people, thus making possible the effective accomplishment of the tasks facing the group (Cleary, 1988, p.218).

Nonetheless, attempts at incorporating oriental perspectives into the modern organization design process have not found a place in the mainstream literature. For example, a Google Scholar bibliometric analysis on Feb 2, 2014 for articles published between 1950 and 2014 using the search terms “organization[al] design” and “*bagua*” yielded just one result: a thesis submission by a graduate student in the Political and Social Sciences department of the University of Gent in Belgium discussing chaos theory in conflict resolution that devoted a single page to the Taoist philosophy (Wyseur, 2013). Similarly, a search on “organizational design” and “Vedic literature” returned two

relevant results: one being a general review of management practice not surprisingly put out by the MBA faculty of Maharishi University of Management (King, 1997), and the other, a published journal article on HRM by a faculty member of the Stockholm University School of Management in Sweden (Gustavsson, 2004).

Moreover, it is not clear that the fundamentals have been understood, or at least, faithfully transmitted, by sages and intellectual leaders throughout all those centuries (Wright, 2007). That is, the present research has uncovered many inconsistencies of explanation in the knowledge that has been passed down. For example, the traditional way of reading the figures from the Yijing classic is from the bottom up. However, the component foundational diagrams in such figures are analyzed top down, making the reading inconsistent and the imagery opaque. Therefore, in order to compile a congruent understanding of the Eastern classics, it will be necessary to revisit each main text with insights gained from the other principal works, driving out logical inconsistencies and doubtful interpretations that have so far been accepted. In this way, previously unnoticed correlations and parallels will emerge that may result in a holistic knowledge that could enrich both cultural traditions while also suggesting a system for analyzing and building organization designs. Thus a scientific description of the entire process of relationship dynamics in nature may be designed and developed that could then be successfully applied to a contemporary organization design in a culturally neutral way. In addition, by co-opting certain useful procedures elucidated by historical writers, it will be possible to develop practical techniques that others may

employ for optimizing communications and work-related transactions within an organizational setting. Thus, although Recursive Organizational Dynamics, ROD, has a well-organized modern framework, the underlying philosophical principles are a synthesis of the proto-historic Vedic and Taoist cosmologies of ancient India and China, respectively.

1.3 The Chaos Connection

The system of relationships found within and between organizational structures, in terms of sheer size, scope and complexity is reflective or reminiscent of the role of chaos in the universe (Capra, 2010). Further, this process appears to be described with intricate precision in the philosophical traditions of ancient India and China. This machinery is seen to run automatically, efficiently, purposefully and without any commonly recognized organizing structure. It has been further argued that the underlying fabric of the universe appears to be self-organizing by virtue of its very nature (Hagelin, 2004; Walter 1996; Wheatley, 2006; Barlow, 2011). Moreover, this is postulated to be the case at every scale, from the smallest quantum-mechanical event to the cosmic.

Once again, an important feature of the oriental approach is the fact that the mechanisms are put forth as being applied at every level from Planck Scale to cosmic. Thus, the principles are said to be recursive, or otherwise said, we find them nested within every level of structure. And by transference, they can be used to describe any

level within an organization, from a small work group to the enterprise as a whole. It is this essential characteristic that gives the differentiator of “recursive” in the model’s name. Recursive Organizational Dynamics, ROD, is named for the fact that similar patterns of relationship are seen at every level within an organization. Therefore, as mentioned, the model can be applied across the entire range of organizational units.

Although we pattern much of our technology after the surface achievements of nature: bio-engineering, robotics, pharmacology, cellular automata, for example, human organizational endeavors for the most part are directed towards achieving specific end results without much consideration for background natural processes. Our corporations, defense forces, governments and associations have demonstrated our immense ability to organize and produce extraordinary results in the face of environmental inertia. With the perspective gained from the proposed research, it is anticipated that corporations and other social organizations can be further enhanced and balanced by the directed application of organization design representative of nature’s own functioning.

1.4 Vedic and Taoist Cosmologies

The proto-historic Vedic cosmology of ancient India and the earliest Taoist philosophical legacy of FuXi, from around the same period in China, both show startling similarities of principle with such modern disciplines as theoretical physics and molecular biology (Walter, 1996). The Vedic traditions of *Sankya* and *Vedanta* provide descriptions of an

eightfold reality in terms of the sequential bifurcation of an undivided primordial field of consciousness (Maharishi, 1967). Similarly, legend has it that FuXi, the original Taoist progenitor of the human race, brought ancient China the concept of the *bagua* (eight symbols) as a similar binary derivation and expression of reality from out of an undivided wholeness (Wu, 2009). The cultural background, symbolism and language of the two ancient traditions are however completely different, but their underlying philosophies can be shown to be mathematically and structurally similar if not identical. This congruency will provide the foundation for the ROD model to be developed within the context of the presented research.

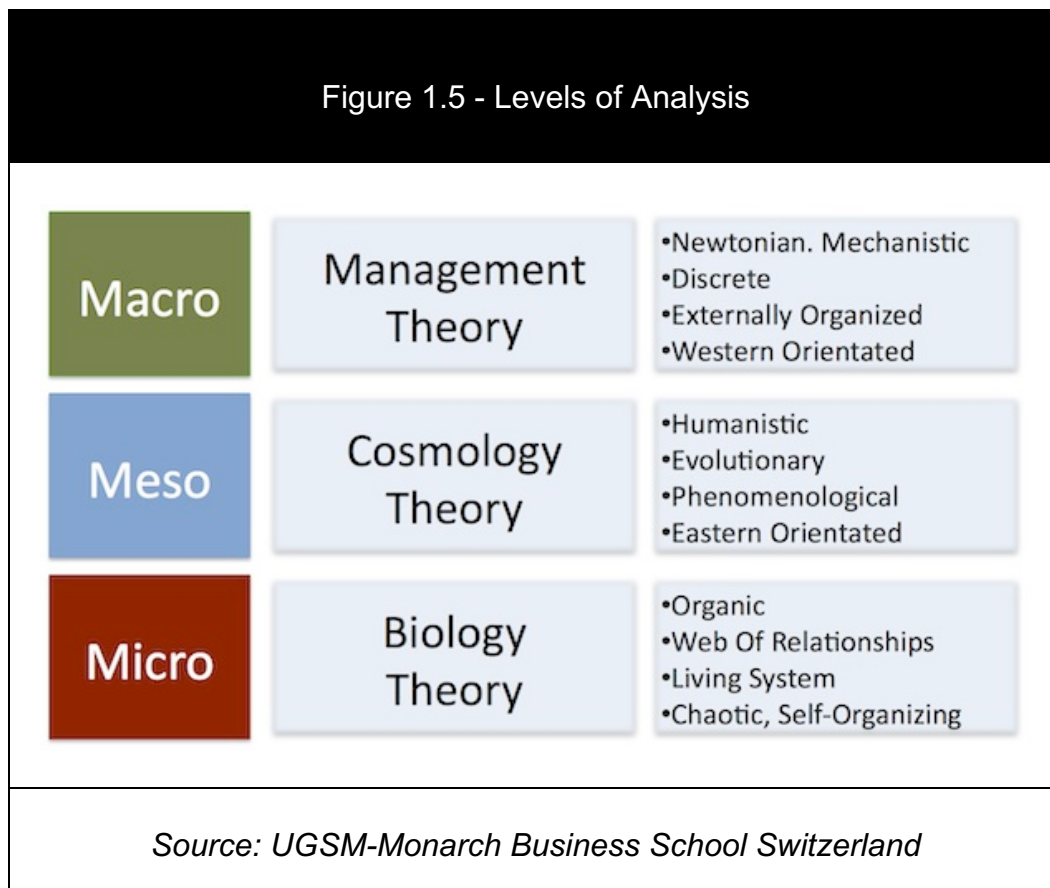
One can argue that our Western culture has a very ingrained Newtonian perspective where we view the world and events as a granular collection of discrete particles and processes (Capra, 2010). The oriental view, in contrast, is seen to be more concerned with intrinsic relationships and the innate patterns of manifestation that are common to all specific instances and circumstances (Moore, 1989, p.120). Taking this latter approach, discrete objects and occurrences are seen as fleeting nodes or points of interference on a complex web of inter-relationship and have no independent reality. However complex a situation appears, the fundamental basis is astonishingly simple: the surface experienced level of reality is a recursive and ephemeral elaboration of the underlying simple structure. Thus, things appear much less substantive and objectivized in the classical oriental world view than they do to the modern observer perspective. With a new model derived from the Eastern philosophies that attempts to

describe things in principle, rather than specific items in local phenomenal detail, it is hoped that it now becomes possible to perceive and describe overall trends and tendencies throughout the spectrum of organizations, cultures, relationships, events and circumstances.

1.5 Eastern versus Western Thought

Like many aspects of modern theoretical physics, the Eastern systems are formulated on subjectivity, based in the microscopic realm that is then expanded to describe all surface phenomena (Capra, 1975, p.140). This is considered to be the opposite approach of the materialistic occidental path that looks at the macroscopic, objective surface level and then progressively expands its scope to include subtler, more comprehensive strata of existence (Capra, 1975, p.131). The Indian and Chinese cosmologies suggest that there is an underlying mechanism of unfoldment that is present behind the scenes in the evolution of every event, relationship and social transaction (Blair, 1975, p.163). In addition, these philosophies and their powerfully descriptive symbolism can be presented in a very accessible way. Armed with the oriental understanding, it can be argued that there exists a perspective that demonstrates an intrinsic pressure for any specific outcome to proceed according to a certain relational blueprint. It follows then, that the possibility exists that through an interpretation and application of the contemplated ROD model, everyday circumstances could be better described or anticipated with knowledge of these mechanics.

Norman Madarasz (2013) has said that, “When [academic] fields separate themselves off from philosophy, there isn’t much reference back to philosophy.” It is argued that an interdisciplinary combination of the principles found in traditional Western management theory, biological systems theory and Eastern cosmological philosophy when brought together within a new holistic conceptual model or framework would provide a much more robust operational theory to explain the underlying dynamics and characteristics of organization design faced by the modern globally operating corporation. The interdisciplinary nature of the contemplated research is depicted in Figure 1.5 which shows the distinct levels of analysis and their underlying characteristics.



1.6 Recursive Organizational Dynamics Analogy

The background processes of nature are in effect whether or not they are taken cognizance of. With regard to randomness, Sterman (2000, p.127) cautions that in most situations, randomness is not intrinsic to the system but rather a measure of our ignorance about it. In order to elucidate these assertions, a practical example of consumables or finished goods inventory management may be put forward. Within this example suppose that after a sizable quantity of an item has been withdrawn, the parts manager decides to re-order. Whether the order is placed according to some explicit computer algorithm, or simply by the storeman looking into the bin and using his best judgment, there are several consciously or unconsciously implied parameters being followed in arriving at an order quantity. There are obviously financial implications of overall stock holding, and there may be special overriding circumstances of which the procurement staff is aware, such as bulk discounting, promotions or shipping delays. But in terms of the current level of demand, in every order there is an implied safety or buffer stock policy plus an implied replenishment cycle and associated lead time. The inventory policy may not have been formally addressed but, nevertheless, it is implicit in the final order quantity. Only when all those policy elements are specifically set within a model, and adhered to as the boundary parameters for the placement of every order, can the inventory as a whole be brought under proactive control and balance. However, once policy has been set, the ordering process becomes automatic and the framework decisions are removed from the day-to-day work flow. This separation of the generic

background from the specifics of demand forecasting frees management to focus on the difficult business of effective market decision making. In similar fashion, it is suggested that the directed management of organization design, and the resultant communication pathways, can only be improved and enriched by conscious consideration and inclusion of all the underlying “policy parameters” of nature influencing any transaction. Such natural policy parameters can be shown to be projected from the subtlest level of quantum reality.

1.7 Recursive Organizational Dynamics (ROD) Model

Recursive Organizational Dynamics tries to put these “policy” insights into a graphical model that makes the mechanics easier to envision for most effective organization designs, and facilitates the creation of interventions that will optimize inter-personal transactions within the deployed design setting. According to the ancient cosmologies, those intrinsic propensities of evolutionary unfoldment and emergence are orchestrated by strange attractors within the churning of chaos, and are in play whether or not one is conscious of them. A formal mechanism as with the proposed ROD model may provide both a descriptive and prescriptive framework for relationship and communication management. By automatically accounting for the background influence of nature, it could remove decision making “noise” and allow the practitioner to focus on the details of a particular circumstance for a more efficient and thorough resolution. Another metaphorical analogy from the data processing field is provided in Appendix B.

Regardless of what makes one company unique from another, we can say that all retail companies may be generically similar in so far as they deliver their inventory or service to their customers. Therefore, no matter which organization is being considered, the same reordering and stock optimization principles are being followed. Otherwise said, under the principles of the contemplated ROD model, it makes no real difference how big or how small a unit of study may be: the underlying principles are the same. Be there differences in work group size, company culture or the style of organizational structure employed, all ROD cases are submitted to the same scrutiny. The principles and “policy parameters” of the contemplated Recursive Organizational Dynamics model are implied, and working in identical fashion behind the scenes to structure the fabric of communications and the flow of information regardless of the level of analysis or size of the subject area.

It is believed that the processes mentioned above and the processes associated with any organizational structure fundamentally affect organizational behavior. Gibson et al (2006) describe these processes as those activities that breathe life into the organization chart, and observe that:

Sometimes, understanding process problems such as breakdowns in communication and decision making will result in a more accurate understanding of organizational behavior than will simply examining structural arrangements (Gibson, 2006, p.7).

Modern large-scale organizations are so complex in structure that they cannot be understood except by the use of metaphors and models (Capra, 2010). Similarly,

Stanford (2007) feels that knowing what a model is and the reasons for using one are vital in determining which to use. She further states that:

Without a model it is hard for a CEO or other senior executives to describe or think about their organization in a holistic way. Their tendency is to think about only the structures (that is, the organization chart), and with this narrow focus they cannot see the necessary alignment of all the elements that comprise a fully functioning organization (Stanford, 2007, p.20).

Capra emphasizes the need for two kinds of leadership in order to deal with “design” issues (directed, goal-oriented leadership vision) and “emergent” issues (engendering and supporting aliveness and creativity within the community). Understanding the self-organizing nature of living systems as they present themselves in organizational culture requires acknowledgment of the vital importance of network relationships and ad hoc communications (Capra, 2010). Leadership requires building a structure that nurtures these social interdependencies. Moreover, Peter Drucker has declared that:

Analyzing relations is not only indispensable to the decision of what kind of a structure is needed. It is also necessary to make the vital decision how the structure should be manned. Indeed, only an analysis of the relations in a job makes possible intelligent and successful staffing (Drucker, 1968, p.243).

Thus, due to its especial focus on describing and managing innate communication pathways, the contemplated ROD model could prove vital to inform management with regard to the intrinsic relational dynamics between any applicable functional or staffing components within a business. Once those staffing relationship pathways, including their previously unknown but underlying evolutionary motivators, have been fully

understood and illuminated by an analysis using the ROD model, it is believed that a more appropriate organizational design and structure could be chosen. Furthermore, it is put forward that the selected design might be more effectively implemented, and more rewardingly maintained, through the insights provided by the ROD model. In addition, the Recursive Organizational Dynamics system should present a formal framework for designing various strategies and techniques for engineering, directing and managing ongoing social transactions for more optimal communications in the workplace once the initial structural design has been determined. John Sterman notes that: “Too many managers, especially senior managers, spend far too much time acting as pilots—making decisions, taking control from subordinates—rather than creating an organizational structure consistent with their vision and values and which can be managed well by ordinary people”, (Sterman, 2000, p.84).

1.8 Main Research Question

Keeping in mind the above discourse along with the necessity to clearly identify the crucial elements of the analysis with respect to organization design the following research question has been developed:

Can proto-historic Vedic and Taoist cosmologies be reconciled and productively co-opted, in conjunction with existing paradigms of western business practice, to develop an organization design model that clarifies inter- and intra-group relationships while providing a framework for proactively optimized communication?

In responding to the above research question, it is anticipated that a bridge will be developed between existing models of organization structure and design, and the underlying dynamics understood to be the basis of natural systems and processes identified by the Eastern philosophical traditions. In elucidating the above, the research will also investigate the following secondary or sub-research questions:

- I. Is the contemplated model effective and useful for managing functional and interpersonal transactions? Ideally, the model could be used both descriptively to characterize the essential features of any relationship pathway, but also prescriptively in order to proactively influence any specific desired outcome.
- II. Can we optimize the deployment of skills and talents and minimize areas of potential conflict and miscommunication? And will the model be able to guard against poorly conceived job design?
- III. Can diagrams and techniques derived from ancient eastern philosophies be used to map dynamical structures within the modern workplace?
- IV. Does the contemplated model support decision making and proffer a means to proactively intervene in a predetermined manner in order to favorably influence the outcome of any specific transaction?
- V. And further, is it possible to couch the deployed methodology in an easy-to-use framework devoid of all the arcane philosophical jargon?

1.9 Research Relevance

According to Naomi Stanford, organization design is formally:

The outcome of shaping and aligning all the components of an enterprise towards the achievement of an agreed mission (Stanford, 2007, p.1).

It suffices to say that any descriptive or predictive mechanism that could improve the quality of managerial decisions and increase the human cohesiveness of a workgroup should be of great value to any organization. It is hoped that a new conceptual model that could proactively mitigate unfavorable interactions within any organizational context would be a most useful addition to the business management arsenal.

Moreover, if a new conceptual model could bridge the philosophies of the East and the management thought of the West while being: i) stripped of the arcane terminology; and ii) codified into a generalized, simple-to-apply modern management framework, then scholarship stands to gain a mechanism that may prove effective for millions of business practitioners and management scholars.

When the essence of all the philosophical inputs is rationalized within the rubric of an acceptable management framework, it is anticipated that the final product will produce a very simplified set of prescriptions useful for myriad businesses and organizations.

Otherwise said, once the organizational functions have been coded and the

fundamental conceptual model diagram has been built, then the actual business application should not influence the overall efficacy of the model. The reason is that the fundamental characteristics of the constituent relationships are expected to be similar in each case, i.e. model-driven rather than business-driven. In summary, the contemplated framework will be organizationally and hierarchically independent and is expected to be suitable for deployment within any context.

1.10 Research Methodology

The research restricts itself to the core concepts and the case study analysis of several organizational environments. It further suggests several techniques to optimize communication. The chosen research methodology will be broken down into three separate sections each with its own particular focus as described below:

1.10.1 Stage I: Heuristics and Meta-Research

The first stage of the research will primarily be carried out using a Meta-Analysis of the seminal literature from both the domains of Eastern Philosophy and Western business literature as they pertain to organizational structure and dynamics. A literature review will be completed with respect to the Vedic and Taoist literature as well as modern Western business literature in the post-1950 era to identify important concepts, paradigms and inflection points with respect to assumed theories and closely held beliefs. That is, high level analysis will be performed to elucidate and illustrate the

trends and focus of the literature as well as identify the knowledge gaps that persist in conjunction with the identification of the more resilient theories within the domain.

Further, a study of the comparative elements and characteristics of the predominant and resilient theories from both Indian and Chinese cultural perspectives will be analyzed in order to identify any shared elements and mutual understandings with regards to organizational theory and structure. In like fashion, a study of the contrasting elements and characteristics of the predominant and resilient theories from both cultural perspectives will be analyzed in order to identify the divergent nature of the systems and to speak to the opportunities to successfully bridge the divide between these separate yet possibly concordant systems of thought.

LoBiondo-Wood and Haber define a theoretical framework as “a frame of reference that is a basis for observations, definitions of concepts, research designs, interpretations, and generalizations” (LoBiondo-Wood, 1998). There are a number of objectives that must be fulfilled in order to build a basic theoretical framework for Recursive Organizational Dynamics during this first stage of the research:

- i. First, the parallels between the principles of manifestation demonstrated by the internal structure of Rig Veda, original scriptural text of proto-historic India, and the *taijitu*, original proto-historical cosmological description of reality from China,

must be established. From this essential theoretical foundation, the various modes of relative expression emerge.

- ii. Second, the parallels between, and ordering of, the components, *mandalas* or chapters, of the Rig Veda and the components of the Chinese *bagua*, 8-fold structure, must be established. Structure in the classical texts is of paramount importance, and forms an integrated whole with the context. This piece of the model provides the backbone for explicating the various communication pathways inherent in any organizational structure.
- iii. Third, it can be argued that the manner in which the *bagua* are traditionally read is illogical and in disagreement with the tradition itself. This is a fundamental flaw in interpretation that has endured for centuries. Hexagrams (two stacked trigrams) are read from the bottom up, therefore lower lines and trigrams are held to refer to earlier stages (Blofeld, 1968, p.54). Thus it is highly illogical that the component trigrams themselves are traditionally interpreted from the top down (Cooper, 2010, p.67). It will be necessary to re-examine and reclassify the way in which the trigrams, or *bagua*, are interpreted. This will illuminate the previously impenetrable imagery of the Chinese Yijing classic and completely correlate the context with the Vedic counterparts. This single misunderstanding appears to have had the effect of making the traditional texts falter when examined through the lens of western rational thought.
- iv. Fourth, the task will be to remove the confusion in commentaries on both the Indian and Chinese classics with regard to “elements”, and how the Vedic and

Taoist concepts precisely align when this widespread ambiguity is removed. The resultant simplification will be justified in terms of modern Vedic scholarship, theoretical physics, and the classic oriental systems themselves. At this point a coherent, cohesive, and internally consistent framework for describing and interpreting the evolution of any phenomenon or relationship is expected to emerge.

- v. Fifth, once the above is completed, it will be possible to construct a graphical model that encompasses both the Vedic and Taoist perspectives in a way that can be immediately applied to western organizational theory.
- vi. Lastly, the resultant ROD model can then be considered in relation to various western approaches to see how the framework provides an improved mechanism for addressing gaps in the scholarly literature. Particular comparison will be made to the Spiral Dynamics movement of Clare Graves, Don Beck and Chris Cowan (Beck, 2006).

1.10.2 Stage II: Blended Action Research

The second phase of research takes on the form of blended action research. Using the context of information systems, the contemplated model will be reiteratively built and tested for a hypothetical Business Intelligence (BI) group. For this exercise, BI will be considered to be an internal consulting service for the business. Because it is expected that the model will predict certain clear characteristics for each component, there will be a measure of self-correcting that will operate in tandem.

1.10.3 Stage III: Case Study Analysis

The final phase of the research will construct other scenario examples across diverse organizational structures, including a retail sales organization and a non-profit teaching group. The goal will be to determine whether the contemplated model delivers results consistent with the BI solution within these varying environments. If successful, the model should be able to address the desired categorization aspects that a useable and functional model should encompass within the envisioned scenarios.

The final goal of the research is to provide a graphical model of the dynamics and tendencies of and between the various functional entities within any organization based upon the internal mechanism of the ROD model.

As a result of the research, the following outputs are intended:

- i. The development of diagrams for various structures across the spectrum of business and non-profit organizations which demonstrate and provide a solid framework that describes the intrinsic relationships and skills dynamics within the chosen group.
- ii. The compilation of example transactions to illustrate the resultant possibilities of transformation and relationship predicted by the model when applied to an organizational unit.

1.11 Summary

Modern organizations, finding themselves immersed in a globally distributed and culturally diverse environment, are learning that biological models of design and structure allow for more effective management and communication.

According to the millennia-old philosophical systems of India and China, the universe itself follows a model that defines how phenomenal existence emerges from out of the primordial chaos. The approach is subjectively oriented, as opposed to the general western objective proclivity, which gives it the ability to describe events very broadly in principle, rather than specific instances within tight localized boundaries. It is believed that this model can be expressed mathematically and very simply portrayed in a graphical presentation. Modern physical and biological sciences are increasingly coming to describe their own disciplines in terms that closely echo those ancient oriental systems (Walter, 1996; Goswami, 1993, p.49).

Recursive Organizational Dynamics is a novel organization design model based upon a re-evaluation and synthesis of proto-historical oriental cosmologies. It may be shown that the model could be applied to any organizational structure, within any environmental or social context, to illuminate the underlying tendencies and natural energetic template. This may in turn possibly assist in making better staffing decisions in both initial job design and ongoing operational management.

CHAPTER TWO - LITERATURE REVIEW

LITERATURE REVIEW

2.0 Literature Review

In order to adequately address the research at hand, it is necessary to investigate the scholarship as it presently resides within the main domains of:

- I. Modern management theory;
- II. Eastern philosophical thought;
- III. Biological and experimental psychology; and
- IV. Theoretical physics.

Convergence and divergence of the dominant Eastern and Western schools of thought will be examined in order to provide a foundation on which the development of the contemplated model may take place.

2.1 Modern Management Theory

The proposed model is intended to augment and enrich traditional organization design and implementation. The contingency approach to organizational design states that there is no one best way to manage an organization and that the organization design needs to fit the specifics of the environment (Gibson, 2006, p.7). For the purposes of clarifying the domain where the contemplated ROD model might be most useful, organizational leadership, and design, could be best split into two main camps:

- Those that can be categorized as having their roots in the mechanistic paradigm that arose out of the Industrial Revolution, based upon principles formulated by Descartes and Newton (Capra, 2010); and
- Those that are modeled after the emergent properties of self-organizing living systems (Wheatley, 2006).

Gibson et al (2006, p.408) use the two terms *mechanistic* and *organic* to describe the contrasting organizational styles because they are relatively descriptive of the essential features. They go on to describe the Mechanistic Model as a “body of literature that emerged during the early 20th century which considered the problem of designing the structure of an organization as but one of a number of managerial tasks, including planning and controlling.” A product of the command-and-control era, the mechanistic design models emphasize achieving “high levels of production and efficiency through extensive use of rules and procedures, centralized authority, and high specialization of labor.” In sharp contrast, what they call the Organic Model emphasizes “achieving high levels of flexibility and development through limited use of rules and procedures, decentralized authority, and relatively low degrees of specialization”, (Gibson, 2006, p.408). Clearly the goals and circumscribing philosophies of the two approaches stand in clear contrast to one another. The biggest differences between the two models, Gibson et al explain, are a result of the different effectiveness criteria each seeks to maximize. They observe that “while the mechanistic model seeks to maximize efficiency

and production, the organic model seeks to maximize satisfaction, flexibility, and development”, (Gibson et al, 2006, p.408). Capra (2010) adds that: “The main contrast ... is between the metaphor of organizations as machines and that of organizations as living systems.”

Nevertheless, more and more organizational leaders and researchers are recognizing that a systems approach to understanding organization structure as a living process better reflects complex interactions in the field than the older mechanistic models. In order for organizations to survive they have to adapt. Sterman (2000, p.107) notes that a system’s behavior arises from its structure. Fritjof Capra (2010) notes that: “There is a growing recognition that [complex systems] have brought with them a business and organizational environment that is almost unrecognizable from the point of view of traditional management theory and practice.” He further warns that the complex, but purely goal-oriented, organizations that have emerged as a result of exponentially more powerful technology are “the main driving force of global environmental destruction, and thus the main threat to the long-term survival of humanity.” Profit at the expense of the environment and the quality of life of the majority of workers no longer appears sustainable.

The contemplated ROD model seeks to provide a bridge to reconcile the 20th century machine-like approaches with emergent designs that are based upon living systems.

This may be achieved by correlating and aligning necessary function-oriented structure with the natural rhythms of evolution that operate in harmony with human aspirations.

As leaders recognize that the older structures have to change to accommodate the new global realities and complexities, they are discovering that successful metamorphosis is very hard to achieve in a traditional hierarchical corporate mindset (Capra, 2010). Capra finds that: "Instead of managing new organizations, they ended up managing the unwanted side effects of their efforts." According to Barlow and Stone (2011), living systems theory acknowledges that living systems, including organizations, show different processes and properties than mechanical systems, and that this approach suggests strategies for leading organizations through social change.

However, new more flexible structures bring in additional challenges. For Gibson et al (2006), an important consideration is that of role conflict. As organizational structures become more complex, more matrix-oriented, and more quickly evolving, an individual may face the situation of multiple simultaneous role requirements. They observe that there are several types of conflict that can occur between organizational roles, viz. person-role, intra-role, and inter-role. According to research, role conflict is responsible for increased psychological stress and other adverse emotional reactions in the individual affected (Gibson, 2006, p.258). They also observe that:

Management can minimize certain types of role conflicts and should be continually aware that the consequences of conflict to the organization can include ineffective performance by individuals and groups (Gibson, 2006, p.258).

Whereas commonly used organization design methodologies tend not to directly address these concerns, the contemplated model is specifically concerned with aligning role qualities and inter-role relationships in order to minimize possible role conflicts and thus minimize the resulting costs incurred by the organization.

Kates and Galbraith (2007, p.96) note that interpersonal relationships and networks at work are the basis of coordinating all workflows. They list a few of the organizational forms that are prevalent in the modern business world, and note that small companies where staff work in the same location, networks of communication and relationship form spontaneously, but in a wider context they need to be deliberately fostered. Global companies “must take more deliberate [management] action to create communication networks among people who share a common interest but do not have contact as part of a reporting structure”, (Kates, 2007, p.99). Two of the more structured forms of organization that may lend themselves best to illustrating the contemplated ROD model are formal teams and matrix organizations.

- Formal Team. A formal team is a specifically designed subgroup within the hierarchy created to guarantee coordination and accountability over an extended geography or in order to provide it visible legitimacy within the company in order to undertake a specific activity, such as product development. Because a formal team has a clearly defined mandate and reporting structure and clearly defined charter and responsibilities, it requires more resources than an informal group in

order to function effectively. In a global context, that would include the necessity for cross-cultural training and specific provisions for enabling smooth communication between members.

- Matrix Organizations. The matrix organization is the most flexible in situations where there is more than one logical reporting path. When there are both geographic and product-centric considerations then the matrix team can be employed. However, matrix organizations are believed to be the most complicated forms to manage because of conflicting goals and accountabilities created by multiple reporting hierarchies (Runde, 2013). Kates and Galbraith (2007, p.110) define a matrix as “an organization in which some employees have two or more bosses, representing different organizational objectives.” Management is simplified by ensuring that the majority of decisions are made by only the manager in the matrix directly responsible for a specific outcome. Kates and Galbraith (2007, p.99) remark that “...a few decisions are made jointly... focus[ing] on hiring, setting goals, and evaluating the performance of the people who report to both managers” but they suggest that companies avoid matrices wherever possible because they are so hard to manage. This is one target area where the clarity brought about by ROD analysis could be of service in managing split roles by minimizing conflict and communication contentions.

A theme that will be repeated is that in an organic design, the fundamental unit of organization is relationship, process or activity, rather than the individual job description or position. Therefore, it is of paramount importance to clarify the activities, as opposed to skills, within a role. Kates and Galbraith (2007, p.122) describe this relationship orientation as “the boundaries and interfaces between roles.” They assert that the objective is to preemptively plan for the areas of potential friction by mapping process flows. They insist that it is not necessary to map all touch points but to focus on the ones that have the greatest impact across the organization as a whole. We will see that the contemplated ROD analysis should automatically map the prime relationship dynamics, and only those critical intersection points, and furthermore does so in a manner that maximizes frictionless information.

Organization design has almost as many approaches as there are organization structures. Nonetheless, the end result is always a functional mapping of the desired flow of goods and information, with a view to providing better service and furthering the mission of the enterprise. And the most granular building block is an individual with a job and reporting relationships that fit her into the web of the organism as a whole. Naomi Stanford (2007, p.35) categorically states that “any discussion on whether to determine function first or whether to choose the model first is immaterial.” This seems at odds with many other scholars’ admonitions to determine process pathways before anything else, but she goes on to clarify that “most models force the clear declaration of the organization’s function”, (Stanford, 2007, p.35). She believes that the choice of model and approach to design is more a question of fit since “there is no single choice

of model for an organization design in the same way as there is no single choice of car for a family”, (Stanford, 2007, p.35). She asserts that making the design model choice usually involves compromises. However, the contemplated ROD model could reduce the need for those trade-offs because it may be seen as a complete system of process and relationship analysis that is intended to form the preliminary foundation that could then include whatever other design model is most suitable, if any.

To help choose the model for the specific organization, Stanford suggests the following diagnostic questions that are directly relevant to the ROD model (Stanford, 2007, p.35):

- Does the model package the organizational elements in a way that stakeholders will recognize? Are there enough, are these elements important in the organization?
- How will stakeholders react to the presented model? Is it jargon-free, simple to understand and communicate?
- Will the model find favor across the organization or will it compete with other organization design models?
- Does the model harbor implicit assumptions that might help or hinder design work? For example, does it include or exclude factors such as local culture (both national and organizational) and human factors (such as personalities), or does it suggest ways that elements may relate to each other?
- How adaptable is the model for the specific context and circumstances in which it will be used? Does it enable any new perspectives or innovative thinking? Is it scalable to small work-unit design and whole organization design?
- Does the model work with other models in use in the organization (for example, change management or project management models)?
- Are the costs to adopt the model acceptable (for example, training, communication and obtaining buy-in)?

- Does the model allow for new and unconventional organization design that will help drive the business strategy?
- Does the model have a sponsor or champion who will help communicate it appropriately?
- Does the model allow for transformational design as well as transactional design? (Transformational means a design developed in response to environmental forces either internal or external to the organization – for example, creation or closure of a business unit or a merger – that affects the mission, strategy and culture. Transactional means changes related to the business or work-unit structures, systems, processes, and so on that might be needed to carry out the mission and strategy but do not change them.)

Stanford (2007, p.65) also notes that: “even within [a single] organization there may be no need for a single structural form across the whole organization.” She cites the example of an internal audit department perhaps requiring a different structure from a research and development department which may also demand a different structure than another department. However, utilizing different design methodologies within different departments could prove confusing and it might be useful to have an underlying core procedural template to ensure a common analysis process and facilitate enterprise-wide organizational troubleshooting. The contemplated Recursive Organizational Dynamics model will later address how an organization might provide such a consistent platform.

2.1.1 Integration with ROD

Although the contemplated ROD model is to be designed as implementation-neutral, its application incorporates many of the steps, concepts and definitions identified by Stanford (2007, p.308-312):

Mapping Techniques: In organization design work, mapping means assessing the attributes and relationships between organizational elements to get a sense of the organizational landscape. The aim is to find out what the focus of the various elements is, how they are ordered in relation to one another, what the areas of similarity and difference are, and how they are oriented with each other.

Organization Design: The sequence of work that results in an alignment of vision/mission, values/operating principles, strategies, objectives, systems, structure, people, processes, culture and performance measures. The outcome of intentional activities that align all the components of an organization in a way that keeps it adaptable in its operating context.

Self-Organizing Networks: Associated with various scientific fields including physics, artificial intelligence and chemistry, but now used more loosely to describe the natural (i.e, unmanaged) emergence of connected people into a recognized and coherent community, usually around a project, or topic of interest.

Structures: The arrangements of people in an organization that appear, in some form of hierarchy, on an organization chart (Stanford, 2007, p.308-312).

2.1.2 Importance of Focusing on Strategy

Previously, we included several major networking categories that Kates and Galbraith considered relevant to organization design. But firstly, they underline the importance of strategy as a company's formula for success. Strategy lays forth the direction, goals, vision and mission of the organization and derives from the leadership's understanding of the internal competencies and external factors impacting the business, such as competitors, suppliers, customers, and emerging technologies. They stress that the

“organization’s strategy is the cornerstone of the organization design process”, (Kates, 2007, p.5). It is believed that it is not feasible to make rational design choices or make core process determinations without clear knowledge of enterprise goals and strategy. Senge (1999) also feels that an organic design still requires strategic leadership and vision from the top, and states that:

Ultimately, executive leaders are vital for influencing the overall environment within which all innovation and learning occurs. They are designers, teachers, and stewards. They have unique responsibilities for the infrastructures of governance, measurement, and strategy. Good design will not create commitment and energy, but poor design will surely thwart them.

One of the defining features of the contemplated ROD methodology is that it forces a deep introspection into the values, processes and strategy of the target company. This underscores the research contention that senior management involvement is advised when a ROD-analysis is used for structural design. Kates and Galbraith (2007, p.8) concur and go on to emphasize the involvement of senior leadership in providing the rationale for a design:

The identification of organizational capabilities is carried out by the leader or leadership team that has ultimate responsibility for design decisions. This is not an activity that can be delegated, as it requires the broad strategic perspective of the leadership level. These organization capabilities become the criteria against which all subsequent design decisions are judged, so they must be agreed on at the most senior level of the organization,

When considering the strategic deployment of human assets within the organization, it is complicated by the possibility for ostensibly the same position in two separate

companies to really be quite dissimilar in the way they present in the organization and also the status they hold, based upon organizational culture differences, company goals, and the basic nature or purpose of the business. Clearly, based upon the previous discussion on the supremacy of relationship networks, designing for positions based upon a skills inventory alone is insufficient. As an example, although he may have pretty much the same technical skills and abilities, from a strategic point of view, a service manager from a branch of a national appliance retail chain holds a very different stature than his counterpart in a busy car dealership. The contemplated ROD model considers an organizational role in terms of relationships, networks and strategic relevance, rather than the specific details of job skill content.

Whether a more traditional team structure is adequate, or whether the demands of a global and diversified business necessitate a matrix or other more complex organic approach, Kates and Galbraith (2007, p.96) note that “the use of lateral organizing mechanisms is a cumulative process” and “as more complicated forms are added, simpler forms are not abandoned.” They point out that even if specialist formal teams have been created for specific tasks or purposes, there is still a fundamental need for strong informal interpersonal networks. In order to adequately manage growing organizational complexity without losing control of coordination, it is important not to push design beyond the organization’s capacity to accommodate it. Kates and Galbraith (2007, p.96) echo Capra’s sentiments when they sagely warn that “internal conflicts will

consume an organization when it tries to execute a coordination approach that exceeds its current capability.”

Nonetheless, whatever the level of organizational complexity, the need for an in-depth understanding of the organization’s characterizing processes, which is the type of analysis offered by the contemplated ROD methodology, is fundamental to designing a structure that facilitates communication and conflict resolution.

2.1.3 ROD Model Classification

Recursive Organizational Dynamics could perhaps be accurately classified as an organic model, even if it is applied to a traditional hierarchical environment. In describing the organic model’s characteristics, Gibson et al. (2006, p.409)

specify:

An organizational design that provides individuals with this sense of personal worth and motivation and that facilitates satisfaction, flexibility, and development would have the following characteristics:

1. It’s relatively simple because of its de-emphasis of specialization and its emphasis on increasing job range.
2. It’s relatively decentralized because of its emphasis on delegation of authority and increasing job depth.
3. It’s relatively informal because of its emphasis on product and customer as bases for departments.

Gibson et al offer Rensis Likert as an early leading articulator of organic models.

They note that Likert’s research led him to believe that organic and mechanistic

organizations differ along a number of differentiating structural dimensions, which they tabulate as: Leadership, Motivation, Communication, Interaction, Decision, Goal Setting, Control, and Performance Goals (Gibson et al, 2006, p.410). The contemplated ROD model and method of organizational analysis still works for an older command-and-control culture in that it describes and emphasizes intrinsic relationship dynamics between team members, rather than any particular hierarchical management style. However, it is perhaps more powerfully applied in an organic setting in that it is based upon principles derived from nature. Moreover, Recursive Organizational Dynamics is intended to augment and illuminate a traditional design approach, not necessarily replace it. Reiterating the idea that no one design approach is inherently better than another, Gibson et al. expand upon the contingency principle by saying that it emphasizes the importance of fitting a design to the demands of a situation, which include technology, environmental uncertainty, and management choices. They don't perceive either the organic or mechanistic approach as an inherently more effective organization design. The contingency point of view is an evolution of the ideas of all earlier writers and can be summed up by the question:

Under what circumstances and in what situations is either the mechanistic or the organic design relatively more effective? The answer requires the manager to specify the contingencies in a situation that influence a particular design's relative effectiveness. Obviously, the contingency approach is quite complicated because of the necessity to consider many contingencies, technology being one of the more important ones (Gibson, 2006, p.410).

2.1.4 Impact of Technology

In terms of conventional design, the impact of technology on work organization is clearly enormous. Gibson et al. (2006, p.411) go on to remark that:

The effects of technology on organization structure can be readily understood at an abstract level of analysis. Although various definitions of technology exist, it's generally understood as "the actions that an individual performs upon an object with or without the aid of tools or mechanical devices, in order to make some change in that object." Thus, organization structures reflect technology in the ways that jobs are designed (the division of labor) and grouped (departmentalization). In this sense, the current state of knowledge regarding the appropriate actions to change an object acts as a constraint on management.

In recent years, the state of technological knowledge has increased exponentially as computers and robots have entered the workplace. One effect of this new knowledge has been to increase managers' interest in the relationship between organization structure and technology.

The contemplated ROD model is completely independent of any technology impacts. It is technology-agnostic. The domain of Recursive Organizational Dynamics is that of the intrinsic relational tendencies between process nodes and has nothing to do with the technology interface between individuals or entire departments.

2.1.5 Interpersonal Communication

The feature of the contemplated ROD model that has perhaps the most direct application to the organizational setting is interpersonal communications. Gibson and his associates (2006) define interpersonal communication as "communications that flow between individuals in face-to-face and group situations" and go on to say that "such

flows... can vary from direct orders to casual expressions.” They also point out that interpersonal communication has always been the primary tool for managers to interact with their staff and they estimate that three quarters of a manager’s communications are face-to-face. Even harder to align are the perceptions shared with remote employees via email and other electronic means. A major technological focus this century has been on building better collaboration tools to assist in sharing information between team members that are separated by extended distance and/or time zones. They see that problems arise because of information distortion between sender and receiver on account of perceptual differences between them and point out that:

We know that each manager perceives the world according to his background, experiences, personality, frame of reference, and attitude. Managers relate to and learn from the environment (including the people in that environment) primarily through information received and transmitted (Gibson et al, 2006, p.439) .

Of course, the same holds true for peer-to-peer communication also. The contemplated ROD model integrates all communication pathways, lateral and vertical, inter- and intra-group. Gibson et al. state that empathy is the key to improving communication within an organization. The contemplated ROD model adds the observation that empathy is vastly improved with knowledge of what is going on in terms of the intrinsic relational dynamics of the group, and once again applies as much to peers as it does to managers.

Gibson and his co-authors recognize that empathy is the ability to put oneself in the other person's role and see and feel the world from his or her angle, and can reduce many of the barriers to effective communication. Instead of talking at the person, it means pitching one's communication in such a way that the receiver is able to hear it. One must anticipate how the message is likely to be received and tune the message accordingly. It stands to reason that a model that lays out the intrinsic propensities of each member of a workgroup to be able to productively project and receive communications from every other member would be a useful springboard. Of course individual personalities are the biggest factor, but each set of relationships coded for in the contemplated ROD analysis is believed to have innate energetic strengths and challenges that comprise the essential fabric of the interaction. The current iteration of the contemplated ROD model, however, does not specifically address communication from above, so in this regard we must heed the Gibson group's warning that "too often, managers perceive themselves to be much better communicators than their subordinates perceive them. Managers must spend more effort understanding and appreciating the process of decoding." They explain that decoding the message means how the communication is received after it is filtered through the perceptive makeup of the recipient. How we perceive things depends to a great extent upon our previous and unique life experiences. The greater the gap between the experiences and background of sender and listener, the more important it becomes to find a common ground of understanding and shared experience (Gibson, 2006, p.448). People need direction and a clear communication channel with their managers. According to Swanson and Oates

(Swanson, 1989), “Only an inter-play of ideas can produce the best decisions and the deepest commitment. Only two-way communication can bring into play all the creative intelligence available in the whole group.”

Thus, whatever modifiers in terms of technology, management style, geographical location, or business purpose, the locus of organizational design revolves around the effective assemblage of functional human relationships. The emphasis is on facilitating communication with minimal conflict, and providing a substrate for discharging the various processes that constitute the mandate for organization. People are not reliable machines but rather they are complex goal-seeking transformers of energy. The renowned originator of the concept of learning organizations, Arie De Geus (1997, p.86) observes that “a living entity, such as a human being, is not merely a passive object, buffeted by outside forces. As people, we make choices. Our behavior cannot be explained solely by cause-and-effect relationships.”

Peter Russell (1982) heralded this tipping point where complexity, technology and creative diversity converge in a living organization:

The growing complexity ... within society reveals three important areas of growth in terms of evolution: a diversity of human beings... ; an elaborate organizational structure, parallel to that observed in all other living systems; and a communication and information processing capability approaching that of the human brain. Thus society would appear to be completing the prerequisites for the emergence of a new evolutionary level.

2.2 The Living Organization

Over recent decades there has been a growing realization that the assemblage of people, personalities and aspirations comprising the modern organization forms a distinct entity that in itself more resembles a living organism than a mechanical collection of discrete cybernetic units. De Geus observes that “assets are just dead objects.” It is the people that make an organization, and people are more than mere assets. They are part of a living web of relationship. He goes on to explain that “[assets] have nothing to do with the innate spirit that moves and propels a company. Nor is a company just a bundle of individuals, or a combination of assets and individuals.” He notes that companies can survive the loss of both assets and individuals and yet still keep their essential nature intact (De Geus, 1997, p.78). While discussing the concept of organizational learning he points out that every company behaves as a living being. Since this is an unusual concept with regard to an institution, he asks whether corporations, with their abstract, legally created bodies, are born, die, reproduce, and take in nutrients and give off waste as biological beings do (De Geus, 1997, p.78).

De Geus refers to a unit of that living web as a **persona**, and goes on to describe the key characteristics of a persona, whether an individual or an organization as a whole:

The persona is goal-oriented.... It wants to live as long as possible and to realize the development of its potential from its talents and its aptitudes.
It is conscious of itself. A persona can perceive itself as “I,” although it is composed of parts and elements, which are personae in their own right. In

its turn, it can be a part of a larger entity, as the soldier is part of a platoon, the platoon is part of a company, the company part of an army, and the army part of a nation's armed forces...

It is open to the outside world. Elements from the outside—such as food, bacteria, dust, light, and sound vibrations—constantly enter the human system. But human individuals and their ideas also constantly enter higher-order personae such as a company or a corporation. At the same time, a persona is in constant relationship with the outside world, in the sense that every experience represents one more exchange in a lifelong dialogue with the forces of the world around it.

It is alive, but it has a finite lifespan. One day it is born, and one day it will pass away (De Geus, 1997, p.85).

He goes on to explain some insights into the advantages of the unpredictability of working with living beings as opposed to mechanical money-making robots. As a senior manager he knew that his people would not always be rational and consistent in their willingness to follow rules. Therefore, the fact they were living creatures itself made them intrinsically unpredictable. However, he soon realized that “although this unpredictability made the risks of business greater, it also meant [he] could tap potential rewards that would otherwise be closed to [him].” It meant that under suitable motivation and encouragement, great leaps of invention and productivity were possible from a group of living beings that could not even be contemplated in a mechanistic framework (De Geus, 1997, p. 86).

2.2.1 Recursion and Self-Similarity

Another point that De Geus mentions that has direct relevance to the contemplated ROD model is that the nature of living organisms (biological or organizational) is that

one finds the same patterns and tendencies of response fractally reflected at every level. Living systems function *recursively*. They are self-similar at every level of hierarchical consolidation.

These living entities nest within each other, like Russian dolls. From the outside, one sees a large unit: Royal Dutch/Shell or the Catholic church (to give two examples). The newspapers speak of “Shell’s activities in the North Sea” or the policies of *the* Catholic church. And this point of view is valid; there is a Royal Dutch/Shell persona, and there is a persona for the Catholic church. But that point of view is incomplete. For, seen from within, the order of the Jesuits is a living system on its own inside the Catholic church. Shell Brazil is a living system inside the Shell Group. Both the Jesuits and Shell Brazil are driven by self-preservation and self-development, as much as the higher order systems of which they are a subordinated part.

Further down the ladder within each of these entities, one sees a variety of individual people, each with individual goals, striving toward survival and self-development. The individual people are often symbiotic, but equally often they end up clashing with each other. Each has different characteristics and potential (De Geus, 1997, p. 88).

That sentiment is echoed by Barlow and Stone (2011) when they refer to nested multiple levels of scale in nature:

Throughout nature we find multileveled structures of systems nested within systems. Each of these has its own integrity, while at the same time being part of a larger whole. ... In social systems such as schools, classes are nested within schools, which are parts of districts, which exist within local, state, and national political jurisdictions.

Capra (2010) points out living systems, in the context of social organizations, are “self-generating networks of communications.” He elaborates by noting that our organizations

will only constitute living systems if they are organized as networks of nested smaller networks. He justifies this position by further observing that:

Most large corporations today exist as decentralized networks of smaller units. In addition, they are connected to networks of small and medium businesses that serve as their subcontractors and suppliers, and units belonging to different corporations also enter into strategic alliances and engage in joint ventures. The various parts of those corporate networks continually recombine and interlink, cooperating and competing with one another at the same time.

One of the unique features of the contemplated Recursive Organizational Dynamics model is that it purports to provide a scientific rationale for this recursive behavior based upon sub-quantum-level processes, and further states that those behaviors can be grouped together, classified, categorized, and to a large extent predicted. As such, the contemplated ROD model offers a device to measure and understand some of the deepest mysteries of life. Richard Pascale and his collaborators state that “understanding the mysteries of life will alter how we think about organizations, management, and social change. “ They observe that “businesses... can learn a great deal from nature,” and further assert that “cornerstone principles of the life sciences have been translated into practice and have considerably improved the odds of success in achieving discontinuous change”, (Pascale, 2000, p.3).

Norman Wolfe believes that “we are patterns of energy in relationship, flowing and interacting with other patterns of energy, creating and evolving. This is how we create our physical world experiences and the results we experience”, (Wolfe, 2011, p.40). In

his arguments for organizations as living beings on a higher level of complexity, he states that “everywhere we look life evolves from simple forms into more complex forms.” He then asserts that evolution’s predilection for ever-bigger communities and complexity is simply a reflection of the biological imperative to survive. He says that when cells band together they increase their chances of survival exponentially because “the more awareness an organism has of its environment the better its chances for survival.” Of course, nature evolved specialized functions for different constituents since an amorphous mass has little advantage over its individual components and in order to survive at such high densities, the cells created structured environments (Wolfe, 2011, p.41). Even simple biological organisms manage the business of interacting within themselves and with the environment with more precision and effectiveness than the ever-changing organizational charts that define life in big corporations, he maintains. Wolfe argues that since we accept human beings to be the most advanced and complex life form on the planet, and because we are comprised of organ systems and tissues, cells, intercellular apparatus and countless symbiotic organisms, and further that the whole community of processes which we call our body is structured in a manner very reminiscent of the organizational charts of a big corporation, then it also seems quite logical to view corporations as highly evolved complex living beings. If we do so, then the individual workers in an organization correspond to the basic cellular building blocks, much like the cells in the human body. He elaborates the analogy:

Individuals of like mind join together with other individuals for a common objective comprising another living organism we call a team. These teams form the fundamental unit of the organization, which in business we refer to as the “functional structure.” The functional departments of sales,

marketing, and engineering are analogous to the various organs of the human body, such as the heart, liver, and lungs (Wolfe, 2011, p.43).

The Recursive Organizational Dynamics concepts were discovered in the realm of data processing. Information reticulation within an organization is very analogous to the way information flows through a living nervous system. If one focuses on processes rather than people or hardware then the information networks within a company correlate to the nervous system, while the flows of work product could be thought of as the equivalent of the biological vascular system. And yet the physical architecture is not the defining essence of the organization, but rather just the conduit for an energetic wholeness. Similarly, Wolfe (2011, p.43) observes that “while the human body is a complex web of energy fields flowing and interacting with each other, a human being is much more than just its body.” He finds correlates in the subjective aspects of our physiologies also:

We think, feel, have experiences, pose intuitive insights and are self-aware. We are aware of an inner self and the complex web of inner voices that guide us through life, some of which are in opposition to each other. We are also aware of our outer selves and our interactions with others. The same is true for The Living Organization® (Wolfe, 2011, p.43).

Recursion is a recurrent theme throughout all the disciplines under review, and this property is a fundamental defining quality of Recursive Organizational Dynamics. The fact that each emergent level of recursion is self-similar, or fractal, has led many commentators to liken living networks to the iconic Russian dolls (*matryoshka*) that nest one hidden within the other:

Living Organizations® carry within them other living organizations. They in fact demonstrate the fractal property of self-similarity; the rules of energy that apply to one living organization apply to all living organizations. The laws, rules, and methods... apply equally to the results created by an individual, a group, a team, a department, and to an organization (Wolfe, 2011, p.44).

Wolfe goes on to explain how the interacting energies and contributions of the component parts of the organism/organization are what adds value. It is specifically these flows of energy and patterns of interaction that are addressed and optimized within the ROD model. Wolfe explains that “in a complex system there are multiple groups of living entities whose energy not only must be directed but integrated with each other’s energy contribution,” and he points out that “an organization is comprised of individuals contributing their own energy and of individuals working together as teams. These collaborative teams exchange energy with one another to collectively achieve the organization’s goals”, (Wolfe, 2011, p.49). He suggests another way to look at a business process is one that serves to integrate the different sources of energy into a powerful and coordinated force. It is the coherent nature of the stimulated photon emission that makes a laser so powerful in comparison to its disorganized incandescent cousin (Griot, 2005). Thus in order to effectively structure an organization design, we must take cognizance of how energy flows through a living system as opposed to a machine. In his book, Wolfe sees that the “rules of engagement change when we see our organizations as living beings.” Echoing the core premises of the contemplated ROD technology, he states:

Rather than the limited view of life as a machine, we draw from the well of deeper wisdom of how life functions and we can apply the universal understanding of man's body and soul to our previous, inaccurate, model of the "cold, lifeless corporation", (Wolfe, 2011, p.101).

He maintains that "people, process, and customers are, always have been, and always will be, three key domains of focus of every executive and CEO", (Wolfe, 2011, p.104).

These sentiments are echoed in the words of Peter Senge as he relays a comment about the ultimate lifelessness of mechanistic ambition:

Bill O'Brien, the former CEO of Hanover Insurance, used to say that the fundamental problem with most businesses is that they're governed by mediocre ideas. Maximizing the return on invested capital is an example of a mediocre idea. Mediocre ideas don't uplift people. They don't give them something they can tell their children about. They don't create much meaning (Senge, 2004, p.169).

Through another poignant anecdote, he goes on to describe the interconnectedness of the components of a living system, emphasizing the self-similarity, process relationships and perpetual change that form the core of the contemplated ROD theory:

For Goethe, the whole was something dynamic and living that continually comes into being "in concrete manifestations." A part, in turn, was a manifestation of the whole, rather than just a component of it. Neither exists without the other. The whole exists through continually manifesting in the parts, and the parts exist as embodiments of the whole. The inventor Buckminster Fuller was fond of holding up his hand and asking people, "What is this?" Invariably, they would respond, "It's a hand." He would then point out that the cells that made up that hand were continually dying and regenerating themselves. What seems tangible is continually changing: in fact, a hand is completely re-created within a year or so. So when we see a hand—or an entire body or any living system—as a static "thing," we are mistaken. "What you see is not a hand," said

Fuller. "It is a 'pattern integrity', the universe's capability to create hands", (Senge, 2004, p.6).

2.2.2 Practical Technology Missing in Existing Theories

Many modern scholars and practitioners, who have long watched organizations very carefully from an understanding of life systems, believe they have come to an astute assessment of the shortcomings of current business practices. They perceive organizations as displaying every defining characteristic of a living organism. But they seem unable to co-opt any natural practical process to come to the aid of floundering mechanistic management. In the following excerpt, Senge's team are discussing an encounter experience and relating it back to the troubles disturbing many businesses and the world as a whole:

As I watched, I thought of the first principle John had taught us: 'All forms are in constant change, all interconnected, all in a continuous state of manifestation and dissolving into Source...'

"John said the problem we face is 'fundamentally because of lack of relationship, not just with each other but with all of nature. We are out of relationship with all of nature because we've moved into a reductive kind of awareness that is based on alienation and separation. We have to change that relationship to one of co-creation. The fate of the human species is still very much in our hands. Certain things have been set in motion that will be difficult to reverse. But we have two openings that are immensely helpful. First, there is a higher ecological awareness emerging, a coming into personal awareness of our interdependence with other life and our mutual responsibility. And second, there is an earth-based spirituality building at a very rapid pace. Those two factors provide the opening for us to eliminate the need for a physical cleansing of the earth (Senge et al, 2004, p.61 and 66).

The contemplated ROD model is possibly a means to portray the intrinsic connections each member of an organizational department has with the most fundamental organization of nature, and design a structure that takes them into account when staffing the department. Because the contemplated Recursive Organizational Dynamics model is a codification of the underlying mechanics of nature, its application to the field of organization design should be just a small subset of its general usefulness. As such, the contemplated ROD model could be used to design and integrate self-development programs to increase the quality of life and awareness of each of the individuals comprising the group in much the same way that the dynamics of the group as a whole are analyzed. Along these lines, Senge (2004) underscores the importance of self knowledge – in the sense of fostering the lively connection to the underlying group field. This he calls “synchronicity” or “the Field knowing itself.” The belief underlying the contemplated ROD theory is that capturing and harnessing a mechanism for proactively managing synchronicity, which is a specific attribute of the contemplated ROD model, would be most valuable in any corporate setting.

Perhaps the most important aspect of crystallizing intent and prototyping is one that people rarely talk about. When people connect with their deeper source of intention, they often find themselves experiencing amazingly synchronistic events. In his classic *Synchronicity: An Acausal Connecting Principle*, Carl Jung defined synchronicity as “a meaningful coincidence of two or more events, where something other than the probability of chance is involved.” Jung’s definition artfully juxtaposes two seemingly contradictory notions: “coincidence” and “something other than . . . chance.” Synchronicity seems to bind together just such opposites: intentionality and fortuity, action and luck, causality and “acausality.” Intel’s David Marsing told Joseph that “Synchronicity is about being open to what wants to happen.” For him, what Rao called “the broadcasting of

intention” is evident by the way “many people sense and are drawn together around a new possibility that’s unfolding.” And, he added, “It’s usually more than one person who senses it and who wants to help. I rarely find myself in this sort of place alone. You don’t even have to advertise—there’s something about the situation that resonates with people who have a similar intent and a similar set of principles and values. They’re drawn to it, and then magic begins to unfold.” While synchronicity can’t be controlled, it also isn’t random (Senge, 2004, p.159).

2.2.3 Self-Organizing Systems and Spontaneous Emergence of Order

Margaret Wheatley, a pioneer in the living systems movement, seeks to find parallels in modern science to explicate the business of managing an organization. She notes that if (hypothetically speaking) people are machines, then seeking to control them makes sense, but if we in fact “live with the same forces intrinsic to all other life, then seeking to impose control through rigid structures is suicide.” In appealing for a complete revision of our business practices, she strikes a chord within many:

If we believe that there is no order to human activity except that imposed by the leader, that there is no self-regulation except that dictated by policies, if we believe that responsible leaders must have their hands into everything, controlling every decision, person, and moment, then we cannot hope for anything except what we already have—a treadmill of frantic efforts that end up destroying our individual and collective vitality (Wheatley, 2006, p.25).

She asks what might happen if we dared to stop looking for control and earnestly began searching instead for order. “Order we will find in places we never thought to look

before—all around us in nature’s living, dynamic systems. In fact, once we begin to look into nature with new eyes, the teachers are everywhere”, (Wheatley, 2006, p.25).

Capra (2010) reminds us that it is frequently heard that people resist organizational change. This could be mistaking the efficient cause for the result. He goes on to explain that:

In reality, people do not resist change; they resist having change *imposed on them*. Being alive, individuals and their communities are both stable and subject to change and development, but their lateral change processes are very different from the organizational changes designed by “reengineering” experts and mandated from the top.

Wheatley (2006) elaborates on her petition for a search for order rather than control. Here she introduces the idea of order emerging spontaneously from primordial chaos, and claims this is the natural state of life. She maintains that in our pursuit of order in organizations, we have failed to understand where to find it. A false sense of order and permanence is provided by the corporate edifices we take so much time, resources, creativity, and attention to build: “bright mirror-glass buildings, dazzling charts, or plans begun on paper napkins.” Nothing displays greater tenacity, greater determination to endure, or indeed is more successful in the process, than life itself. But its gift to posterity is not in fixity or monolithic symbols of defiance to nature. Life is flexible, responsive, and progresses through the skillful embrace of change. Wheatley realizes that it is “hard to welcome disorder as a full partner in the search for order when we have expended so much effort to bar it from the gates.” But she also observes that the

wonderfully diverse and creative natural world around us makes a perfect model, and that all of us, even in rigid mechanistic organizations, have “experienced self-organization, times when we recreate ourselves, not according to some idealized plan, but because the environment demands it”, (Wheatley, 2006, p.24). We spontaneously let go of the old form and let our innate living intelligence figure out how to reorganize at a higher level of order.

2.2.4 Mapping Relationships and Network Views

The purview of the contemplated ROD model is the mapping of relationships. Focusing once again on the recurring theme of relationship over entity, Wheatley writes:

This world of relationships is rich and complex. Gregory Bateson (1980) speaks of “the pattern that connects” and urges that we stop teaching facts—the “things” of knowledge—and focus, instead, on relationships as the basis for all definitions. With relationships, we give up predictability and open up to potentials. Several years ago, I read that elementary particles were “bundles of potentiality” I began to think of all of us this way, for surely we are as undefinable, unanalyzable, and bundled with potential as anything in the universe. None of us exists independent of our relationships with others. Different settings and people evoke some qualities from us and leave others dormant. In each of these relationships, we are different, new in some way.

If nothing exists independent of its relationship with others, we can move away from our need to think in terms of separate, polar opposites. For years I had struggled conceptually with a question I thought important: In organizations, which is the more important influence on behavior—the system or the individual? The quantum world answered that question for me with a resounding “Both.” There are no either/ors (Wheatley, 2006, p.35).

Since the contemplated Recursive Organizational Dynamics model characterizes itself as being based chiefly in events at the quantum mechanical level, it is appropriate at this junction to see what further influence the new science of theoretical physics is having on the world of organizational behavior. In her typically poetic manner, Wheatley says that “to live in a quantum world, to weave here and there with ease and grace, we need to change what we do.” Task descriptions fill reports but do not facilitate the process required to satisfy them. Echoing Gibson above, she exhorts that “all of us need to become better at listening, conversing, respecting one another’s uniqueness, because these are essential for strong relationships.” In a sentiment that will be formalized later in the discussion of Spiral Dynamics, she notes that the era of the rugged individual has been replaced by the era of the team player. She finds that:

The quantum world has demolished the concept that we are unconnected individuals. More and more relationships are in store for us, out there in the vast web of life.

Even organizational power is purely relational. One evening, I had a long exploratory talk with a wise friend who told me that “power in organizations is the capacity generated by relationships.” It is an energy that comes into existence through relationships (Wheatley, 2006, p.41).

In her studies of other disciplines, Wheatley became fascinated by the “S-matrices” of particle physicists. These diagrams are the reaction channel maps of high-energy particle interactions. In these tools usually the sole domain of theoretical physicists, she sees a better way to structure organization design. Her insights are the most exciting realization from the point of view of Recursive Organizational Dynamics because they stand almost as an introduction to the contemplated ROD model.

Traditional organization charts are filled with lines connecting well-bounded boxes. It would be a breakthrough to think of the lines as reaction channels, places where energy meets up with other energy to create new possibilities. But S-matrices stretch my thinking even more because they demand that I stop thinking of roles or people as fixed entities. They lead me into the world of “no-things,” where who you are depends on who you meet (Wheatley, 2006, p.71).

Wheatley (2006, p.72) goes on to explain that when she applies this mode of thinking to the roles and relationship depicted by organizational charts, then she realizes that roles have no intrinsic meaning in the absence of an understanding of the network of implied relationships and resources required to discharge an individual's work. She reiterates the important point made several times previously that “it is foolish to think we can define any person solely in terms of isolated tasks and accountabilities.” Of vital import to the contemplated ROD methodology, she says:

We need to be able to conceptualize the pattern of energy flows required for that person to do the job. We need to see any person's role as the place where energies meet to make something happen.

Yet more fascinating, in view of the rotating and recursive *bagua* model adopted by the contemplated ROD theory, is how Wheatley suggests that different aspects, focuses and outcomes can be achieved by taking different network views of the relationship matrix. But she does not elucidate how this might be achieved:

Unlike traditional organizational charts, S-matrix diagrams can also be rotated, thereby altering the reactions among the particle players. No one particle is the basic element or causative agent. Each has the capacity to interact with another and produce different outcomes. Rotating the diagrams changes the roles played by the different energies; what was a force influencing a reaction can, by turning the diagram, become a

reaction channel influenced by other forces. Hierarchy and defined power are not what is important; what's critical is the availability of places for the exchange of energy (Wheatley, 2006, p.72).

2.2.5 Relevance of Life Sciences and Systems Theory

Margaret Wheatley beautifully summarizes the new awareness and understanding of living systems as a model for organizational structure by noting that the new spirit of the times is a growing awareness that we “participate in a world of exquisite interconnectedness.” This is the world of systems theory, systems thinking and ecological thinking, as opposed to Newtonian isolation of discrete entities. Wheatley draws our attention back to the principal thrust of this literature review when she says that “organizational theorists and leaders are drawing on insights emerging from ecology, biology and evolutionary theory” in order to equip organizations with the built-in skills of living systems to learn, adapt and change. Our world is turning out to be an exquisitely interconnected web of relationships and many disciplines now speak in terms of networks, the primacy of relationships, and the importance of context. It is easy to see the parallels between the principles as both science and business are beginning to describe their domains using the same terms and descriptions. Wheatley remarks that:

When Levi Strauss' former CEO Robert Haas describes today's world of business, he says that “we are at the center of a seamless web of mutual responsibility and collaboration, a seamless partnership, with interrelationships and mutual commitments.” It is easy to hear a similar sensibility in the voices of scientists (Wheatley, 2006, p.159).

The prime motivating factor for the current interest by business researchers in the sciences of living systems is the “relentless need for organizations to grow and reform at intervals so short that change has become a continuous demand.” Wheatley (2006) says that the business community has adopted terminology from these other biological sciences, like organic organizations, self-organization, and emergent properties. Others, including the contemplated ROD model, have also turned to the field of chaos theory in the hope of explaining the complexity of relationship and the flow of order through modern organizations. In her work relating the venerable Chinese classic, the Yijing (which is intimately related to the contemplated ROD model) to the structure of the DNA molecule, Katya Walter finds the fundamental importance of chaos theory in offering pattern sensing in the quantum foam for predicting likelihoods of outcome at the macroscopic level. She writes that “the I Ching [Yijing] reveals the pattern” but that:

Not the specifics of an event, but its underlying pattern. It works through the dynamics of chaos theory, which can predict a trend without specifying its exact details. Discovering this huge hidden intelligence that rests deep in the weave of nature, even learning to communicate with it, can be disconcerting, frightening . . . until it becomes wonderful (Walter, 1996, p.18).

No matter that so much has evolved in our scientific knowledge and thinking over the past three hundred years or so, the Newtonian mechanics that inspired the Industrial Revolution still lies at the root of much of popular thinking in this Information Age, especially with regard to organizational structure and change. We ought to know better since other disciplines have proven experimentally that Newton cannot adequately explain the realities of complex, extended, and high-speed systems. Wheatley observes

that “in the early years of this century, science was brought deliberately into the nascent field of management theory” and we learnt to “[marry] science with the art and craft of leadership [as] a way to give more credibility to this young and uncertain field”, (Wheatley, 2006, p.159). Now the pace and complexities of the global economy appear to make it imperative that management science get the necessary upgrades to align it with advances in the physical and biological sciences.

2.3 Recent Research into Biological Systems

While the business community has been learning the value of treating organizations like living entities, the scientific community has been extending that biological and neurological knowledge into the realm of quantum physicists. This is relevant to the research because the contemplated Recursive Organizational Dynamics paradigm is intrinsically grounded in what will be called “the Gap.” The Gap is also known as the quantum foam or Zero Point Field, that lively interface between the ground or vacuum state of the unified field and the seething creation that bursts forth from it.

At this juncture it might be valuable to review the background of Ilya Prigogine’s dissipative structures because it will familiarize the reader with the concept of phase transitions and an understanding of how living systems maintain themselves at a thermodynamic distance from their environments. Again we turn to the work of Margaret Wheatley as she notes that:

Equilibrium is neither the goal nor the fate of living systems, simply because as open systems they partner with their environment. These systems are called “open” because they have the ability to continuously import energy from the environment and to export entropy. They don’t sit quietly by as their energy dissipates. They don’t seek equilibrium. Quite the opposite. To stay viable, open systems maintain a state of non-equilibrium, keeping themselves *off balance* so that the system can change and grow. They participate in an open exchange with their world, using what is there for their own growth. Every organism in nature, including us, behaves in this way (Wheatley, 2006, p.78).

She notes that all living systems are dissipative structures and that it was Prigogine who demonstrated that disequilibrium is a necessary condition for them to grow and evolve. Dissipative structures give up their existing form in order to reorganize themselves at a more complex level of functioning. Faced with increasing disturbance to their current balance from changing environmental factors, living systems have the innate ability to recreate themselves in order to deal with new information or influences. “For this reason, they are called *self-organizing systems*. They are adaptive and resilient rather than rigid and stable”, (Wheatley, 2006, p.80).

Capra (2010) reaffirms the primary difference between mechanical and living systems by saying that, “a machine can be controlled; a living system can only be disturbed” and that, “living systems always choose what to notice and how to respond.” Vice-President Al Gore (2013) finds “self-organization, as a law of nature and as a process of change, [to be] truly astonishing.” He writes about dissipative structures as the basis of living systems in the following terms:

An open system—that is, a system that imports flows of energy from outside the system into it, through it, and out again—not only breaks down, but as the flow of energy continues, the system then *reorganizes itself* at a higher level of complexity... What it means is that complex new forms can *emerge* spontaneously through *self-organization* (Gore, 2013, p.xvii).

2.3.1 Self-Reference and Information Theory

Another important and defining feature of self-organizing systems is that of self-reference. “When the environment shifts and the system notices that it needs to change, it always changes in such a way that it remains consistent with itself”, (Wheatley, 2006, p.85). This self-referral quality is an integral feature of the contemplated ROD model since it is an integral feature of action at the level of the unified field, according to both modern physics and the ancient oriental epistemological philosophies. Katya Walter (1996) notices that fractal expression, self-reference, is everywhere in nature, and remarks that the ancient Chinese called this the “nesting boxes of the Tao.” She notes that chaos theory has allowed us to perceive pattern within apparent randomness. It enables us to discover that there is actually an elegant simplicity in the complex flux of relationship. The contemplated Recursive Organizational Dynamics model is intended specifically to be a device to map that chaotic behavior in complex systems. Walter lays out the tell-tale signature of patterned chaos:

Order in the midst of apparent disorder; cycling that repeats with continual slight variation; scaling that fits one level into another like nesting boxes; and universal applicability (Walter, 1996, p.78).

It is these characteristics that allow the contemplated ROD model to be applied to almost any environment and at any time or size scale.

Living systems have the inborn capability to reflect, on the macroscopic level of their metabolism, the sub-microscopic processes of creation in the Gap. Moreover, this is because the process is recursive: the core microscopic processes of the Gap are fractally mirrored at every higher level of differentiation and complexity. Life appears to have the ability to proactively co-opt these intrinsic mechanisms in a self-led purposeful manner. Wheatley explains:

...A system focused on maintaining itself, producing itself... will choose a path into the future that it believes is congruent with who it has been. Change is never random; the system will not take off in bizarre new directions. Paradoxically it is the system's need to maintain itself that may lead it to become something new and different. A living system changes in order to preserve itself (Wheatley, 2006, p.85).

Perhaps the most exciting and important research in the field of biological sciences at this time is the work being conducted on biophotonic communication. Although deeply connected with the extended implications of the contemplated ROD model, the specifics of this fascinating frontier are beyond the current scope. It is noted here, however, because it deals with the non-local information networks that life must have in order to manage its component systems. It can be argued that information is the root cause and goal of all we see around us. Wheatley offers us this:

Life uses information to organize matter into form, resulting in all the physical structures that we see. The role of information is revealed in the word itself: *in-formation*. We haven't noticed information as integral to the

process of formation because all around us are physical forms that we can see and touch (Wheatley, 2006, p.96) .

She says that the outward form beguiles us and that we then confuse the physical manifestation with the processes that gave birth to it. In the forthcoming analysis of the oriental philosophical literature it will be noted that Vedic scholars refer to this illusion as the mistake of the intellect (*pragya-aparadh*). The real system, Wheatley deduces, is the underlying life system that endures and evolves, which is purely process. Everything is just the flow and expression of information. The outward presenting form for the time being is just a reflection of process. In a way that echoes what might be expected of an Eastern mystic, she realizes that:

When a new structure materializes, we know that the system has informed itself differently. In a constantly evolving, dynamic universe, information is a fundamental yet invisible player, one we can't see until it takes physical form. Something we cannot see, touch, or get our hands on is out there, influencing life. Information seems to be managing us. For a system to remain alive, for the universe to keep growing, information must be continually generated (Wheatley, 2006, p.96) .

With deliberate contrast to common business organizational structure and practice, she notes that order is never imposed from the top down or from the outside in for living systems. Order spontaneously emerges as the various elements of the self-organizing system cooperate to build new capacities (Wheatley, 2006, p.111).

It is hard to imagine an organization more complex, or an institution more intimately connected to the business of our lives as an iconic symbol of our civilization than

government. In his book “Manual for a Perfect Government,” renowned quantum physicist, John Hagelin, finds it striking that “the deeper structure of intelligence reflected in the human mind and consciousness precisely mirrors the deeper, quantum-mechanical levels of intelligence seen in nature”, (Hagelin, 1998, p.44). Einstein once said that, “the eternal mystery of the universe is its comprehensibility [by the mind]” (Biedeback, 2011). Hagelin (1998, p.45) asserts that:

To fully appreciate the profound, structural correspondence between human intelligence and nature’s intelligence, and the feasibility of gaining precise and practical knowledge of natural law through the inner exploration of consciousness, some understanding of the latest discoveries of quantum mechanics and the most up-to-date knowledge of the mind is needed.

2.4 Perspective of Theoretical Physics

The synthesis of quantum mechanics with Einstein’s special relativity resulted in the relativistic quantum theory known as Quantum Field Theory, which Hagelin considers quickly established itself as the most successful theoretical framework in the history of science. Armed with this framework, scientists have relentlessly pursued nature’s deepest and most profound secrets (Hagelin, 1998, p.45).

Not only is the world around us in radical transformation, but also our understanding of the fundamental nature of that world - and of the universe itself - is shifting. This is important, for our world is an integral part of the universe; its laws and processes apply on Earth the same as everywhere else. A sound orientation in our world calls for a sound understanding of the universe (Laszlo, 2008, p.89).

In the later sections on Eastern philosophy, it will be seen that the web of particles and relationships at the subatomic region is just a reflection of a purely abstract version in consciousness at the level of the field itself. New research and experiments provide tantalizing glimpses into the true field nature of that progenitor of the primal chaos below the Planck scale and have contributed to the growing notion among scientists that the quantum field is much more than a mathematical construct. Laszlo (2008, p.91) reminds us that within the technical framework of quantum field theory the vacuum state is not a part of physical reality. As a realm beyond the reach of pure objectivity, it is “a theoretical artifact, a requirement of the mathematics of the field theory.” Importantly, he clarifies that “the insight that the vacuum is a real, and indeed fundamental, medium does not derive from the mathematics of quantum field theory but from significant, if necessarily indirect, evidence accumulated independently in a vast variety of observations.” Laszlo explains that there are two lines of evidence for the vacuum state of the quantum field being an actual reality. Firstly, modern theoretical physics and cosmology are coming to the conclusion that the Planck scale, the level of the Gap, and even space-time, is not the ultimate granularity of the universe. He asserts that “spacetime and the quanta that populate it” have themselves emerged from an even more fundamental field. The second important stream of evidence derives from the observation that quanta and therefore the entire manifest universe comprised of them, including living organisms and the human mind, are intrinsically non-locally connected. Laszlo believes this “raises the possibility that the fundamental level of the universe is not merely at the origin of the things that populate space and time but is also the

medium that interconnects them.” Therefore, the term quantum “vacuum” is at best misleading (Laszlo, 2008, p91).

Thought historian, Tsung-I Dow (1989), notes that recent discoveries in subatomic particles and in DNA-related molecular biology have “revealed a world of potential possibilities rather than a world of observed things and facts, and can best be described symbolically by mathematical signs.” He thinks that quantum theory has provided us a logical technique that is, to use Aage Petersen’s words, “well suited for analyzing epistemological problems because of the profound kinship between quantum theory and philosophy.” As a tie-in to the forthcoming review of Taoist texts, he concludes that “the advancement of the quantum theory and the new [fractal] geometry as well as other scientific discoveries in recent years have lent further support to the symbolic expression of the relationship of Yin-Yang”, (Dow T., 1989). He notes wryly that the father of quantum theory, Niels Bohr’s adoption of the *taiji* diagram (the graphic basis of the contemplated ROD model) as his family coat of arms after his trip to China in 1937 was unlikely to have been coincidental.

2.5 Intention Research

Al Gore emphasizes that we selectively choose the things to which we pay attention. Not simply innocent curiosity, but preference, habit, and our selection of the observational tools, technologies and systems all affect our choices. The tools we use can have their own selective attention distortions (Gore, 2013, p.xxvii). It will be seen

that human intention (or applied attention) is perhaps the most powerful untapped force at our disposal. Therefore, it behooves us to understand how it works and hone our skills in its application. Gore reminds us that anthropologists have presented evidence dating back almost 50,000 years of humans trying to divine the future, and that “the implicit assumption in such searches is that all reality is of one fabric encompassing past, present, and future.” Furthermore, that fabric is woven in a holographic design where the unfolding pattern of the whole can be construed by reference to a small subset. Holographic images are characterized by “self-sameness” of the patterns they manifest at every level of resolution (Gore, 2013, p.xix). We can possibly use this inherent feature of nature as a means of purposefully projecting our intention with a view to obtaining specific real-world outcomes.

There are two aspects to the contemplated ROD model:

- I. A descriptive and proscriptive analysis of the innate relationship dynamics within any organizational group; and
- II. Prescriptive techniques for proactively facilitating a more effective transaction, and conversely minimizing conflict.

Recently, a great deal of research has centered round the measurement of the effects of human intention, and in developing explanations for the effects in terms of quantum mechanical processes. Until quite recently, however, the whole idea of consciousness

being a valid participant in the equation was considered taboo and unworthy of real scientific scrutiny. Radin (2006) complains that:

The majority who believe that psi is real are forced to confront the problem of “forbidden knowledge,” taboo topics that restrict the conduct, funding, and publication of certain ideas.

It will be seen later how the oriental philosopher-scientists overcame the issue because, of course, the essential problem is that one cannot directly investigate subjectivity with objectivity (but not vice versa). By removing consciousness as a *prima facie* means of gaining knowledge, the best one can do is to infer information from the trails left behind in the objective world. Alan Wallace (2000, p.151) laments that:

The disaster of this taboo of subjectivity stems from the strategy of describing the world as completely objective, leaving out subjectivity altogether, which has been a central premise of scientific materialism in general and modern cognitive science in particular.

He sees this strategy making it impossible to describe consciousness because of its essential subjectivity. Thus, he continues:

For all its purported rejection of the Cartesian framework, cognitive science has maintained the absolute dichotomy of conscious, subjective mental processes—which are not regarded as a proper subject of scientific investigation—and objective neurological and behavioral processes that are regarded as the genuine subject matter of science (Wallace, 2000, p.151).

He reports that as a result, in recent decades cognitive scientists have made systematic efforts to dissociate consciousness from intentionality. Wallace therefore concludes that by the “objective” treatment of intentionality, these scientists consider the subjective

features of consciousness to be irrelevant to intentionality. He writes that “the biggest factor in the barrenness and sterility that is found in psychology (as the philosophy of mind) and cognitive science is the neglect of consciousness”, (Wallace, 2000, p.151).

As an introduction to the great efforts by modern researchers to change this posture toward consciousness, it might be accurate to say that the contemplated Recursive Organizational Dynamics model is primarily a technology of consciousness. Proactive outcome engineering in the contemplated ROD model is based upon the hypothesis that at the quantum mechanical level, statistical summation results in a classical average of wave function collapse (e.g. see Benet,2002), but that the application of *intention* or even simply *attention* of consciousness, changes fluctuations in a specific direction and effects a statistically significant move away from randomness. Since the basic components of the contemplated ROD model are essentially digital, ROD-suggested techniques target specific configurations of quanta in the organizational relationship context to effect a desired response. Because the aggregate configurations of energy are either on or off, the requirement is no more complicated than causing a state change. The mere act of observation results in the necessary state flip in accordance with the Heisenberg uncertainty principle. In her paper on the Action of Consciousness and the Uncertainty Principle, Jean Burns (2012) says:

According to quantum mechanics, any object is subject to a continuing series of fluctuations in its energy and its spatial and momentum coordinates. These fluctuations occur within the limits of the uncertainty principle and are called quantum fluctuations.

Particularly applicable to the prescriptive aspects of the contemplated ROD techniques for proactively modifying outcomes in a specific desired direction, she explains:

The quantum fluctuations of an object are random... The action of consciousness produces its physical effects through the ordering of randomness in these fluctuations. Let us now assume that consciousness acts on an object by ordering random shifts in its spatial or momentum coordinates that are produced by quantum fluctuations (or equivalently vacuum radiation), such that the direction of the shift is not random, but in a preferred direction... The magnitude of these fluctuations is very small. However... the effects of these shifts can be greatly magnified by interactions with other particles, to the extent that the original direction of travel can be changed to any other direction in one, or a few, collision times. Without the influence of consciousness, the changes in direction are random. But with the influence of consciousness the direction of a traveling molecule can be changed (after interaction) to any preferred direction. So by means of this magnification a fairly substantial effect can be produced (Burns, 2012).

Lynne McTaggard dreams of a few of the seemingly supernormal feats made logically possible by this kind of quantum manipulation by intention:

And if you could somehow turn off gravity, you could change the weight of the rocket or the force required to accelerate it. The possibilities were endless...

If these vacuum fluctuations, considered so meaningless by most quantum physicists, did amount to something that could be harnessed at will, whether for automobile fuel or to move objects just by focusing one's attention on them, then the implications not only for fuel but for every aspect of our lives were enormous. It might be the closest we have to what in *Star Wars* was called The Force (McTaggard, 2008, p.35).

One of the biggest organized approaches to measuring the effects of consciousness, of applied attention, to the physical world was spearheaded out of Princeton University by

the PEAR group (2010). PEAR stands for Princeton Engineering Anomalies Research and was headed up by Robert Jahn, then Professor of Aerospace Science and dean of the Princeton Department of Mechanical and Aerospace Engineering, and Brenda Dunne, a developmental psychologist. Their laboratory became famous for pioneering devices that could pick up changes or shifts in underlying quantum events as a result of group intention or collective emotional expression (Dunne, 2005). PEAR developed devices called Random Event Generators (REGs) that produce true random noise using quantum-level fluctuations. For example, the modern field version used in the research measures electron tunneling noise at the gate of a field effect transistor (FET). Random quantum noise is, by definition, random. Therefore, if one samples fast enough, any statistical deviation away from randomness is considered indication that some outside event or force acted upon the device in such a way as to alter the natural chaotic functioning at the transistor junction. The most famous correlation was the global coherent spike in output that coincided with the events surrounding the death of Princess Diana in 1997. Then in 1998, based upon the PEAR results, Roger Nelson extended the scope of the research by building the Global Consciousness Project (Nelson, 2014). The GCP grew to deploy several thousand REGs at universities across the globe and, through 70 regional computers, connected their outputs to a central database back in Princeton that time synchronizes and coordinates the 200-bit-sum one-second samples from the REGs around the world. The surprising extent and non-local coherence of consciousness effects demonstrated in the PEAR experiments led McTaggart to conclude:

Since every motion of every charged particle of every biological process is mirrored in the Zero Point Field, our coherence extends out in the world. According to the laws of classical physics, particularly the law of entropy, the movement of the inanimate world is always toward chaos and disorder. However, the coherence of consciousness represents the greatest form of order known to nature, and the PEAR studies suggest that this order may help to shape and create order in the world. When we wish for something or intend something, an act which requires a great deal of unity of thought, our own coherence may be, in a sense, infectious. On the most profound level, the PEAR studies also suggest that reality is created by each of us *only by our attention*. At the lowest level of mind and matter, each of us creates the world (McTaggart, 2008, p.122).

She notes that this frontier research into consciousness has called a lot of supposedly scientific certainty into question. Discoveries by consciousness workers all over the world offer “convincing evidence that all matter in the universe exists in a web of connection and constant influence”, (McTaggart, 2007, p.194). McTaggart notes in summary that “all these studies are small, but they carry a huge implication: even your current state of mind carries an intention that has an effect on life around you. The mind continues affecting its surroundings whether or not we are consciously sending an intention. To think is to affect”, (McTaggart, 2007, p.155).

So it seems that if one has the requisite technology, one now has to take Glendower more seriously because things may well come when you call (Shakespeare, 2002):

Glendower: I can call spirits from the vasty deep.

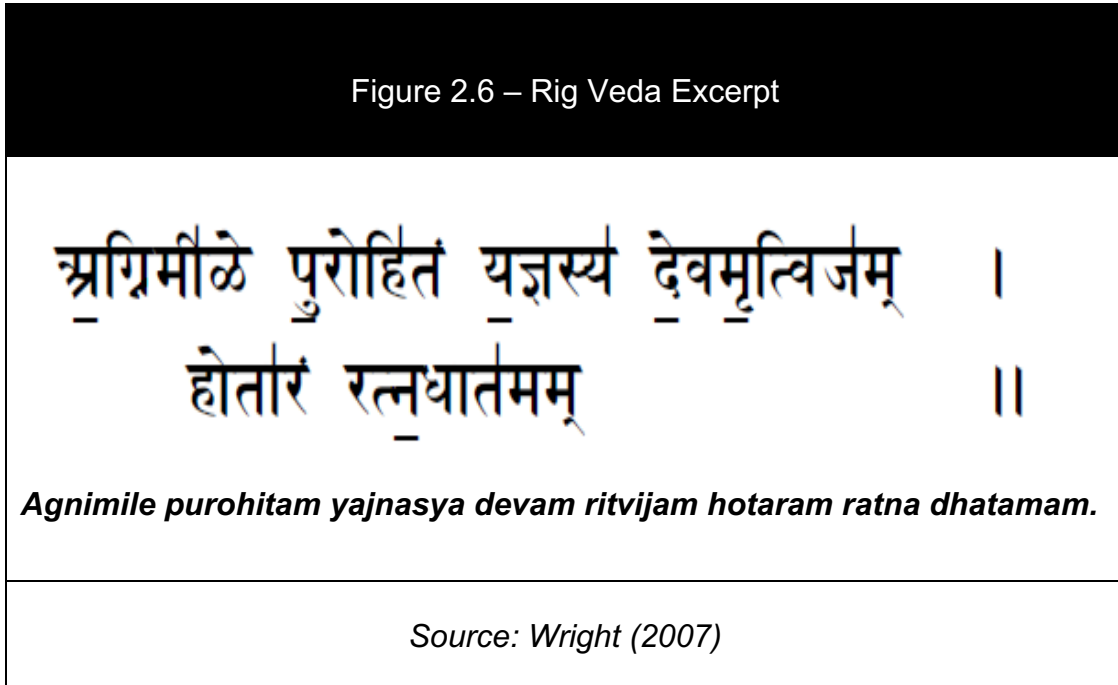
Hotspur: Why, so can I, or so can any man,
But will they come when you do call for them?

2.6 Vedic Perspective

A large proportion of this work owes its genesis to the pioneering discoveries of the late Maharishi Mahesh Yogi. Maharishi is probably best remembered by the public as the bringer of Transcendental Meditation to the West. However, his contribution to the reinterpretation and ordering of the Vedic literature and his insights into the mechanics of consciousness contained in that literature can never be overestimated. In particular, his *Apaurusheya Bhashya* presents the mapping of the unfoldment of phenomenal creation embedded within the structure of Rig Veda as its own commentary upon itself.

The sounds of Veda, the dynamic structure and flow of Natural Law, unfold in sequence. Veda emerges from the pure silence of *Atma* [individual consciousness] in a precise, sequential flow of sound and silence—the Vedic Sounds and the gaps between them. As Veda spontaneously unfolds, every stage contains the totality of Natural Law. This means that as each elaborated expression emerges, it embodies the total value of Veda—each progressive unit of sound contains the totality of Natural Law in a progressively more elaborated form. This progression of sounds and the gaps between them is a perfectly integrated structure of Natural Law, with each sequentially larger unit expressing the same totality of Natural Law in a more expanded version. Maharishi calls this the *Apaurusheya* ('uncreated') *Bhashya* ('commentary') because it is the commentary of Veda upon itself. This is not a commentary created by human intellect, but is the eternal flow of Veda, in which every sound, every expression, is an elaboration upon what has preceded. Each unit of sound in the sequential unfoldment of sounds is thus a complete structure of total Natural Law, illustrating the formation of Natural Law as it sequentially evolves. Maharishi cognized this commentary of Veda upon itself, and therefore we refer to it as Maharishi's *Apaurusheya Bhashya* (Nader, 2012, p.10).

The core text of Vedic cosmology, and upon which the ROD model depends, is the Rig Veda. In accordance with the most popular recension of that work, it is divided into ten books or *mandalas*. The first stanza (*pada*) of the first verse (*sukta*) of the first book (*mandala*) of the Rig Veda presents the essential ontological basis for this manuscript and illustrates how the text is a commentary unto itself:



In fact, for this initial review, we need only be concerned with the first word (*Agni*). Even the first syllable of that first word (*ak*) will suffice to illustrate the entire process of elaboration of the manifest universe from out of an undifferentiated primordial wholeness. According to Maharishi Mahesh Yogi, the remainder of the Rig Veda text -

each letter, word, space, verse, and so on - is a progressive, and mathematically precise, elaboration of what came previously (Nader, 1995, p.17). In this way, the text is entirely self-referral. After briefly considering the mechanics involved, an exact term-for-term correspondence will be found when the Taoist vision is examined in the following section.

Within the field of Vedic Science formulated by Maharishi, *Brahman*, the totality, is the wholeness of absolute and relative existence. The absolute reality at the basis is considered an undifferentiated singularity (*samhita*) of pure consciousness. According to the Science of Creative Intelligence (Haddad, 2012), absolute pure consciousness can be conceived as having two essential qualities: existence (*Paraprakriti*) and intelligence (*Purusha*). This is the core of the dualism of Samkhya philosophy (Maharishi, 1967, p.359). Other sources variously describe this fundamental complementarity as *akasha* and *prana*, matter and energy, etc. As a theoretical framework is developed later, it will be seen how it greatly facilitates understanding if, at this early stage, one goes back to the simplest possible expression of the two most primal aspects that emerge out of wholeness. These are the seeds of the symmetry breaking that sequentially bring about the condensation of the material universe of relative experience from out of the transcendental singularity. If instead the discussion is based around matter and energy, for example, it always begs the question of where matter and energy themselves came from. Therefore this research has favored the

simplest and most abstract concepts (existence and intelligence) for the core attractors of relative duality.

All that can be unequivocally asserted may be that it is self-evident that the unified “basement” of the universe both exists and is not inert because we are here to evolve and reflect upon it. The universe exists and it has a primal awareness, in that Planck-scale phenomena within it are shown to be nonlocal and connected. At the quantum level, at least, nothing happens in isolation or without reference to the whole (McTaggart, 2008, p.11).

Being thus aware, in its unmanifest entirety, it follows that it can only be aware of itself. This gives the idea of wholeness curving back upon itself, the collapse of infinity onto its own point value to provide the complete range of possibility. In terms of Rig Veda mirroring the process in sound, the most open and full configuration of the organs of speech is ‘ah’ – the first letter of the stanza above. That first sound is followed by a complete glottal stop, ‘ka’ – which is the most closed expression of speech. So in this first syllable of the Rig Veda (‘ak’ from *Agni*), speech has gone from fullest to silence, mirroring the mechanics of consciousness curving back upon itself. Each further expression in the Rig Veda is a commentary on the process defined by the first syllable, and how wholeness differentiates and gives rise to the multiplicity of creation through spontaneous sequential symmetry breaking (Nader, 1995, p.35, and Routt, 2005, p.21). Maharishi has explained:

The process of symmetry breaking is an eternal, continuous phenomenon. At every moment, at every minute particle of creation – in the self-referral, unmanifest basis of creation – this phenomenon of spontaneous symmetry breaking is going on, and this is expressed by 'ak' – infinity collapsing onto its own point. This is the pulsating universe; and what is pulsating? – the Self. The Self is infinity, the Self is the point, so there is a self-referral relationship of infinity with its own point. This is the picture of the self-referral performance of the Absolute (MVU, 1987, p.497).

Moreover, the characteristic of being self-referral and self-interacting in the *samhita* (wholeness) of pure consciousness, gives rise to a pre-manifest geometry of observer or knower (itself, called *rishi* by Maharishi), an observed or known (also itself, called *chhandas*), and a process of knowing (its own dynamical nature, called *devata*). This is the 3-in-1 nature of the universe: it is One (*samhita*), but at the same time Three, viz. *rishi*, *devata* and *chhandas* (Wright, 2007, p.32). The terms *samhita* (used to mean singularity, literally a collection of hymns), *rishi* (used to mean the knower, literally the seer or author of a Vedic hymn), *devata* (used to mean the process of knowing, literally the deity of the hymn), and *chhandas* (used to mean the known, literally the meter of the hymn) are the terms uniquely adopted by Maharishi, specifically to make an epistemological connection back to the structure of Rig Veda. Other Vedic texts (see Krishnananda, 2013), such as the Upanishads used more direct equivalents such as *Adhyatma* (subjectivity), *Adhidaiva* (transformation), and *Adhibhuta* (relative creation). But these technically precise terms do not convey the lively self-referral, self-contained, and self-similar structure of the mechanics encoded within the Rig Veda. Neuroscientist Tony Nader explains:

The Vedic Sounds were cognized by the ancient *Rishis*, or Seers, who experienced *Shruti* [literally “heard” – the most authoritative class of Vedic literature] as the reverberations of their own self-referral consciousness, their own *Atma*. In describing Vedic Cognition, Maharishi explains that the *Rishis* ‘saw the home of all the Laws of Nature, the dwelling place of all creativity, the seed of creation, in their own reverberating consciousness. The *Rishi*, the knower, found himself as the expression of knowledge’. Thus the *Rishis* did not cognize the Vedic Sounds as something external to themselves, but rather as the self-referral dynamics of their own consciousness, their own intelligence. The sounds, or hymns, of the Vedic Literature—the sounds of Natural Law—are the *Rishis*’ experiences of how self-referral consciousness expresses itself into the diversity of creation (Nader, 2012, pg 8).

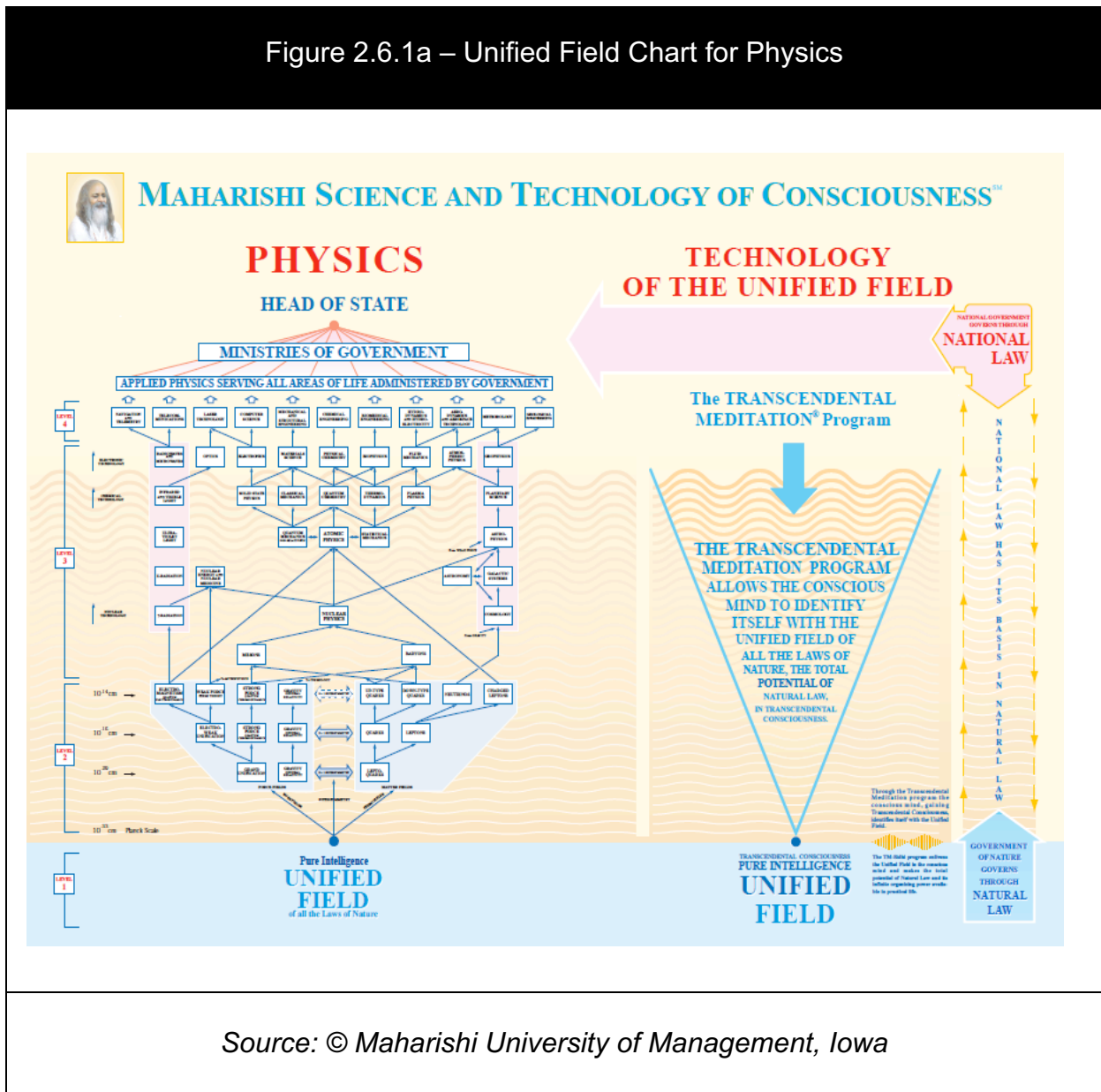
This process and its associated mathematics will be fully explicated because they are fundamental to the revised method of reading Yijing trigrams that form the other pillar of the contemplated Recursive Organizational Dynamics model. For now, let it suffice to say that this is essentially a binary system (*Paraprakriti* and *Purusha*) cast across three dimensions (*rishi*, *devata* and *chhandas*), yielding a total of eight (2^3) possibilities of relationship or qualities of nature (*prakriti*). These eight building blocks (four values in emerging mode, and four in submerging mode) then combine with one another in an ever increasing level of complexity to coalesce out into all the forms and phenomena of daily experience (Routt, 2005, p.26).

2.6.1 Unified Field Charts

This relationship is graphically expressed in terms of the congruency of subjective approach in the Veda and objectivity through modern science in the Unified Field Charts shown in Figures 2.6.1a and 2.6.1b. Another very valuable invention to come out of

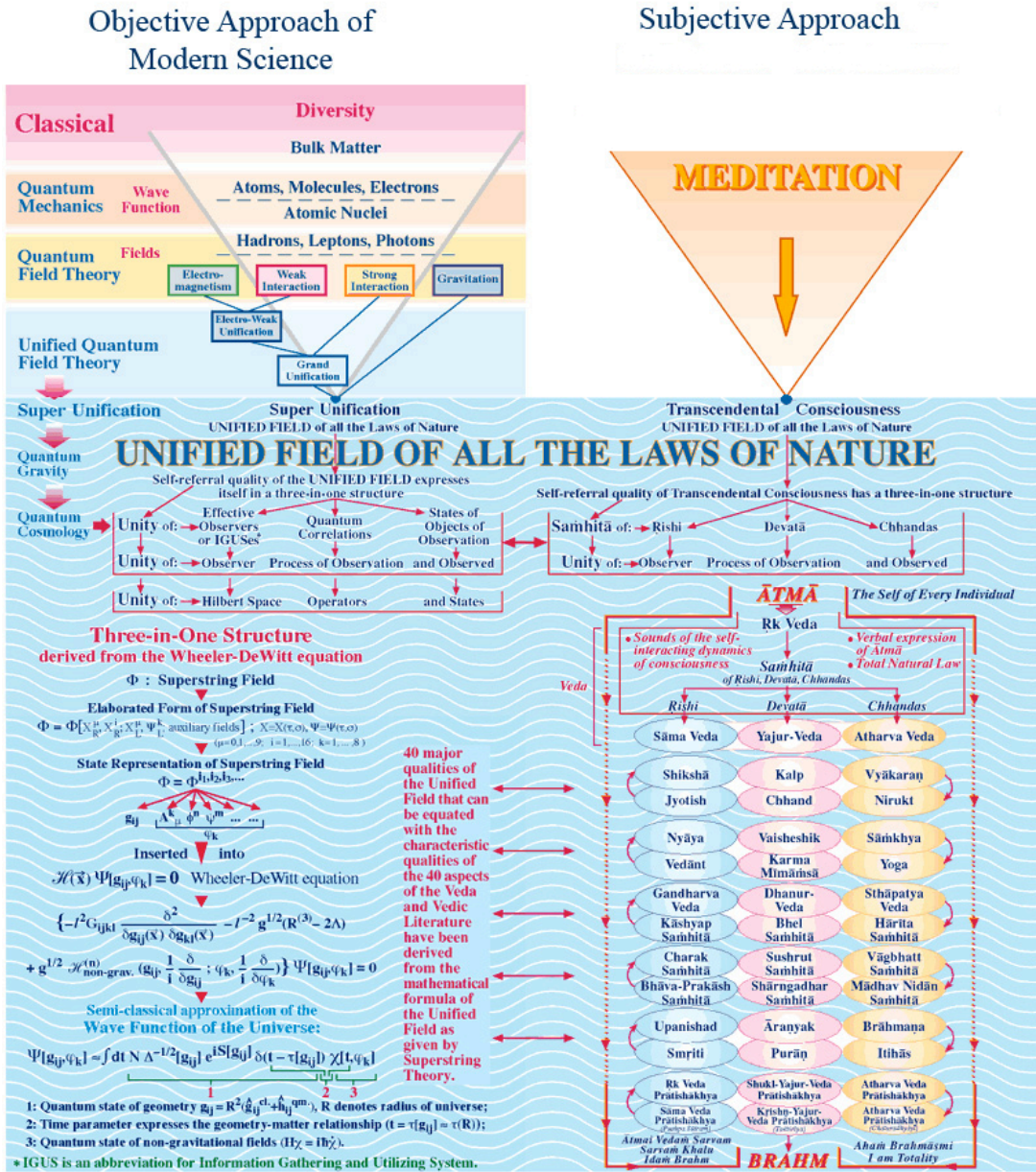
Maharishi University of Management (then Maharishi International University) in the mid-80s, the “Unified Field Chart” took any chosen modern discipline and related it back through its associated scientific principles, to its ultimate basis in the Unified Field, which the university equates with the quantum vacuum state.

Figure 2.6.1a – Unified Field Chart for Physics



Source: © Maharishi University of Management, Iowa

Figure 2.6.1b – Unified Field Chart for Quantum Physics



Source: © Maharishi University of Management, Iowa

Another feature of the charts was that they also enlivened the reader's awareness of how the progression to successively finer levels of objective manifestation is mirrored in the refinement of subjective experience in consciousness, until both the objective and subjective approaches are unified at the level of the Unified Field which is equated with undifferentiated Pure Consciousness (Hagelin, 2004).

It has been seen previously that organization design has almost as many approaches as there are organization structures. Nonetheless, the end result, at a process level, is always a functional mapping of the desired flow of goods and information, with a view to providing better service and furthering the mission of the enterprise. And to recap, the most granular unit of structure is an individual with a job and reporting relationships. Traditional org charts are network diagrams that focus on individuals filling specific roles within the organization. The linkages between the chart elements are lines of control and illustrate reporting alignments. Setting aside for the time being the org chart's obvious and indispensable utility in managing a large community of people and shared corporate objectives, it represents nonetheless a very Newtonian view of the world – people as billiard balls that bump into one another in very narrowly defined ways. Successful organization designs are about people and are oriented towards the desired corporate culture they support. But in addressing a collection of living organisms, it has been argued that designers and living systems theorists have until now omitted to tie their architecture back to the root of life.

At the other end of the scale there is the Unified Field Chart approach. These types of charts don't normally deal with naming and placing specific individuals, but rather look at how the product and processes of the organization trace back to their ultimate source in the unified field of all the laws of nature. The original charts were drawn up for each department at Maharishi University of Management and provided a graphic way of demonstrating the inter-disciplinary basis of all knowledge in the Self or consciousness of everyone, which is the common ground from which each subject, student and faculty could be related to every other (Dillbeck, 1987). This is immensely valuable in an organizational context also because it provides each employee with a lively connection to the purposes, goals and subject matter foundation of all team members, colleagues, management, competitors, customers, suppliers, etc. It puts the organization and every part of it into a larger universal context, while taking reference to the smallest microscopic level. In this way, the whole range of subjective and objective corporate experience is enlivened and taken into consideration, mirroring that first word of Rig Veda, *Agni*, and the story of creation through the collapse of infinity onto its point value (*Ah to ka*).

Therefore, both traditional and contemporary organization designs offer a static description and mapping of the social architecture. They are like the parts manual for a piece of equipment. On the other hand, the Unified Field Chart offers a static understanding of the evolution of the company's output from the basic fabric of material

existence. Most importantly, *it emphasizes its lively connection to consciousness, creativity, which is the essential currency of any social organization.*

Unified Field Charts were publicly introduced in an organizational context at a Maharishi International University leadership conference in the beginning of 1984 and have been found extremely useful ever since. They provide a comprehensive and all-inclusive background that puts every other organizational activity into a unified perspective. However, a possible shortcoming is that they do not map the dynamic interplay of the processes and people within the organization and the underlying fabric of reality.

The contemplated ROD model sits in the space between these two poles, replacing or substituting neither of them. What it aims to provide to augment both approaches is a dynamic mapping of the fundamental processes of chaos in nature as they impact and inform the unfolding of events and relationships in the organization. A ROD diagram would not necessarily be job-based or process-based. It could simply describe the environment of both as Nature “sees” them and would tend to manage the situation if left to her own devices. The contemplated ROD model might be termed “Looking Through the Eyes of Nature” and provides insight into how we can work in accord with nature to increase the ease with which we conduct our affairs (Wright, 2007).

2.7 Taoist Perspective

The core text of Taoist cosmology, and upon which the ROD model depends, is the Dao De Jing. The 42nd verse (“Transformations of the Tao”) provides the most succinct expression of the process of manifestation:

第四十二章 道化	道生一。一 生二。二 生三。三 生萬物。萬 物負陰而 抱陽。沖 氣以爲	和。人之所 惡。唯孤寡 不穀。而王 公以爲稱。 故或損之 而益。或益	之而損。人 之所教。我 亦教之。強 梁者。不得 其死。吾將 以爲教父。	The Tao gives birth to One. One gives birth to Two. Two gives birth to Three. Three gives birth to the ten thousand things. (<i>Laozi</i>)
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This seminal teaching is quite easy to understand on the basis of the Vedic Science set forth previously. However, there seems to be some confusion about it from even the most accomplished scholars writing in English. Master Mantak Chia provides a typical overview thusly:

While the Tao was difficult to name and grasp, the ancients did describe primal forces emanating from it... [referring to the passage above] The *One* is the highest unity, the primordial energy in the Cosmos. The well known Tai Chi [*taiji*] symbol portrays this force in which the Yin and Yang

are perfectly balanced and still united. One can imagine it just about ready to burst out and create all the world. Yin and Yang separated and became the *Two*. Yin and Yang produced three elemental forces called the *Three Pure Ones*. The Three Pure Ones created the *Five Elemental Energy Phases* [*wuxing*] of the Universe. These Five Forces (often called the *Five Elements*) were powerful enough to generate the [sic] 'all the myriad beings [ten thousand things],' that is, all the familiar forms of Nature and the Universe, including you (Chia, 1990, p.16).

This appears to be an astonishingly unsatisfactory explanation. One of the better explanations comes from a non-academic source in the person of the elusive Rita Aero when she says:

[It] is the Absolute that produced the Tao. The Absolute stands outside of space and time – outside of the universe it creates. The Tao produced the One: temporal/spatial reality. The One produced Two: the opposite charges of positive and negative (*yin* and *yang*). The Two produced Three: matter, energy, and the physical laws that bind them together. From these three came the existence of All Things [ten thousand things] in the universe", (Wing, 1986, commentary on stanza 42).

She gets closer to the truth as expounded by the Vedic literature when she says:

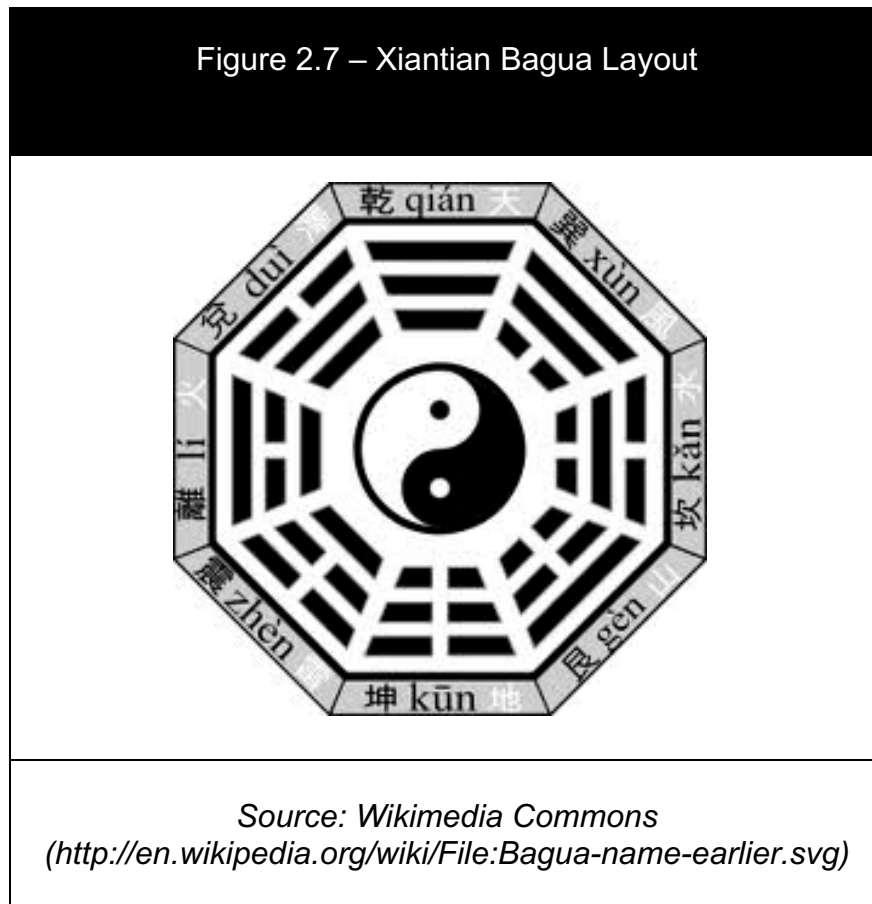
Polarity arises from the Taoist view of the cosmological origins of the universe: before existence there was an idea – an Absolute. The Chinese call it *T'ai Chi*, the Supreme Ultimate. The Absolute, in a sudden and tremendous desire to know itself, divided itself from nonexistence in a cataclysmic event resulting in endless cause and effect... Instantly, space was formed and time began, and two charged states came into being, *yin* (negative) and *yang* (positive). As a result of the complementary polarity of *yin* and *yang*, matter and energy, which were at first undifferentiated, separated and regrouped into the physical reality that became our universe (Wing, 1986, p.14).

In order to gain a clear picture, one must return now to the Vedic prescription as defined in Rig Veda 1.164.3: “*Richo Akshare parama vyoman..*” [The verses of the Veda exist in the collapse of fullness - as in the *kshara* of ‘ah’ to ‘ka’ from the first word *Agni* - in the transcendental field, the Self. (Dow A., 2003)].

The concept of Tao equates with *Brahman*, the totality. From there comes forth the Absolute reality of the One (*samhita*) – which in Taoist theory is called *wuji* or *hun-dun* (Russell D., 2006) and is symbolized as a plain white circle, the background to the famous *taiji* yin/yang fishes symbol (*taijitu*). That omnipresent wholeness was earlier given the Vedic attributes of existence (*Paraprakriti*) and intelligence (*Purusha*). These are the Two of Laozi’s “Transformations of the Tao” and are described as primordial *yang* (existence) and primordial *yin* (intelligence). These are sometimes metaphorically referred to as *Tian* (heaven) and *Di* (earth). By virtue of these two intrinsic characteristics, pure consciousness (*samhita*, *wuji*) reflects self-referrally upon itself, giving rise to the notion of Three (*rishi*/knower, *chhandas*/known, and *devata*/process). In Taoist symbolism, these three are *yin*, *yang*, and the dynamic interplay beautifully shown as the eyes and wavy line between them in the familiar *taiji* diagram (☯).

The mathematics reveals just eight possible permutations of the Two cast across the Three. So by its own very nature, the One produced first Two, then Three, and from there eight essential qualities or natures (the Vedic *prakritis*). The ancient shaman sage/emperor Fu Xi cognized this set of relationships too, and delineated them through

eight symbols (*bagua*), which are the constituent trigrams of the *Yijing*. Fu Xi determined that the binary system is at the basis of nature. He reputedly invented the *bagua* to represent how nature expresses itself through sequential bifurcation (Wu, 2009, p.66).



The interactions between all these components, the process of sequential symmetry breaking, gives rise to the entire manifest universe (Laozi's "ten thousand things"). It will be necessary to look deeper into why a trigram (*bagua* symbol) is made of three lines later, and it will be found that they correlate with the Vedic *rishi*, *devata* and *chhandas*.

Here is found a complete and useful interpretation of the quintessential wisdom of Laozi's Dao De Jing. The mathematical and conceptual correlations between the two philosophical traditions of China and India are much deeper and richer and will be more fully explicated in the development of the theoretical framework that follows. It is even possible that the origin of the two systems is the same. Some claim that FuXi is just a Chinese derivative of the Vedic-era Indian deity, Vishnu (Power Point Paradise, 2011).

For now, the Taoist perspective can be brought to a close by pointing out that there must be 64 basic descriptive markers for any situation when considering it from the point of view of a subject of a relationship interacting with an object of experience. The subject of the relationship has an overall dominant trigram (*gua, prakriti*), and the object of the situation has its predominant trigram also. Therefore, eight trigrams (subject) by eight trigrams (object) can be accounted for through 64 hexagrams. These are the constituent hexagrams of the *Yijing*. The old truism that "the only constant in the universe is change" is catered for in the diagrams by the concept of moving (mutating) lines. When a *yin* or *yang* line reaches a critical threshold, it transmutes into its opposite. It is a digital state change mediated by the *yin* and *yang* attractors. Each trigram component line is essentially an astable oscillator. A change in any line(s) in either of the hexagram's subject-object trigrams will give rise to a different hexagram. In this way, the *Yijing* attempts to map the changing fabric of emergent reality.

In the Vedic teaching it is said that suffering is caused by our failure to comprehend the One because our awareness has been overshadowed by the Three. This materialism is called the mistake of the intellect (*pragya-aparadh*). In a 3-in-1 universe, success can only be ensured by lively inclusion in the awareness of both aspects of reality, absolute and relative. Contemporary Taoist master Wu Zhongxian sums it up like a Vedic *rishi* from India's deep past when he says: "From a *Yijing* numerology perspective, the three layers of Change are known as *Han San He Yi*, which means holding Three in One", (Wu, 2009, p.64).

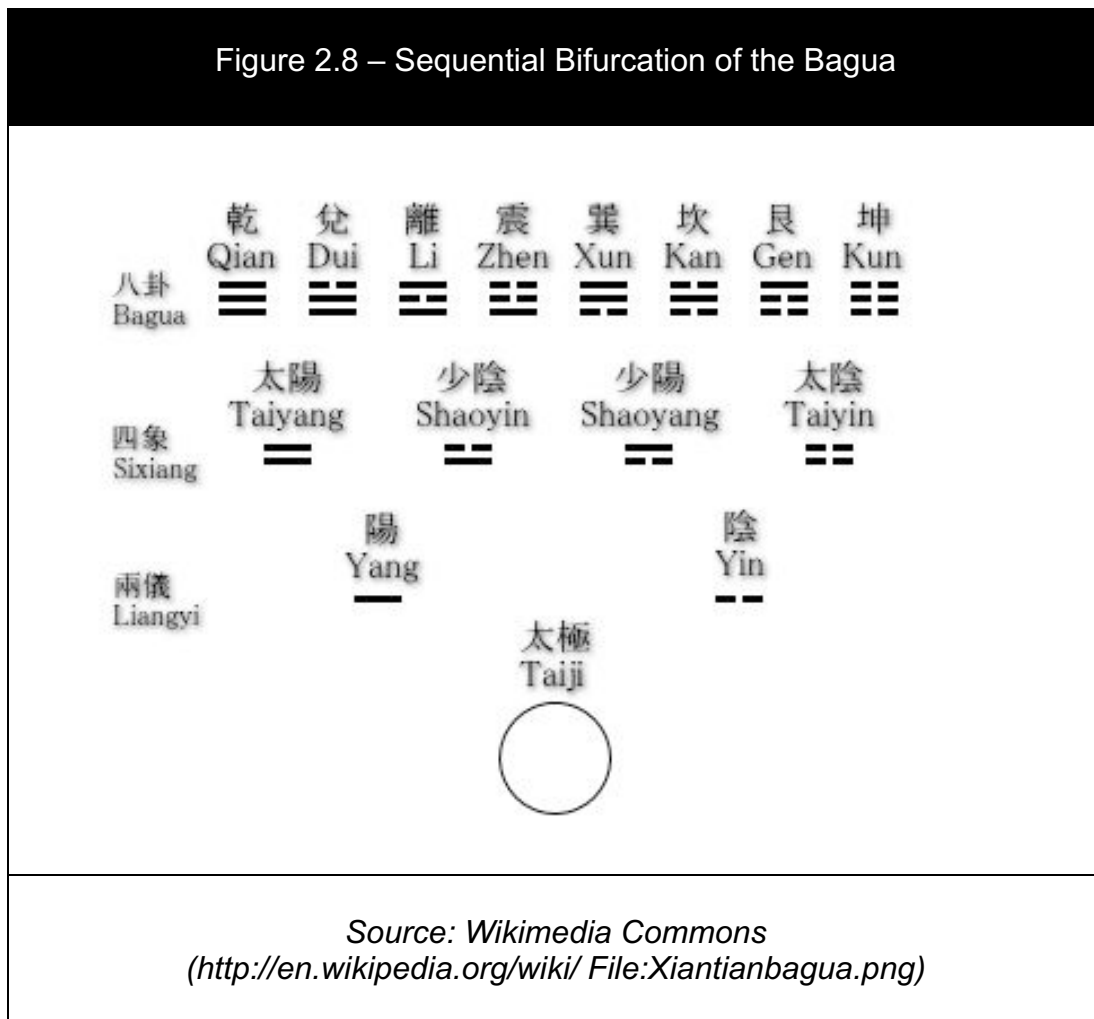
From the foregoing discussion it can be seen that the Indian and Chinese viewpoints of antiquity are exquisitely parallel and in accord with the emerging perspective of modern theoretical physics, viz. that all of the relative diversity of material existence is really nothing more than a collection of ideas and manipulations of the underlying formless, unchanging, self-interacting unified field. This is *Veda-Leela*, the play of consciousness. In the following section, these concepts will be used to derive a model and gain insights into the structure and workings of a modern social organization.

2.8 Synthesis and Extrapolation (Framework Preparation)

Like most cultures, the Chinese understand a trinity to be one of the most important concepts in their spiritual tradition, and their universe is based upon the number three. In Taoist practice, that trinity arose from differentiation within the primordial chaos

(*hundun*). Above is Heaven, Earth below, and Man is in the central fulcrum point between them representing all beings (Wu, 2009, p.57). As stated previously, the philosopher king, Fu Xi (ca 3kY BCE) invented the eight trigrams (*bagua*) to describe the essential qualities of manifestation, and constructed each as a glyph of three stacked lines indicating relative preponderances of the trinity of Heaven, Earth, and Man. A solid (*yang*) line indicates that the referred trinity component is expressed, whereas a broken (*yin*) line shows it to be more obscured or withdrawn. Or so it has been handed down since the dawn of history. The Heaven, Earth and Man connotations are widely understood metaphors, but when it is said that Heaven is above, Earth is below, and Man is in the middle, then the symbolism starts to become trite, especially as our civilization prepares to venture into outer space. When the trigrams' lines are ordered like this as well, apparently since Confucian times, it becomes necessary to put the matter on a sounder footing. From the prior analysis of the intuitive cosmology of the Vedic literature and Laozi, it is more precise and scientific to assign the *gua* lines to the knower (subject), known (object), and process of knowing (dynamism) aspects. It is intuitively easy for our cultural bias to associate Heaven with the Knower, Earth with the Known, and Man with Dynamism. We shall see that the structure becomes much clear and less shrouded in mystery when we use the Vedic knower/known/process-of-knowing terminology. The traditional Vedic Science way to view and order these three is knower (*rishi*), process (*devata*), and known (*chhandas*). And this convention is logically consistent in that starting from the position of the subject, and linking through process to the known, is the obviously natural order.

Before the philosophy can be put to practical use, there are some problems with the way that the principles have been applied to consulting and analyzing the *Yijing*, and an attempt must be made to make the process more credible. The traditional way to build a hexagram is line-by line, from the bottom up. The analysis moves from the inner to the outer, from the subject of the inquiry to its environment. Trigrams are also built and read from the bottom up in the sense that the bottom trigram is considered to describe the subject, and the upper the object.



In addition, the accepted numerological evolution of the trigrams themselves is a simple binary bifurcation and is often drawn from the bottom up – from *Taiji*, to *Liangyi* (*yin* and *yang*), to *Sixiang* (four symbols), to *Bagua* (eight trigrams) as can be seen in the preceding diagram in Figure 2.8.

From James Legge’s erudite late 19th-century translation of the *Yijing* and its associated commentaries (using Wade-Giles Romanization), we read:

In (the system of) the *I* there is the Great Extreme, which produced the two *I* (Elementary Forms). These two Forms produced the four Hsiang (Emblematic Symbols); which again produced the eight Kua (or Trigrams). The eight Kua served to determine the good and evil (issues of events), and from this determination there ensued the (prosecution of the) great business of life (Van Over, 1971, p.334).

2.9 Inconsistency (Framework Preparation)

Nevertheless, according to every known contemporary sinological source, the trigrams are read literally with Heaven at the top and Earth at the bottom (i.e. top down), so that the traditional insistence in building from the bottom up is self-contradictory. **This is the fundamental postulate of “Recursive Organizational Dynamics,” viz. that the bottom line in a trigram is the *rishi* (knower/subject/vitality) line, the central line is *devata* (process/dynamism), and the top line is *chhandas* (known/object/structure).** If one looks at the names and qualities of the *bagua* as they have been passed down for posterity across the millennia, it will be seen that they seem to make much more sense with this new, more logical and consistent, arrangement of trigram

line order. The eight trigrams (*bagua*) are: ☰ (*Qian*), ☷ (*Dui*), ☲ (*Li*), ☱ (*Zhen*), ☴ (*Xun*), ☵ (*Kan*), ☶ (*Gen*), and ☷ (*Kun*). They are ordered after their binary elaboration from *liangyi* and *sixiang* described above. Clearly, for the four *gua* that are symmetrical around their central line, it makes no difference which ordering is used, since both systems have *Man* or *devata* in the central place. That leaves us with *Gen*, *Zhen*, *Dui*, and *Xun*. For example, beginning at the end of the *yin* cycle we find *Gen* (see Figure 2.7). In *Gen* (Mountain), we see the top line solid *yang* above two broken *yin* lines (☶). To picture a mountain according to the traditional standard, by an emphasized heaven line and weak earth and man positions is nonsensical. Whereas the image of a strong earth (object, top) line as suggested by the proposed Vedic interpretation clearly gives the idea of a mountain and its associated symbolism for arresting progress.

According to several superior quality translations, the symbolism (*xiang*) for the Mountain trigram is rendered as “resting, arresting progress” (Legge – see Van Over, 1971), “stopping/stillness” (Cleary, 2006), “resting, calm, firm, quiet” (Wilhelm, 1984), “keeping still” (Huang, 2004), “desisting, stillness” (Blofeld, 1968), and “stop, hold, or stability” (Wu, 2009). Wherever possible, one must return to the most archaic characters and expressions of the *bagua*. Stephen Field looks at the two thousand year old meanings of the ideograms defined in the Han dynasty *Shuowen* (dictionary) and sees in *Gen*: “to oppose and resist”, (Field, 1999). In the contemplated ROD interpretation, the object or structure quality (top line) is being fully expressed (solid), whereas the dynamism/movement central line and the subject or spiritual vitality aspect

(bottom line) are suppressed. This is a graphic example of how, from its component structure alone, the *Gen* trigram conveys the idea of rigidity, solidness and silent inertia. Conversely, it is not at all logical to obtain the traditional associations by placing a lively Heaven over a non-expressed Earth and Man (as is the case with currently practiced interpretations).

Similarly, if one proceeds clockwise round the *bagua* diagram (Figure 2.7) to the beginning of the *yang* side, we find *Zhen* (Thunder or Earthquake), where the only enlivened line is at the bottom (☳). It implies a thrill of initiation or a stimulus to outward expression. This construction with the dynamism and object qualities as yet withdrawn gives the idea of a flash of inspiration, or an urge to action. Activation or incitement is also clearly conveyed by the image of thunder sending a shock into the atmosphere. Wu sees the imagery of Thunder as “shaking, vibrating, awakening”. Legge translates as “moving, exciting power”, and Wilhelm says “inciting movement.” Field observes that the original meaning of *Zhen* was probably “Earthquake.” Once again, it is hard to understand these traditional qualities arising from a *yang* line in the Earth position, whereas the Veda-derived bottom-up application used in the contemplated ROD model is completely congruent across configuration and meaning. This first glimmer in the *yang* side of the *bagua* is the first manifest impulse of consciousness. We can loosely couple knower, process and known with mind, *qi* (breath or vital energy) and body on the level of the physiology. Wu Yu-Xiang’s classic “Expositions of Insights into the Practice of the Thirteen Postures” of the internal martial art of *taijiquan* admonishes that

“the *xin* (mind) mobilizes the *qi* (breath)... the *qi* mobilizes the body”, (Lo, 1985, p.43).

The internal martial art of *taiji* is a living demonstration of the mechanics of *yin* and *yang* building and collapsing into one another, the process that was examined from the first word of Rig Veda (Wright, 2007), and this expression from the literary tradition perfectly illuminates the trigram Thunder on the level of personal experience within a very concrete real-world activity.

Moving on to *Dui* (Lake or Marsh), the subject and dynamism lines are being expressed but the top object/structure component is withdrawn (☱). Based upon the ancient meaning of the ideogram for *Dui* (meaning “mouth”), the symbolism is “negotiation, communication and opening” (Wu). Field offers the *Shuowen* definition of *Dui* as “to explain” and labels the trigram “Mediate”, (Field, 1999). It is commonly translated as joy or pleasure, but the original connotations are consistent with the contemplated ROD methodology, whereas the commonly accepted trigram line reading appears to make no sense on any level.

Finally, at the start of the *yin* cycle, one finds *Xun* (Wind) with *yang* lines in the object and dynamism positions, and a weak subject line at the bottom (☴). The symbolism for *Xun* is not straightforward when using contemporary explanations. Legge gives this as “flexibility, penetration” and Wilhelm as “penetrating, enduring”. Cleary sees “penetration, entering, following and conformity”, (Cleary, 2006, p.xvi and 1986, p.22). Going back again to the original imagery from the ancient character for *Xun*, Wu says:

This image of wind blowing bamboo shows us the energetic meaning of the trigram Xun showing off its strength and its inner flexibility. Xun is a symbol for vitality and life energy, and it has strong momentum... The attribute of Wind is the ability to proceed and to propagate gently (Wu, 2009, p.111).

More helpful in this instance is Huang when he writes:

The Commentary on the Symbol says, 'Following the wind; an image of Proceeding Humbly'. 'Following the wind' suggests proceeding, but the proceeding should be gentle, flowing easily into whatever the wind goes. Applied to human affairs, it means to proceed humbly, or to resign sovereign authority (Huang, 2004, p.446).

This last translation is supported by Field's examination of the character for *Xun* which he labels "Kneel" because it shows two people kneeling and conveys the idea of "humble, yielding", (Field, 1999). In order to accomplish the recommendations quoted by Huang, it will be necessary to diminish (humble) the will of the bottom subject line, but to remain strong in terms of the movement quality (central line) and object of attention (top position). Although this imagery of *Xun* is perhaps more difficult and convoluted, it does clearly submit to the contemplated ROD analysis – but once again there is no meaningful correlation with the commonly accepted heaven-at-the-top trigram line correspondences.

The contemplated ROD model is much more than a restatement of an eight-sided *bagua* diagram. It also combines the *mandala* structure and import of the Rig Veda to provide an inner circle corresponding to *Mandala I* and an outer circle which maps to

Mandala X. The first *mandala* (book) of Rig Veda is more ‘localized’, concerning the consciousness of the microcosm in seed form, whereas the last *mandala* concerns the group, the consciousness of unity. As we have seen, the first book begins with “*Agnim lle*” and lays out the foundation. *Agni* is the fire of consciousness within the human nervous system. The tenth *mandala* is a commentary on the gaps in the first and pulls it all together, ending in verse X.12.40 with:

Common be your intention; common be the wishes of your hearts; common be your thoughts, so that there may be thorough union among you. (Wilson, p.415)

There are other considerations to be addressed in an examination of the Taoist tradition in the light of Vedic knowledge. It will be important to reconcile the (apparently) totally different approaches to the cosmology of sequential symmetry breaking in the *Dao De Jing* (from 1 to 2 to 3 to everything) and as emerges from *Shudao* or *Yijing* numerology (from 1 to 2 to 4 to 8 to everything). The former explains the cause of manifestation, and the latter the mechanism. Most authors seem to have focused their attention on the mechanism and ignored the cause. It will become apparent that the *sixiang*, or four emblematic symbols, will tie back and dovetail precisely into the Vedic concepts of four of the *apara prakriti* emerging from, and four submerging into, the 3-in-1 structure of self-referral consciousness of *atyanta-abhava* in the gap between successive collapses (Wu, 2009, p.91 and Routt, 2005, p.25).

Leading on from this initial introduction to *sixiang* will be a review of Chinese Five Element (*wuxing*) theory as it relates to the *bagua*. Although it is of less significance to

the contemplated ROD architecture, a critical analysis is still necessary to remove any remaining confusion. *Wuxing* is first recorded in the *Hongfan* (Great Model) from the Western Zhou dynasty (1027-711 BCE) and is therefore much more recent than the origins of the *Yijing* (Wu, 2009, p.89). Each of the *bagua* has been associated with a particular element (earth, water, fire, air and metal). This may be appropriate for medical diagnoses, but it would appear to be a poor extrapolation of concept when considering the basic attributes of the *bagua* themselves. This could have implications for the popular Chinese system of geomancy called *fengshui* that is deeply involved with Five Element theory, although this is only mentioned in passing and is a topic for future study. Stephen Field contends that *fengshui* is likely of far greater antiquity than *wuxing* theory - which was absorbed later, rendering the argument moot (Field, 1999). The commonly accepted connection with the five elements across the eight trigrams (*bagua*) seems contrived and the research will endeavor to show that even the Vedic view of five elements (*pancha bhutas* – earth, water, fire, air and ether) requires some reassessment. According to Hagelin, “the transition from consciousness into matter in human life represents the junction point between the quantum mechanical and classical in the structure of the human physiology”, (Wallace K., 1993).

In the immensely important and revered Vedic classic, the *Bhagavad Gita*, these five *tanmatras* (elemental precursors of the *mahabhuta* categories) are listed together with mind, intellect and ego, and constitute the eight *prakritis* (Maharishi, 2009, p.11).

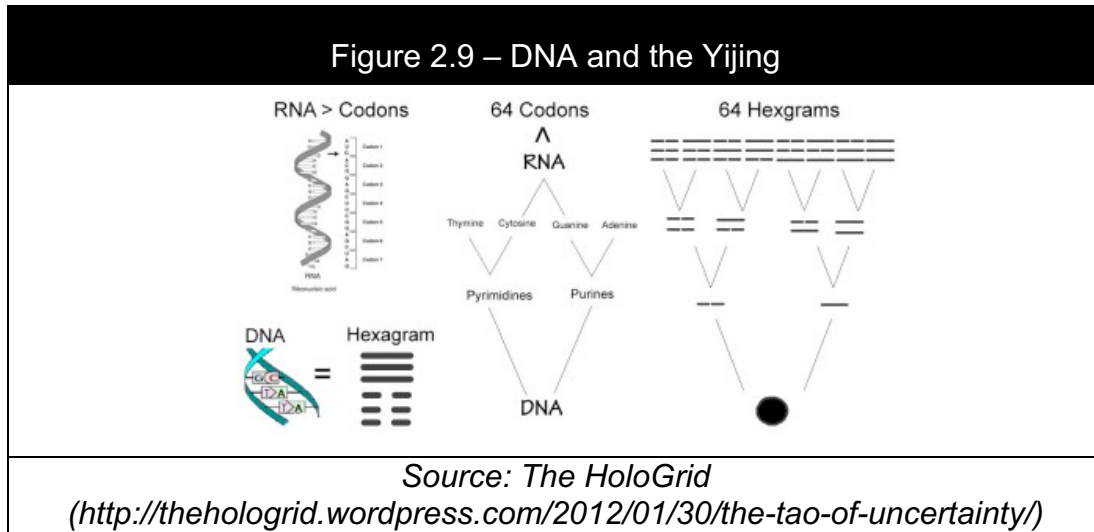
Wherever five primordial elements are found, there is some measure of discomfort contriving them into a mathematical construct based around 4 and 8. However, in the most ancient times there were only four principal elemental qualities described, viz. earth/solid, water/fluid, fire/radiant and air/gaseous (Percival, 2000, p.33). From this insight it will be possible to postulate what the other four *bagua/prakriti* elements actually are, and why it has been so difficult to describe them in everyday language. That in turn offers to make the contemplated ROD proscriptions contextually richer.

One last consideration before moving on to developing a detailed theoretical framework for Recursive Organizational Dynamics is that the entire edifice so far has been built upon the cosmologies of ancient China and India. It is worth noting that Field is of the opinion that the basis of the *bagua* is not cosmology. He asserts that the cosmological flavor was shoe-horned in over the original religious basis by the Confucian scholars of the late Zhou and early Han periods (Field, 1999). While it may be that the practices of divination that arose prior to the Zhou dynasty took on primitive religious overtones, it may also be true that even further back at the earliest beginnings of Chinese civilization, the ultimate basis was cognition of the underlying mechanics of manifestation as has been laid out in this research. The accredited authors of the *Yijing* and founders of the Zhou dynasty were Zhou Wen-Wang (King Wen) and his son, Gongdan, the Duke of Zhou. It is not known what their sources were, but their hexagram names, imagery and aphorisms may well have been based upon popular lore of the time. However, the *bagua* were reputedly invented by the proto-historic emperor Fu Xi two thousand years

earlier. The myth records that the *bagua* grew out of numerology and FuXi's discovery of binary arithmetic suggested to him by the markings on the back of a dragon-horse (*long-ma*) that emerged from the Yellow River (the *hetu* or "river pattern"). This is not suggestive of religious design, and if one is inclined to believe all the other things that Fu Xi was purported to have brought to mankind (taming animals, riding horses, making fire, cooking food, fishing nets, hunting, rule of law, musical instruments, mathematics, writing, the calendar, cities, etc), then one has to wonder just who his teachers really were (Wu, 2009, p.66). There is an emphasis on cognition and inspired invention. Once again there is a parallel with the Vedic history. Vedic literature is broadly grouped into two categories: *shruti* (literally "heard") and *smriti* ("remembered"). The Vedas are considered the principal works of *shruti*. In other words, they were cognized (or heard). Literature that was composed after the Vedas (and incidentally, mostly subsequent to Laozi), are called *smriti* and are deemed secondary. Such works can be considered to be mostly commentaries and analyses of the older texts. There seems to be a very similar muddled situation with all the Confucian commentaries and extensions to the original intuitive foundation works of shamanic Taoism.

In summary, there are a great many correlations between the rudiments of the Indian and Chinese philosophies. Another remarkable "coincidence" that only came to light recently is that DNA, the blueprint of all life, also has an internal structure that exactly maps mathematically to the *bagua* and *Yijing* (Walter, 1996, p.155). This is surely

simply because nature is supremely efficient and the *bagua* structure is the simplest conceivable manifesting framework.



Further correlations are found in theoretical physics. Even if not all scholars are yet convinced that it is possible at this stage to state categorically that the Unified Field of modern physics is the same as the field of Pure Consciousness, the two paths are descriptively identical and minutely analogous in processes. Moreover, by using the precision of Vedic Science it has been shown that the parallel cosmologies of both India and China in antiquity were structured around the same fundamental principles, and further that each culture was subsequently able to derive a coherent and fully consistent science of medicine, architecture, language, even martial arts, around their philosophies and core literature. It would seem extremely unlikely that such a broad swath from every aspect of life should have a totally consistent basis by chance. It is with this confidence that the contemplated ROD methodology applies the concepts and insights to contemporary organizational structure.

CHAPTER THREE - THEORETICAL FRAMEWORK

THEORETICAL FRAMEWORK

3.1 Developing the Theoretical Framework

The theoretical framework for Recursive Organizational Dynamics arises from an intertwining of the Vedic and Taoist approaches in such a way that each explicates and benefits from the other. We have found three great stumbling blocks to this integration:

- i) that the Chinese appear to have suffered from a fundamental contradiction in the way they traditionally evaluate the *bagua* symbols, and the manner in which they interpret them;
- ii) lack of a consensus amongst ancient peoples over whether there were four or five primordial elements, space or *akasha* being the fifth; and
- iii) hugely varying definitions for the Indian concept of *akasha* which often seem diametrically at odds with one another.

Once a consistent resolution is found for these three major difficulties, the framework falls out quite naturally and both cultural traditions are fully in accord and complement one another synergistically. The synthesis results in a model reminiscent of Hegelesque dialectical monism that describes a Vedic 3-in-1 (Absolute and Relative) ontology which is then expressed using the Taoist (Yijing) imagery (Smillie, 2009).

In drawing from the Indian and Chinese classics, this research always refers back to the original (most ancient) texts, rather than subsequent commentaries. As previously

noted, the Vedic canonical literature is broadly divided into two groups: *shruti* and *smriti*. *Shruti* literally means “heard” and comprises all those texts that were cognized or given in divine revelation, whereas *smriti* means “remembered” and connotes a more humanly codified analysis. *Shruti* is considered to be absolute truth and is given the highest authority in the literature. For the formulation of ROD, from the Vedic tradition, only the Rig Veda and Bhagavad Gita were taken as core source authorities. Both are considered *shruti*, and Rig Veda is the oldest Indo-European work of all. It must be pointed out that the Gita forms a component part of the great Mahabharata classic, which is considered *smriti*. But since the Bhagavad Gita is the direct discourse of the divine Lord Krishna, many scholars adjudge that component to be *shruti*. It is also acknowledged that the Upanishads, which are the scriptural basis of Ervin Laszlo’s work and TOE discussed in the next section, are also considered *shruti*. But the Upanishads came much later, some completed as late as medieval times, and the references to *akasha* made by Swami Vivekananda (Laszlo’s ultimate TOE source, as it was for Nikola Tesla before him) are based in Vedantin thought and the Chhandogya Upanishad which is associated with Sama Veda rather than Rig Veda and perhaps a thousand years younger than Rig Veda (Trine, 2010, p.146). Vivekananda was the first widely renowned proponent of Vedanta philosophy in the west, teaching during the late 19th century. As a final associative thread, we observe that the revered Veda Vyasa, author of the Bhagavad Gita, was a foundational pillar of the Vedanta system and features predominantly in the tradition of Adi Shankara’s *Advaita Vedanta*, to which lineage Vivekananda was attached via his guru Ramakrishna Paramahansa to the

eastern Puri branch at Govardhana Matha. The author's own Vedanta lineage goes back through Maharishi Mahesh Yogi to the *Shankaracharya* northern seat at Jyotir Math in Uttarakhand (Maharishi, 1967, p.368). Therefore, both lines extend from a common philosophical source in Shankara about 1,200 years ago and have been intimately associated ever since.

Likewise, Recursive Organizational Dynamics takes as its Taoist roots the purportedly divine cognitions of the first patriarchal sovereign founder of Chinese culture, FuXi, during the 29th century BCE from which the trigram system and the venerable Yijing were born (Cultural China). Laozi is the other essential element in the ROD model. Laozi's Dao De Jing came later (fifth or sixth centuries BCE) but is nonetheless the fundamental text upon which Taoist, Confucian and Chinese Buddhist thought is based.

ROD chooses to present itself styled after the Taoist *yin-yang* and *bagua* diagrams because they represent an immediately satisfying and intuitively obvious way to visualize the framework. It should be noted however that the ROD framework is self-sufficient in that even if the forthcoming resolution of the way that the symbols are read is not accepted, then the model stills stands as a new expression that simply adopted the traditional glyph mechanism as the clearest way to portray the concepts.

As previously discussed, the traditional way that any of the eight *gua* (*bagua*) or trigrams is built and read is from the bottom up when constructing the Yijing hexagrams.

It will be recalled that the trigram is constructed by laying down alternating *yin* and *yang* lines one above the other - first to build the *liang yi* (two forms, *yin* and *yang*), then to create the *sixiang* (four emblems), to then produce the final 8-fold trigram structure through period-3 bifurcation (Wu, 2009, p.91). Therefore, the first line is considered the bottom, and the third, the top. Similarly, when two trigrams are stacked to form the hexagrams of the Yijing, the bottom line is line 1 and the top, line 6. Also, traditionally if the trigrams are drawn around the *yin-yang* diagram radially, then the first line is considered the innermost, extending out to the third line furthest away from the center.

The Chinese have described the three lines as heaven, man, and earth respectively. This is a universal symbolism whose adoption is easy to understand. The concept of an overarching primordial self becomes Heaven. The epitome of objectivity becomes the all-supporting Earth beneath our feet. And the dynamic axis of action between the two is Man. But then inexplicably, the basic maxim to read the trigram from the base up is abandoned to the trite idea that Heaven is above, and the Earth below.

From the Vedic analysis, we saw that the original singularity (*samhita* in Sankrit), being aware, was aware of itself. Since clearly it alone existed and it was intelligent, there was nothing else for it to be aware of other than itself. This idea of consciousness curving back upon itself gave rise to the idea of cyclical motion and a virtual unmanifest geometry: the knower (itself), the known (itself), and the actual process of knowing (also itself). It was explained how the first syllable ('Ak') of the first word of the first stanza of

the first verse of the first book of the first Veda (or the very first Vedic utterance) displayed the entire dynamics in the collapse of 'Ah' into its point value 'Ka', expressing the full range of consciousness knowing itself (Nader 2012, p.10). By bifurcation we obtain 8 *prakriti*. Mathematically it is 3 dimensions cast across a binary attractor: *rishi*, *devata* and *chhandas* across *Purusha* (Intelligence) and *Paraprakriti* (Existence). It is just a play of ideas, called in Sanskrit *maya-shakti* (the power of that which is not).

The process is recently echoed in the words of Wudang *taiji* master Zhou Xuan-Yun, who says that before the world existed, everything was in a state of primordial chaos (*wuji*). But then it started to spin, and as it spun, the heavier and lighter parts separated out to form *yin* and *yang* (Zhou, 2:04). This is eloquently displayed in the familiar *taijitu*, the “*yin-yang* fishes” diagram, that shows the primordial *yang* aspect (existence) continually somersaulting (curving back on itself) over the primordial *yin* aspect (intelligence) on a background of wholeness (*wuji*). In similar fashion to the Vedic approach, we have the emergence of 8 *gua* (heaven, earth and man dimensions cast across *yin* and *yang* attractors) in the Taoist cosmology. Thus in both philosophies, and by self-reference, the One takes on the appearance of Three. Three-in-One. *San cai he yi* (Wu, 2011). Without losing its essential unchanging status in One, it becomes the dynamic play of Three.

We described the knower in Vedic terms as *rishi*, the process as *devata*, and the known as *chhandas*. These three aspects of original wholeness are also known in Vedic

literature as *sattva* (positive), *rajas* (neutralizing) and *tamas* (negative), and taken collectively as the three *gunas* or qualities of nature, and also referred to in the Upanishads as *adhyatma* (pure subjectivity), *adhidaiva* (evolution or transformation), and *adhibhuta* (relative creation) (Yukteswar, 1972, p.8 and Langenkamp). The sequential evolution or elaboration of the physical from out of pure subjectivity is described, among others, in the Vedic *darshana* (philosophical system) of *Samkhya*, and the *prakriti* are clearly enumerated in their specific order of emergence by Lord Krishna in chapter 7 verse 4 of the Bhagavad Gita, translated as “Earth, water, fire, air, space, mind, intellect, and ego – this is My *Prakriti* divided eightfold”, (Maharishi 1967, p.359, and 2009, p.11).

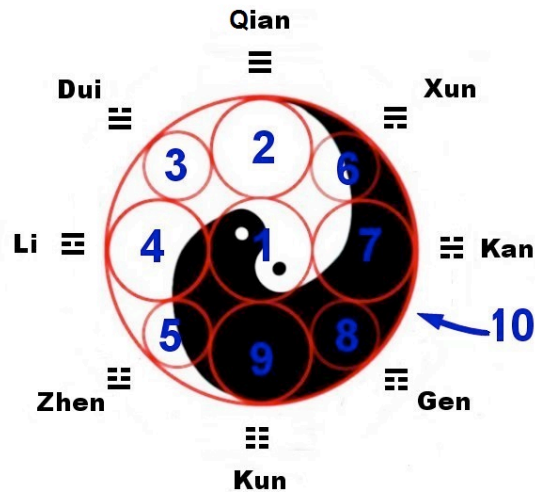
If that same approach is extrapolated to the trigrams, it is easy to see that the lower line represents the subject dimension, the center line is the dynamic or process dimension, and the top line is the object dimension. This seems to be the clear intention of the framers of the philosophy in the days FuXi and his vision of the *Hetu* (Wu 2009, p.79). Using the nomenclature of subject at the bottom, dynamic in the middle, and object at the top, if we review the traditional symbolism and names assigned to the *bagua*, we will find that the apparently random and meaningless images suddenly make sense and stand as profound symbols for the characteristics they were intended to portray. It is astonishing that no one seems to have noticed this since the time of Confucius.

Therefore, by illuminating the ubiquitous *yin-yang/bagua* symbolism with the Vedic Three-in-One dimensional understanding, the Taoist diagrams take on a new and vibrant ontological identity that is wholly congruent with the Vedic description of primordial cosmology. Moreover, the inherent dynamism expressed in the *yin-yang* diagram (*taijitu*), coupled with the self-evident presentation of the evolution of relationship between subject, dynamic, and object displayed in the *bagua* diagram, together confer a lively understanding that is hard to grasp from the arcane Vedic writings. However, wherever possible the intention now is to get away from arcane Taoist or Vedic jargon and adopt terms that will be useful in a business and organizational context. So in discussing the model, the research will refer to the knower quality as the **subject**, the process of knowing as the **dynamic** or **process**, and the known as **object**.

There are two recensions of Rig Veda: the *ashtaka* system that divides the work into 8 sections, and the more widely used *mandala* system that divides it into 10 books (*mandalas* or circles, emphasizing once again the cyclic nature of the process). It was previously discussed that the first *mandala* is a description of wholeness in terms of the individual, then *mandalas* 2 through 9 each focused on a particular *prakriti*, and finally the 10th *mandala* being once again about wholeness in terms of the group and a commentary on the gaps between the verses of the first. Nader attributes the *prakritis* to the *mandalas* in the order specified above from the Bhagavad Gita, viz. earth, water,

fire, air, *akasha* or space, *manas* or mind, *buddhi* or intellect, and *ahamkara* or ego, starting with earth at mandala 2 (Nader 1995, p.58).

Figure 3.1a – Bagua overlaid with Mandalas



Source: Wright (2007)

Figure 3.1b – 17th-century Taijitu



Source: University of Chicago Library

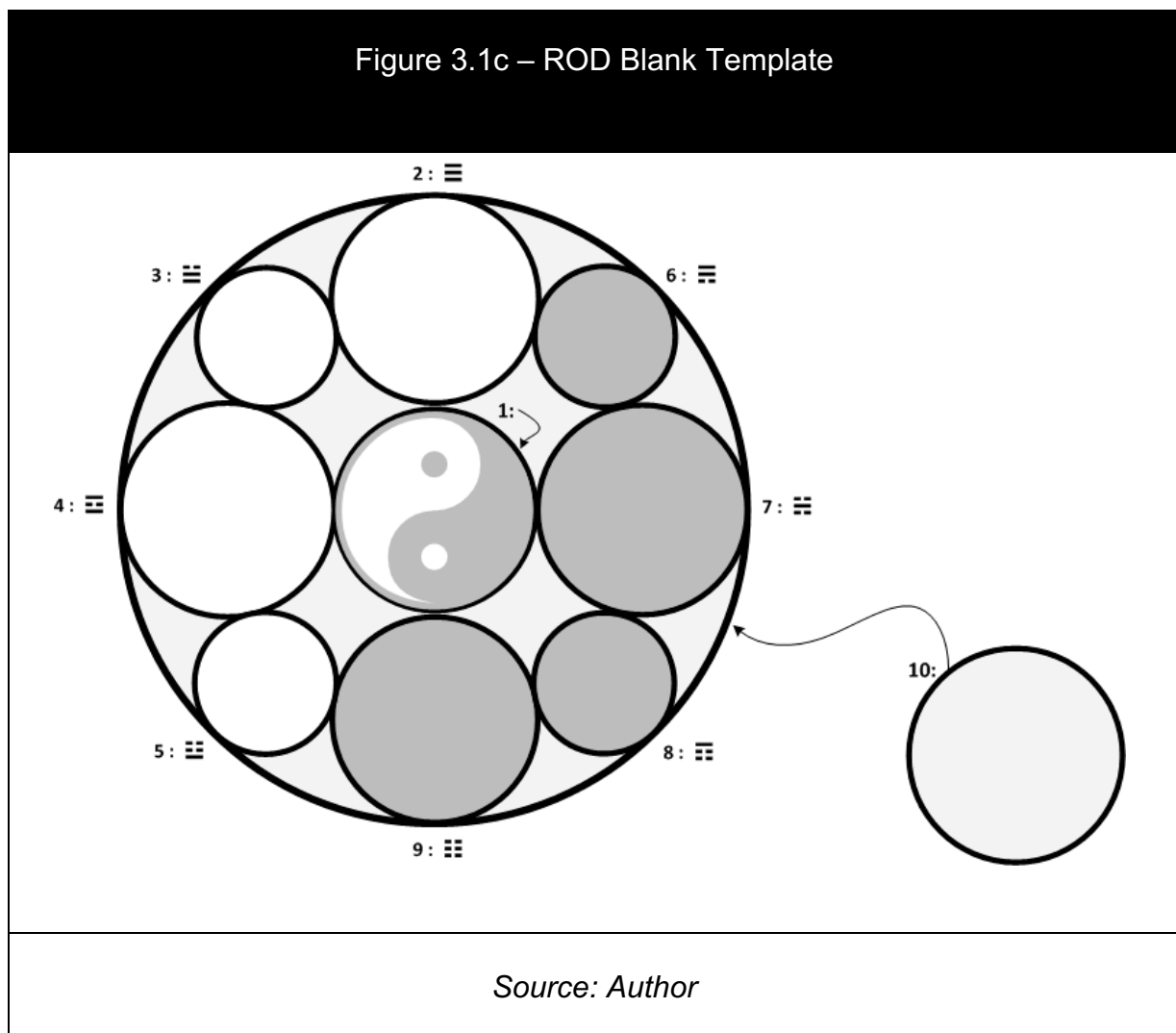
The 8 Vedic *prakriti* have been correlated with the 8 Taoist *bagua*. Now to begin constructing the ROD model, the *mandala* architecture of Rig Veda is used to overlay circles on the well-known *taiji* diagram in Figure 3.1a. This early ROD model figure used the older style *taiji* diagram used in the 17th century which better illustrates how *yin* and *yang* are intertwined. Note the modern *taiji* symbol, self-contained, in the central *mandala* 1. The 8 trigrams are drawn around the *taiji* in the traditional order of their bifurcation genesis, i.e. *Qian* (“Heaven” in *mandala* 2) through *Zhen* (“Thunder” in *mandala* 5), and then *Xun* (“Wind” in *mandala* 6) through *Kun* (“Earth” in *mandala* 9).

Figure 3.1b shows the diagram portion of a beautiful Ming-era woodblock from Zhang Huang’s 1623 “Compendium of Diagrams” which makes the heritage of the diagram of the contemplated ROD model clear (Wright, 2007, p.24 and 39).

In order to simplify the diagram, to make it useful for a markup template, and to minimize the occult-looking aspect, Figure 3.1c was developed as the basic Recursive Organizational Dynamics model diagram.

The cardinal point circles, plus the central and 10th circles are larger because they are pivotal points in process and relationship. The 10th circle is drawn separately for reasons of clarity and usability but is actually the large circumscribing circle around the other nine. In a business or organizational context, *mandalas* 1 and 10 are associated with management functions. Each of the eight *bagua* circles represents a specific

process relationship within the organization design that is informed by the underlying characteristics of the trigram for which it is named. The light-colored circles constitute the *yang* business-facing half of the diagram, with the characterizing feature being a strong subject (intention) line at the base of each trigram. The four dark circles are the *yin* items that make up the supporting infrastructure-facing part of the entity under consideration.



The ROD diagram conforms to the *xiantian* or Before Heaven *bagua* layout ascribed to FuXi which follows, as has been shown, from the sequential bifurcation of a binary system across three dimensions. However, there is another main configuration in common use, especially in Feng Shui in conjunction with *wuxing* theory, called the *houtian* or Later Heaven layout. This latter format is ascribed to Wen Wang (King Wen of the 11th century BCE, author of the Yijing and founder of the Zhou dynasty) and is purported to describe the world of events through time after birth.

Figure 3.1d - Houtian Bagua Layout



Source: Wikimedia Commons
(<http://en.wikipedia.org/wiki/File:Bagua-name-later.svg>)

The biggest difference between *the houtian* (After Heaven) layout shown here in Figure 3.1d and the *xiantian* (Before Heaven) layout shown in Figure 2.7 is that the pivotal north/south positions are now occupied by *Li* (Fire) and *Kan* (Water) as the primary agents of change.

Jamie Willson (Willson) states:

The Later Heaven arrangement represents the cyclic nature of the world. It is sequential in nature and deals with changes brought on by the passing of time. Here the focus is achieving balance by accepting change. The Later Heaven arrangement also represents the acquired energies. This energy is sustained by the air we breathe and the food we eat,

Moreover, it appears that the *houtian* layout possibly stems from religious, rather than ontological, underpinnings. Here is a famous passage from the *Shuogua* that is used to remember the order of the *houtian* sequence:

The myriad things emerge in *Zhen*,
Are brought to completion in *Xun*,
Are made manifest in *Li*,
Serve one another in *Kun*,
Rejoice in *Dui*,
Struggle in *Qian*,
Toil in *Kan*,
And are accomplished in *Gen*.

In referring to this saying, sinologist and *Yijing* translator, Stephen Field, notes:

[It is this] passage from the *Shuogua zhuan* on which is based the configuration of trigrams known as the *houtian*, or Later Heaven sequence. To most readers of the *Shuogua* the content of the passage was incidental to the order of the trigrams as they appeared in the

narrative. This sequence presumably added the dimension of time (from "emergence" to "completion") to the space of heaven and earth and the other six elemental emblems of the cosmos. While it is certainly possible that the sequence of *bagua* in this passage has temporal or other significance, what is missing here or elsewhere is any connection between the sequence as expressed and the actual meanings of the trigrams. Richard Wilhelm, the German translator of the Yijing, believed it highly probable that this passage represented a cryptic saying of great antiquity. I concur. Immediately following the passage in the Shuogua is an interpretative commentary, which itself attests to the antiquity of the original passage and suggests that the meaning was not self-evident and the authors themselves had already forgotten the reasoning behind the ostensible sequence. But the commentary does not succeed in elucidating the sequence, because the original passage was religious in meaning, while the Shuogua sought to find ontological and cosmological import (Field, 1999).

It is not clear why the trigrams should be laid out in the *houtian* order, but Wu says that this *bagua* arrangement “represents the cosmos after creation. It also represents a person after birth or an existing object”, (Wu, 2009, p.69). Indeed, of King Wen’s ordering of the hexagrams, Joel Biroco notes:

The mystery of the King Wen sequence has driven many people to attempt to solve it down the centuries, and in the past few decades in particular there have been more than a few making staunch claims to have solved it in various ways (Birocco).

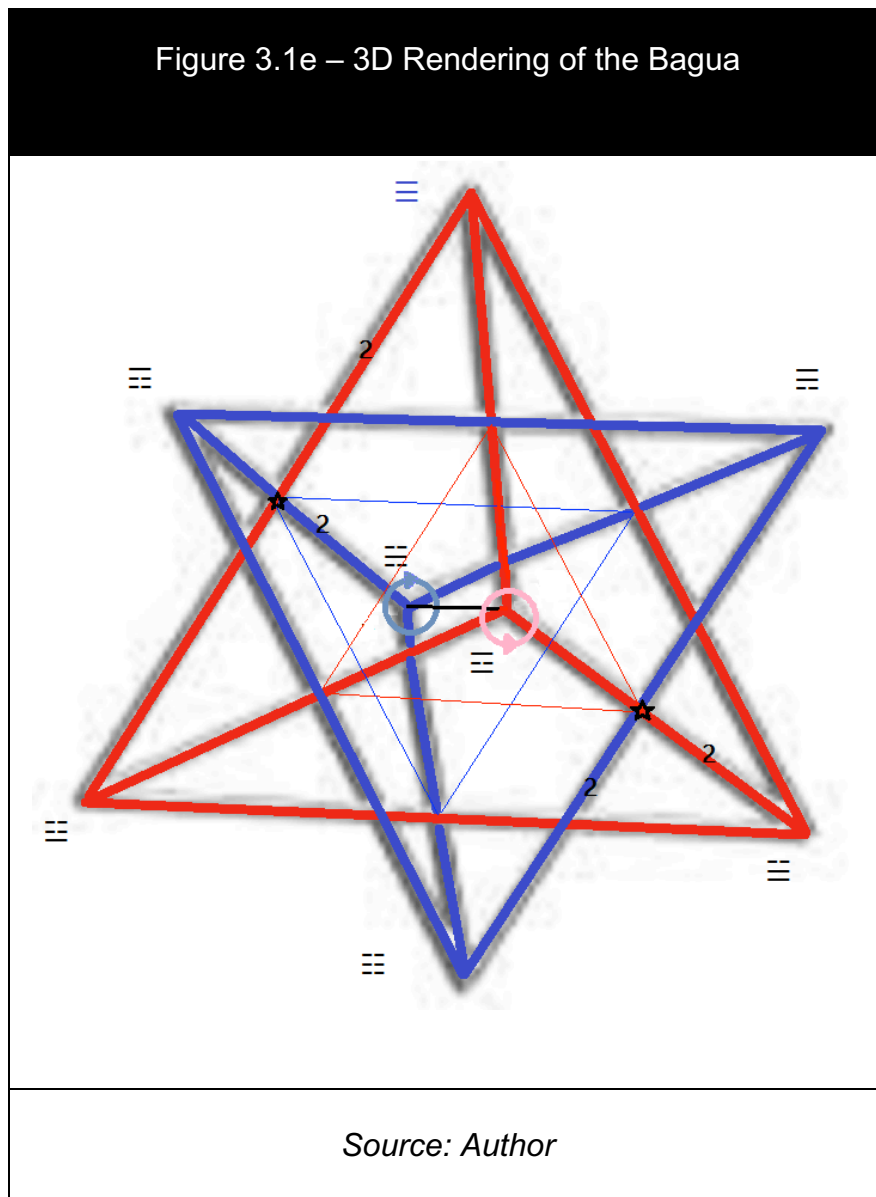
Harmen Mesker, a 30-year Yijing veteran, states:

At first glance the *houtian bagua* trigram circle seems devoid of any symmetry. It seems as if the trigrams follow each other in a random order, and that there is no logic behind it. But if we look at the circle in the way we are taught in the Ten Wings [of the Yijing], namely as an order linked with time, patterns start to emerge (Mesker, 2010).

Nevertheless, in the *xiantian bagua* layout adopted by ROD, it will be possible to see the passage of time (or rather, its ontological basis) plus the derivation of the *wuxing* system of Chinese elements.

Although out of scope, the research uncovered a possible rationalization of the *houtian* layout in taking a denormalized (flat) projection of a 3D representation of the *xiantian* layout. A brief overview is warranted here because an important aspect of living systems is their ability to accommodate change. In fact it could be argued that living systems only evolve in response to the stimulus of being disturbed. Capra (2010) notes that: “A living network responds to disturbances with structural changes, and it chooses both *which* disturbances to notice and *how* to respond.” How disturbances in the environment cause an organism to spontaneously reorganize at a higher level of complexity could perhaps be explained by the *houtian* mechanism that concerns itself with the impact of ongoing environmental stimulus. This could in turn provide a powerful support for implementing additional organizational programs based upon the Yijing.

In its dynamical aspect, the *xiantian* (ROD) layout could best be understood in three dimensions as two interpenetrating, counter-rotating tetrahedrons. Although the *xiantian* 2D version used in this research is easier to understand in the context of ROD, this 3D rendering in Figure 3.1e offers a way to visualize a chaotic system balanced between opposing poles of the trigrams of change. This in itself seems to be a pressing area of future research that will be re-addressed in a later chapter.



3.2 Intention and Awareness

Finally, additional cogency can be added to the ROD *bagua* subject/process/object stacking order (subject at bottom) by using the following retroductive arguments:

The *yang* side of the *bagua* is characterized by a strong (*yang/solid*) subject line, whereas the *yin* side groups together all those trigrams where the subject line is weak (*yin/broken*). One could characterize the strong and weak subject line as intention (applied will) and awareness (surrendered will), an outward manifesting and an inward contemplative stroke. So let's look what would happen if the lines were stacked in a different order. Working with the *yin/yang* qualifier as an expressed or weak process line suggests a dipole of movement and stillness. Likewise, using object at the bottom as the 1st line, we would get a *yin/yang* world characterized by object identification and not. These are certainly valid dichotomies of relative existence, but it's hard to use them to formulate evolution, or a cyclic sequence to increasing complexity or growth of consciousness.

Therefore, we feel confident in the layout and approach taken in ROD using the subject line at the bottom. After all, ontologically, even though in the final essence only the play of ideas (*Veda Leela* – the play of consciousness) is being dealt with, it is the Self (subject) that reaches out to experience (process) itself (object). The other line stacking formats might be enlightening in certain respects, but fail to move the model forward in terms of the basic purpose and the inherent structure of creation.

3.3 Extending the Theoretical Framework

Utilizing the original and natural *xiantian* diagram layout, plus the intrinsic and self-evident meanings of the subject/dynamism/object component trigram lines, together

with a cursory familiarity with the symbolism traditionally associated with each *gua*, is enough of a theoretical framework to make the diagram useful as an organization design model.

Nonetheless, in order to add richness and a complete theoretical foundation, the research must drive out the issues related to the “elements” assigned to each trigram. By doing so, it will open up several paths to further potential business research and extensions to this ROD model, and it will also facilitate the contrast and comparison of the ROD methodology with other ideas and models covered in the following sections.

The term “elements” here refers to the classical concept of subtle qualities or humors – rather than the modern idea of atomic number. Theoretical physicist, John Hagelin, emphasizes that “these are the so-called ‘subtle elements’ or *tanmatras*... These *tanmatras* must be distinguished from the five ‘gross elements’ or *mahabhutas*, also called *akasha*, *vayu*, *agni*, etc., which have previously been identified with classical space-time and the four states of bulk matter, i.e., gaseous, plasma, liquid, and solid, respectively”, (Hagelin, 1989, p.75). The ROD architecture puts forward what is believed to be a unique and novel elemental framework.

The argument has raged on for literally millennia concerning whether there are either four or five fundamental elements. The Platonic Greeks recognized four. Aristotle added a fifth with the “quintessence” of ether. The ancient Egyptians and early

Buddhists recognized four. Both the Western and Indian (*Jyotish*) systems of astrology are based around four elements, suggesting a common and older genesis. The Indian Hindu traditions based around Samkhya and the Upanishads list five (***pancha tanmatras/mahabhutas***). The Japanese adopted five elements (***godai***), and the Chinese five also (***wuxing***) although the Chinese concept is somewhat different and will be dealt with later.

Representing a re-evaluation of the Theosophist thought, Harold Percival is adamant that there are only four elements. “This solid state is fourfold and is itself of an earthy, fluid, airy and fiery nature”, (Percival, 2000, p.33, 174, 457, 858, 863, etc). All are agreed on the basic four elements, viz. earth, water, fire and air. The contentious fifth is variously added as ether, space, metal, or void. The Sanskrit term for space is *akasha* (or *vyom* or *shunya*). Maharishi, in defining the Samkhya concept of *tanmatras* says, “The *tanmatras* constitute the five basic realities, or essences, of the objects of the five senses of perception”, (Maharishi, 1967, p.361). The problem arises when this root basis of perception is conflated with the ontological basis of all the elements. As discussed in the earlier sections on Vedic and Taoist thought, the basis of all eight of the elements (*prakriti/bagua*) is the mathematically bounded total number of possible permutations of expressed or withdrawn values of subject, dynamism and object. They all transmute into one another, but none of them evolve from another as its precursory root cause.

The difficulty arises from the lack of congruence in the understanding of what the fifth element, *akasha*, means, and what its relationship with the other four elements is. In terms of its linguistic root, *akasha* means “radiance” or “shining” (Trine, 2010, pg 4), and thus brilliant or luminous. Why it was so named aside, the term *akasha* means different things in different contexts and it is suggested that the confusion arises when these not-always-compatible definitions are conflated.

According to Cheryl Trine, the great Vedic sage Vasistha explains that there are three types of *akasha*: *cidakasha* which is the singularity of pure consciousness; *cittakasha*, which is mind-space at the mental level; and *bhutakasha*, which is the elementary level that is the basis for the other four elements (Trine, 2010, p.149). Specifically Vasistha says to Lord Rama:

Rama, space is threefold — the infinite space of undivided consciousness, the finite space of divided consciousness and the physical space in which the material worlds exist.

The infinite space of undivided consciousness (*cid akasa*) is that which exists in all, inside and outside, as the pure witness of that which is real and of that which appears to be. The finite space of divided consciousness (*citta akasa*) is that which creates the divisions of time, which pervades all beings, and which is interested in the welfare of all beings. The physical space is that in which the other elements (air, etc.) exist. The latter two are not independent of the first. In fact, the others do not exist (Venkatesananda, 1984, p.96).

Thus, the Vedantins, including Vivekananda, taking the Upanishads as their authority, assume the widest view of *akasha* as a synonym for *Moola-* or *Para-Prakriti* (original substance) – which we have described as that member of the original *Samkhya* dyad

representing the existence attribute of wholeness, or the primordial *yang* quality. In Vivekananda's view, the other member of the original duality is *Prana* (energy). This interpretation gives matter (*akasha*) and energy (*prana*) as the binary attractors, rather than the more radical and essential ideas of existence and intelligence used in ROD.

According to Vivekananda:

According to the philosophers of India, the whole universe is composed of two materials, one of which they call *Ākāsha*. It is the omnipresent, all-penetrating existence. Everything that has form, everything that is the result of combination, is evolved out of this *Akasha*. It is the *Akasha* that becomes the air, that becomes the liquids, that becomes the solids; it is the *Akasha* that becomes the sun, the earth, the moon, the stars, the comets; it is the *Akasha* that becomes the human body, the animal body, the plants, every form that we see, everything that can be sensed, everything that exists. It cannot be perceived; it is so subtle that it is beyond all ordinary perception; it can only be seen when it has become gross, has taken form. At the beginning of creation there is only this *Akasha*. At the end of the cycle the solids, the liquids, and the gases all melt into the *Akasha* again, and the next creation similarly proceeds out of this *Akasha* (Vivekananda).

And out of this dichotomy comes all the apparent confusion about *akasha*. The conflation of concepts seems to be the source of the idea that the four well-understood elements have their evolutionary basis in *akasha*. However, if we simply regard *akasha* as "space" and use the terms *paraprakriti* or *yang* or primordial existence to describe the philosophical matter-oriented root (in other words, an unrelated concept), then we can avoid bootstrap circular definitions. This is an important consideration. The *yin-yang* distinction is often described in terms of male/female, hot/cold, bright/dark, etc – but these are all relative dualistic expressions. There are similar difficulties describing

them as matter and energy superfields, or even mind and matter. In the same sense that *akasha* is an element rather than the *yang* prime principle, mind is an element, not the *yin* prime principle. Further on, we will look at how the diagram can be used to map fermionic and bosonic quantum spins – but not all bosonic items are forces, not all items on the fermion side are particles. By going back to completely abstract first principles, to the *Samkhya* definitions of *Purusha* (intelligence) and *Paraprakriti* (existence), we avoid equivocation.

The elder Theravada form of Buddhism popular in southern India and Indonesia describes *akasha* rather eloquently. *Akasha* is not an elemental substance, but simply the absence of matter, a container for the existence of matter (Trine, 2010, p.151 and 152). This is much more along the lines of how we would think of “space” in the West. Space is just a 3-dimensional construct in which matter manifests.

Using the Upanishadic conception of *akasha* according to Vivekananda, Laszlo would apparently have us believe that space is actually synonymous with the quantum foam and is literally his “Akashic Field” and the glue of his Theory of Everything. His position is indicated by the following excerpts:

Science’s understanding of the fundamental nature of the universe is different from what most people believe it is. The universe does not consist of bits of matter moving about in space and time. Matter, in the last analysis, is a bound form of energy, and space and time are an integral dynamic element, interacting with matter and energy in all its forms.

Moreover, the various forms of energy emerge from and are embedded in a fundamental field or medium that was not part of the conventional world picture. This “basement” of the universe is variously called quantum vacuum, unified vacuum, physical spacetime, hyperspace, or nuether. Despite these abstruse names, its existence is not merely theoretical and - notwithstanding the implication of its names—it is not a vacuum and not just space. It is an energy- and information-filled “cosmic plenum,” the womb of all that exists, and the background of all that happens, in space and time (Laszlo, 2008, p.89).

While experimentation and theory-building continues, it is already safe to say that truly empty space is relegated to history. The reality recognized at the frontiers of physics is a cosmic plenum filled with universal forces and virtual particles. The observable and measurable world of particles and particle interactions is a subset of this plenum. At the birth of this universe particles and the entire interacting world of particles emerged out of the cosmic plenum, and it is into this plenum that they die back at the final evaporation of galaxy-size black holes (Laszlo, 2008, p.94).

The Hindu seers were on the right track. There is a deeper reality in the cosmos, a reality that is an Akashic field that connects and creates coherence. This field deserves to join science’s G-field (the gravitational field), the EM-field (the electromagnetic field), the Higgs field. And the nuclear and quantum fields as a fundamental feature of the known universe (Laszlo, 2008, p.111).

Laszo’s position seems to be supported by Fiscaletti and Sorli who maintain that, as both quanta and fields are special states of atemporal physical space, the latter is ontologically primary. The universe, they conclude, is an atemporal phenomenon, and the Planck-length quanta of space are its elementary constituents (Fiscaletti).

No one is arguing the essential nature of the “cosmic plenum,” but it is suggested that perhaps there is no justification or need to conflate it with space. The confounding issue is that none of the viewpoints are in themselves wrong or contradictory. It just appears that when lumped together they lead to limiting beliefs and constraints. When descending past the Planck scale, one enters the realm of pure subjectivity and all possibilities.

As already intimated, all of the various approaches seem to get into real trouble when they attempt to explain the five elements in terms of the total of eight mathematical divisions of a bifurcating system. For example, when correlating this level to quantum spin values, we get this outrageously unsatisfactory argument from John Hagelin (discussed in detail later) where with a casual flick of some technical jargon, he simply brushes three inconvenient *prakritis* under the table:

The self-interacting dynamics of consciousness described in the Ved gives rise to several distinct categories of *mandala*, which include the five *tanmatras* or spin types ... in addition to others (*manas*, etc.) which correspond to subjective realities that have little to do with physics below the Planck scale (Hagelin 1983, p.31).

3.3.1 The Gap

Whether one calls it the akashic field, or the zero point energy field, or the vacuum state of the quantum field, the unified field, the quantum foam, or the “basement” of the universe, it has been seen earlier that most theoretical physicists accept the unmanifest

substrate of physical reality not as a true vacuum, but rather a plenum of pure potentiality, bursting with infinite energy, and the nonlocal basis of everything we see (and don't see) around us. The harder, indeed impossible, thing to prove objectively is the congruent, and actual, equivalence of the physical unified field of all the laws of nature, the quantum vacuum, with the pure subjectivity of consciousness, or the simplest form of human awareness. The similarities are compelling, however, and Hagelin has developed a chart that compares the terms of the Lagrangian of the superstring with the repeated experiences of pure consciousness around the world (MVU 1997, p.26). He points out that at their deepest levels, both the intelligence of nature and human intelligence have a unified basis, and that the qualitative correspondence has withstood rigorous scientific scrutiny (Hagelin 1998, p.56/57). The lively interface between the unchanging absolute singularity, whatever we call it, and the seething creativity at the quantum level, the arena of the wave function, is the subject matter of the *taiji* diagram and the eight *bagua* that emerge from it. In the language of the training in the development of consciousness that spawned this research, this lively interface region between objective and subjective reality will be referred to as "the Gap." It is asserted that all manner of technologies of consciousness, such as advanced meditation practices, psychokinetic and remote viewing capabilities, the internal martial arts (e.g. *taijiquan*, which the author has studied and taught for several decades), or any other, even quantum physics, are technologies of manipulating events at the level of the Gap.

In a telephonic discourse to advanced meditation practitioners and students in July of 2007, Maharishi observed that there are four qualities submerging into the Gap and four qualities emerging from the Gap, and further that the quality manifested out of the Gap is determined by the values that collapse into the Gap. This memory aspect seems reminiscent of Sheldrake's "morphic resonance" concept of formative causation (Sheldrake, 2009). Computer scientist Thomas Routt sees the three-in-one (four) values of *rishi* (knower), *devata* (process), *chhandas* (known), and the wholeness value of *samhita* together in the silence at the central point of the Gap (*atyanta-abhava*). He states that "This reality of four emerging and four submerging [qualities] in the fully awake state of self-referral consciousness presents eight values of self-referral Unity Consciousness", (Routt, 2005, p.25). But this mechanism is poorly explained and leaves one wondering how four becomes eight.

To resolve all the unclear explanations and sometimes mutually discordant approaches, Recursive Organizational Dynamics postulates four core elements only. But these four elements have an outward (*yang*, expressed, material) aspect and an inward (*yin*, shadowed, supporting) aspect. This produces a total of eight values (trigrams, *gua* or *prakriti*), each as we have seen, comprising a differing composition of activation of the subject (*rishi*), dynamism (*devata*) and object (*chhandas*) components. Moreover, each trigram is an expression of wholeness, so Routt's three-in-one description is preserved.

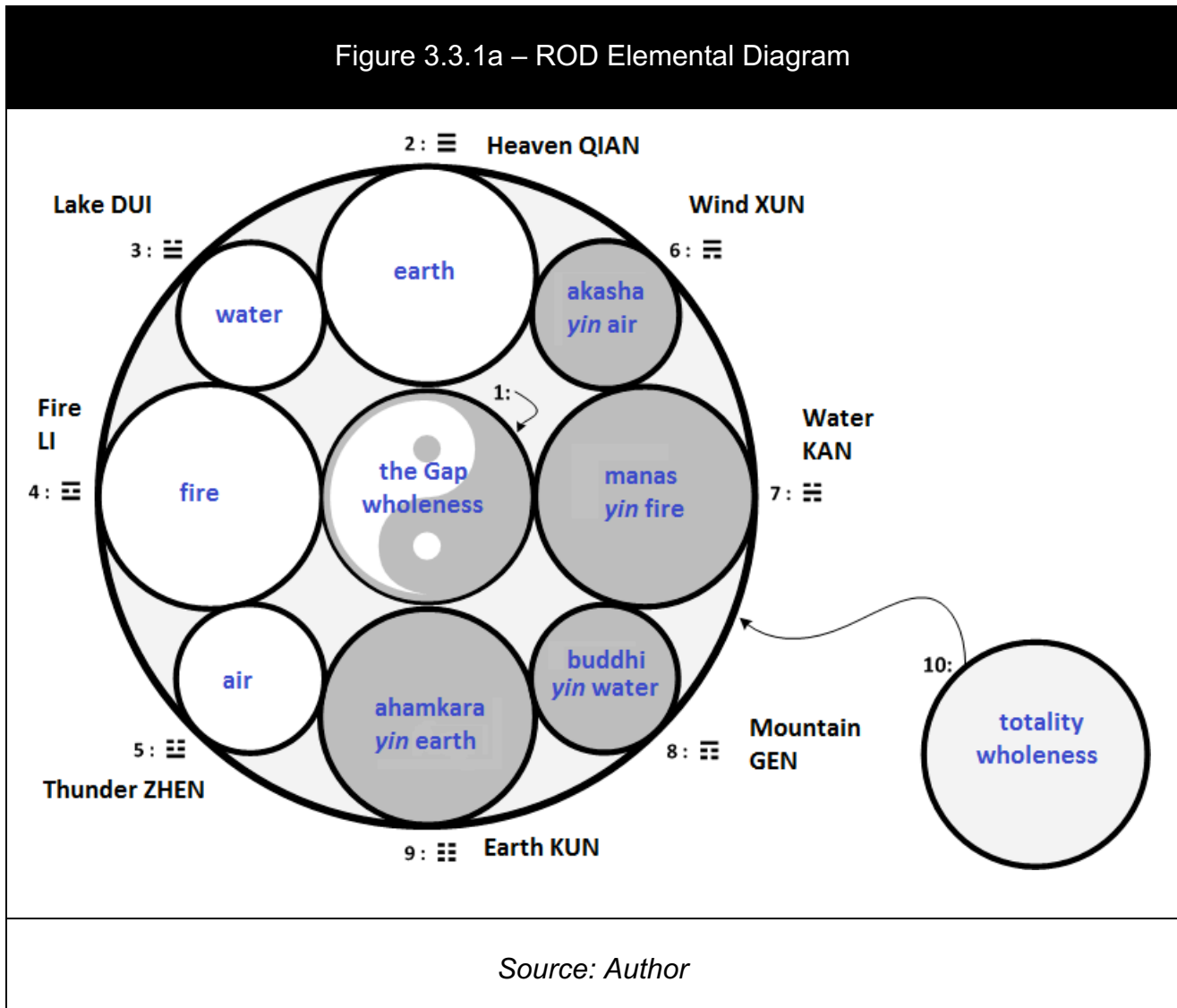
The ROD model stands apart in that it sees four trigrams (*yang*) emerging from the Gap, and four trigrams (*yin*) submerging into the Gap, each of them an expression of three-in-one. At this stage, a new iteration of the ROD diagram must be introduced (Figure 3.3.1a) that adds the elemental qualities. The traditional Chinese names for the trigrams have been included also because they will offer many clues as to how to interpret the symbolism and establish the suitability of any particular elemental assignment. Once again, the *prakriti* have been laid down in the order specified in the Bhagavad Gita, according to their *mandala* assignments by Nader, and in accord with the traditional ordering of the trigrams based upon their sequential mathematical emergence by binary bifurcation, actually simply a binary counter. One of the most striking features of this analysis and subsequent synthesis of cosmologies is the exact correspondence between the *prakriti* sequence as laid out in the Gita and assigned to *mandalas* by Nader under Maharishi's guidance, and trigrams as expression of binary unfoldment and their traditional ordering in the pre-heaven ("*Xian Tian*", that comes with birth) *bagua* sequence. The new ingredient here is the re-interpretation of the *akasha* element and the three others that Hagelin tried to do away with, viz, *manas*/mind, *buddhi*/intellect and *ahamkara*/ego.

It is very easy to understand the outward-facing concepts of earth, water, fire and air as they are part of everyday experience. But how does one understand and express the shadowy, withdrawn values of these same four elemental qualities? How does one envisage their collapse and emergence into and out of the Gap? Obviously there will be

a great deal of apprehension if this Mandarin- and Sanskrit-laden version of the diagram and annotation presented in Figure 3.3.1a is presented to the business community.

And it won't be. At this early stage of developing a theoretical framework, the research is simply tying the concepts back to ontological principles and preparing a platform for building a ROD model with easy-to-understand modern descriptions.

Figure 3.3.1a – ROD Elemental Diagram



Source: Author

Probably the most contradictory element is segment (*mandala*) 2. The Vedic Science-derived assignment is “earth” but the Taoists have called it “Heaven” (*Qian*).

Nonetheless, the disparity is easily resolved by acknowledging the fact that this area is the most outwardly expressed on the bright and creative *yang* half of the *taiji* diagram. All of the subject, process and object lines are in full play at the top. This conveyed to the Chinese of antiquity the idea of a strident heaven. It is important to remember that the *bagua* traditional names and their associated named elements can get encumbered in the subtlety of *yin* versus *yang*. Thus the element earth is the most substantial and expressed feature of the *yang* side – and it corresponds to the most manifest *bagua* quality. Its complementary partner is also earth on the *yin* side (*Kun*), where the *bagua* quality is more receptive and supporting, giving the Taoists the idea of Earth.

Progressing round in the natural order, we come to segment 3. *Dui* means “lake” or “marsh” and the idea of settled water. This is in complete agreement with the elemental allocation. The expressed subject and dynamism lines, coupled with a withdrawn object line suggest the idea of fluid movement without rigidity. The relationships, ideas and sentiments projected by the water element in this *bagua* position will be reviewed later as a template for when the actual ROD model is presented.

Next is *Li* which means “fire” (like the sun) and is also in perfect agreement with the Bhagavad Gita-derived *prakriti* order. The subject (or intention) line and the object (or

attention) lines are expressed, but there is no outward direction or self-directed movement.

In *Zhen* (“thunder” or “quake”) we see a reverberation in the air that startles or incites to action. This gives the idea of air, and the Chinese *wuxing* element associated with this segment is also “wind.” We see that the only line activated is the bottom subject line, which indicates the first impulse of intention and motivation toward manifestation.

Now, maintaining the traditional order of presentation, we move across to the *yin* side of the diagram in *Xun*. The Chinese also associate this *gua* with the wind element. In the trigram glyph there are strong object and dynamism lines, but a withdrawn or unexpressed subject line. This gives the sense of movement within a structure without any will of its own. In this is symbolized space, the 3D void. It is not the source of the *yang*-side qualities, but rather the scaffolding on which and through which the polar opposite *Zhen* is projected. It is the unseen backdrop or geometry of the airy or gaseous quality. ROD names this “*yin* air” and it is the direct equivalent of the concept of *akasha* as space. It is the diametric opposite of *Zhen*, not only in its placement in the diagram, but also in its line composition and subjective flavor. Opposing trigrams have exchanged *yin/yang* (laterally linked) lines in their structure and are called *pangtongua* (Marshall). An idea that will be useful to introduce at this point is that each of the opposing trigrams around the diagram remind one of supersymmetrical partners in theories of quantum supergravity. This is also highly reminiscent of Richard Feynman’s

particle interaction diagrams and his famous contention that, mathematically, a particle is equivalent to its supersymmetric partner (or anti-particle) propagating backwards in time. More precisely, another renowned theoretical physicist, David Bohm, in an extended quote, describes how an entity fleetingly emerges from the Gap and then submerges back into it. He posits a “holomovement” which seems wholly analogous to the Gap as it is portrayed within the ROD *taiji* diagram. He states that:

Of course the Green's function has been derived ultimately from the Cartesian order by solving differential equations. But if we are questioning that this order holds fundamentally (especially at short distances), we may well adopt the point of view that the Green's function is more basic than the differential equation (which latter will only be an approximation). **In this case the order of enfoldment and unfoldment will be fundamental**, while the Cartesian order will have a relatively limited kind of significance.

The process of enfoldment and unfoldment was already well known implicitly in the Huygens' construction. Waves from each point unfold. But at the same time waves from many points are enfolding to give rise to a new wave front. So in the totality, the one process includes both enfoldment and unfoldment. It is only when we focus on a part that we are led to talk of these as distinct. The Huygens' construction is actually the basis of the Feynman graphs which are widely used. To explain the connection, consider waves which start at a point P and arrive at a point Q . In the first interval of time, Dt , a possible path is from P to P^1 , and in the second interval from P^1 to P^2 and so on. Extending this construction, the path eventually arrives at Q . The Huygens' construction implies that the waves that arrive at Q from P are built up of contributions from every possible path. **These paths are the starting point of the well-known Feynman diagrams...**

We may suppose that the universe, which includes the whole of existence, contains not only all the fields that are now known, but also an indefinitely large set of further fields that are unknown and indeed may never be known in their totality. **Recalling that the essential qualities of fields exist only in their movement we propose to call this ground the holomovement** [the Gap, the *taiji* diagram]. **It follows that ultimately**

everything in the explicate order of common experience arises from the holomovement. Whatever persists with a constant form is sustained as the unfoldment of a recurrent and stable pattern which is constantly being renewed by enfoldment and dissolved by unfoldment. When the renewal ceases the form vanishes.

The notion of a permanently extant entity with a given identity, whether this be a particle or anything else, is therefore at best an approximation holding only in suitable limiting cases...

It seems that we have here a simple model of pair production and annihilation. But unlike the representation given in Feynman diagrams, we do not say that anything ‘moves’ backward in the time. Rather it is clear that what is significant here is the order in the degree of implication.

To bring out what this means, let us define an implication parameter, r , of a droplet, which is proportional to the number of times the cylinder has been turned since that droplet was inserted. This implication parameter takes negative values when the cylinder is turned in the opposite direction. What happens in this example is that the implication parameter has a part that increases, another part in which it decreases and a third part in which it increases again. The entire pattern is present at each instant in the whole fluid with varying degrees of implication. All that happens with the passage of time is a change in the implication parameter which may be positive or negative.

What this suggests is that what is called the time coordinate in the Feynman’s approach may actually be the degree of implication. In this interpretation, Feynman diagrams would not refer to actual processes but rather to structures in the implicate order. The meaning of time would have to be something different from r but nevertheless related to it (Bohm & Hiley, 1993, p355-360, emphasis and explication added).

Moving on now to *Kan*, we have another segment that needs a deeper analysis before the symbolism becomes clear. *Kan* is nowadays translated as “water,” but in sharp distinction to the pleasant water of *Dui*, it is in the sense of water rushing downhill, or within a dark defile. The original ideogram portrayed a pit and the idea of danger or

difficulty that could be overcome with the application of discipline (Field, 1999). Dan Hessey in his unpublished commentary on the Yijing calls this *gua* “warriorship.” *Kan* has long been connected with the moon and by association, the mind. The component lines show only an activated process or motion line in the middle. So this gives the idea of pure, unrestricted freedom of movement. The Vedic *prakriti* assigned is *manas* or mind. Mind has no prison and its essential nature is to move and explore the depths of thought. Common idiomatic expressions like “flights of fancy” and “fires of knowledge” or “crossing” or “entering” the mind, or even “narrow-minded” give the idea of mental fire and movement. It is this fundamental nature of the mind to move that is the basis of the class of meditation techniques that strive to reach and encompass the state of pure awareness. The notion of movement is beautifully alluded to in the third century BCE Chinese proverb “*you yu bu jue*” which describes indecisiveness in terms of a monkey continually scrambling up and down a tree (Trapp, 2011, p.84). Thus, this movement is the symbol for mental fire, the subtle fire that burns ignorance. It is “*yin* fire.”

The next stop on the *yin* side is *Gen* (Mountain) and the traditional Yijing symbolism conveys the idea of stopping, restraint or stillness. This is not simply because Mountain is the binary complement (opposite) of Lake or *yang* water on the other side of the diagram. Once again, a brief analysis will quickly tease out the underlying meaning. Sinologist, Thomas Cleary translates, “Illumination comes from following the procedure; illumination, reaching everywhere without becoming defective anywhere, refines the great elixir. But if you want to refine the great elixir, you cannot do so unless you

discern the good and hold fast to it, staying in the proper place", (Cleary, 1986, p.194, emphasis added). The ideogram for the hexagram *Gen* (52, *Gen over Gen*) consists of two parts: an eye (*mu*) at the top with an old form of *bi* ("close by") underneath – symbolizing someone staring (Huang, 1998, p.412). That could give the idea of vigilance. Finally, Wilhelm translates the Yijing image for hexagram 52 as follows: "As a mountain keeps still within itself, thus a wise man does not permit his will to stray beyond his situation", (Wilhelm, 1984, p.104). On the other hand, the Vedic association is *buddhi* (intellect) - which also conveys the idea of discrimination or vigilance. Arriving here from *Kan*, we have been following the *bagua* around in their forward order. But if we consider the *yin* evolution in the reverse order for a moment, the cycle begins in the trigram *Kun* (discussed next, which we will show to be the transcendental source of thought energy). In the same way that the old brain, the limbic system filters the vast majority of extraneous signals from the nervous system in order to provide the higher brain with a workable volume of information, so the job of the intellect is to filter and discriminate through the masses of random or extraneous thoughts to arrive at only the most relevant streams of information for further processing. In this fashion, the **mass** (earth) of data at *Kun* is filtered into the **flow** (water) of information at *Gen*, tempered and proven in the **fire** of knowledge at *Kan*, and given expression in the **air** of wisdom at *Xun*. The intellect is the "watcher at the gate" whose vigilance and discrimination are the basis of effective evaluation of the environment in the clockwise order considered here, and the basis for effective projection of thought in the reverse order beginning in *Kun*. Under this hexagram,

Wilhelm says that “The I Ching [Yijing] presents rest as no more (but no less) than a state of polarity that always posits movement as its complement” (Wilhelm, 1984, p.104). Thus, as the subtle channeling that provides the means for information to flow in a directed stream, and provide the fluid basis for the activity at *Kan*, ROD has assigned this *Gen* segment to *yin* water.

The final trigram to consider is *Kun*, the completely *yin* segment at the bottom representing earth. The meaning of *Kun* is earth, symbolizing the receptive, the supporting, the mother of all. And the Vedic *prakriti* assignment is *ahamkara* or ego. This is the most shadowy element of the “dark” side, the most subtle of the structural components. In terms of our human experience, the concept of ego is the subtle framework on which our entire reality is built. It is the source of who we are, it is the finest quality of cohesion, the link, the quintessential fabric of individuation. This is subtle or *yin* earth. On the level of consciousness, it equates to being outside of the field of the *gunas* (Yuktswar, 1972). This is the mystical experience of transcendence (absorption or *samadhi*). The prime teaching from chapter 2 verse 45 of the Bhagavad Gita states: “The Vedas’ concern is with the three *gunas*. Be without the three *gunas*, O Arjuna, freed from duality, ever firm in purity, independent of possessions, possessed of the Self”, (Maharishi, 1967, p.90). This experience, relinquishing the expression of subject, dynamism and object dimensions in the *Kun* trigram, places the practitioner subjectively at the point of condensing out of the ego at the lintel of the Gap. As our

most intimate mental experience, it is the least excited state of consciousness, the source of the continual font of thoughts that spring up in the mind.

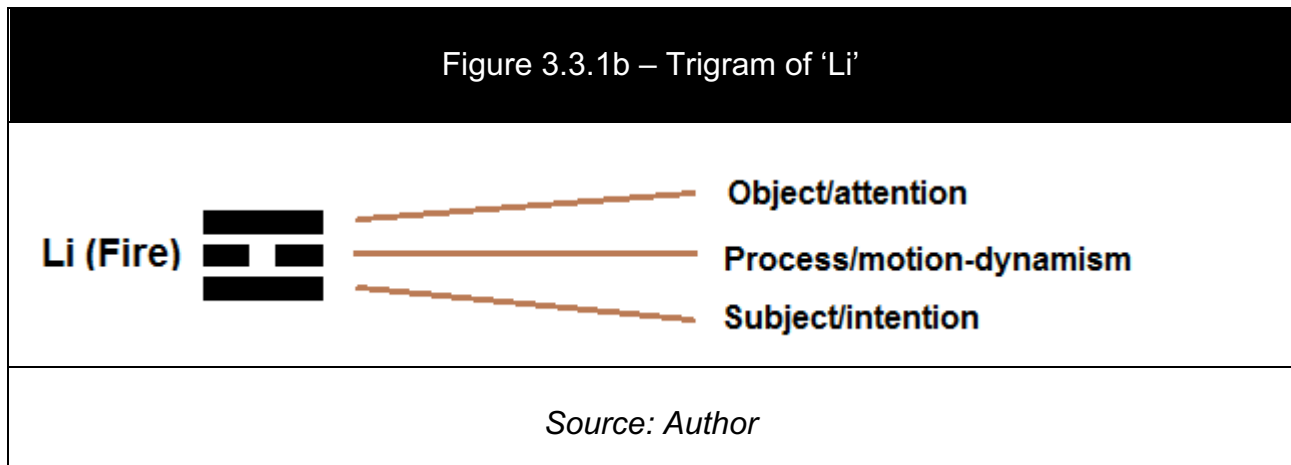
This natural sequence around the *bagua* repeats itself at all levels. The *taiji* diagram is recursive and self-referral. The correlation between Vedic and Taoist approaches is further reinforced by the emphasis on the importance of the natural order of this *bagua* sequence, as exhorted in the other primary imperative of the Gita: “*Yogasta kuru karmani*” (from verse 48 in the same chapter), meaning “Established in Being perform action”, (Alexander et al, p.14). In other words, the sequence is vital for success. Only from the quietude of *Kun*, can we initiate the most successful action in *Zhen*.

ROD underscores the importance of both *yang*, outward, expressive facets, as well as the *yin*, withdrawn or shadowy aspects of reality. But our modern culture puts almost exclusive credence in the *yang* manifestations.

This synthesis of the thinking of Indian and Chinese philosophers of antiquity provides a foundation for examining the deeper energetic implications of the natural order of evolution around the diagram. It is important to remember that the *yin* and *yang* realms are more than just objective and subjective realities respectively, and that *yin and yang* are reflected in both the subjective **and** objective spheres of life. In terms of the physical design of an organizational structure, we are concerned primarily with the objective aspect. In terms of some suggested ways in which those resultant designs can be

proactively managed for more successful relationship dynamics, we will be looking at more subjective values.

In the development of a useful model in a Western business context, the ten *mandalas* will be called segments, “**spheres** [of influence].” This term still conveys the idea of a circle, but contains a sense of three-dimensionality that will be expanded upon later, and also affirms the process-centric notion of a sphere of influence of a particular trigram configuration. “**Trigram**” is a more explicit and less arcane expression than *bagua* – although it retains its heritage of meaning. In an objective context, such as a physical organization design, we have previously noted that the lines will be referred to as **subject** (bottom), **process** (or dynamism, in the middle), and **object** (top). When discussing the mechanism from a subjective technology viewpoint, the subject line will be referred to in terms of “**intention**,” the process line as “**motion**” or “**dynamism**”, and the object line as “**attention**.”



For example, *Li*, with an expressed intention and attention configuration, conveys the idea of apprehending something. Here the matter under consideration is held in mind before moving to fulfill the intention.

The following is a table of terms used in this text from the Vedic and Taoist literature, together with the modern terms that will be utilized within the forthcoming ROD model.

Table 3.3.1c – Comparative Glossary

Vedic (Sanskrit)	Taoist (Mandarin)	Objective	Subjective
<i>Samhita/Brahman</i> (singularity, totality)	<i>Wuj/Dao</i> (primordial wholeness)	Unified Field	Pure Consciousness
<i>Samhita of Rishi, Devata and Chhandas</i>	<i>San Cai He Yi</i> (Wu 2011, pg 51)	Three-in-One	Integrated Awareness
<i>Purusha</i> (consciousness)	(primordial) <i>Yin</i>	Mental/Energy	Intelligence
<i>Paraprakriti</i> (proto-matter)	(primordial) <i>Yang</i>	Material/Matter	Existence
<i>Rishi/Adhyatma</i> (subjectivity)	<i>Tian</i> (heaven)	Subject (knower)	Intention
<i>Devata/Adhidaiva</i> (transformation)	<i>Ren</i> (man)	Process (knowing)	(e)Motion
<i>Chhandas/Adhibhuta</i> (relative creation)	<i>Di</i> (earth)	Object (known)	Attention
<i>Prakriti</i> ([eight] natures)	<i>Bagua</i> (eight symbols)	Sphere (of influence)	Trigram

Source: Author

Note: i) *Samhita* is used figuratively (as are *rishi*, *devata* and *chhandas*);
ii) *Wuji* and *Dao* are not synonymous (*Wuji* being the primordial chaos, void of material relativity) but may be grouped together for the arguments presented here; and
iii) *Brahman* and *Dao* can actually be considered the same and to represent the fullness of One and Three together.

Each sphere position around the diagram has specific importance in terms of the transfer and mutation of energy and influence. It might be useful, during this theoretical framework discussion, to provide a description of the underlying mechanics of manifestation and to make a few observations about implied energy pathways. At this stage only the trigram spheres 2 through 9 will be considered. Inner and outer spheres 1 and 10 are expressions of wholeness (the Gap) whose participation will be discussed further on.

The progression of spheres or stages around the diagram can be run in either direction, and indeed manipulated in many ways. However, the natural sequence of progression is clockwise around the diagram. For discussion, this means starting at sphere #6 in a reflective inward (or infrastructure/support) mode and evolving through the stations until the outward, expressive (or business-facing) cycle begins at sphere #5, finding its culmination in position #2 at the topmost *Qian* (Heaven) location.

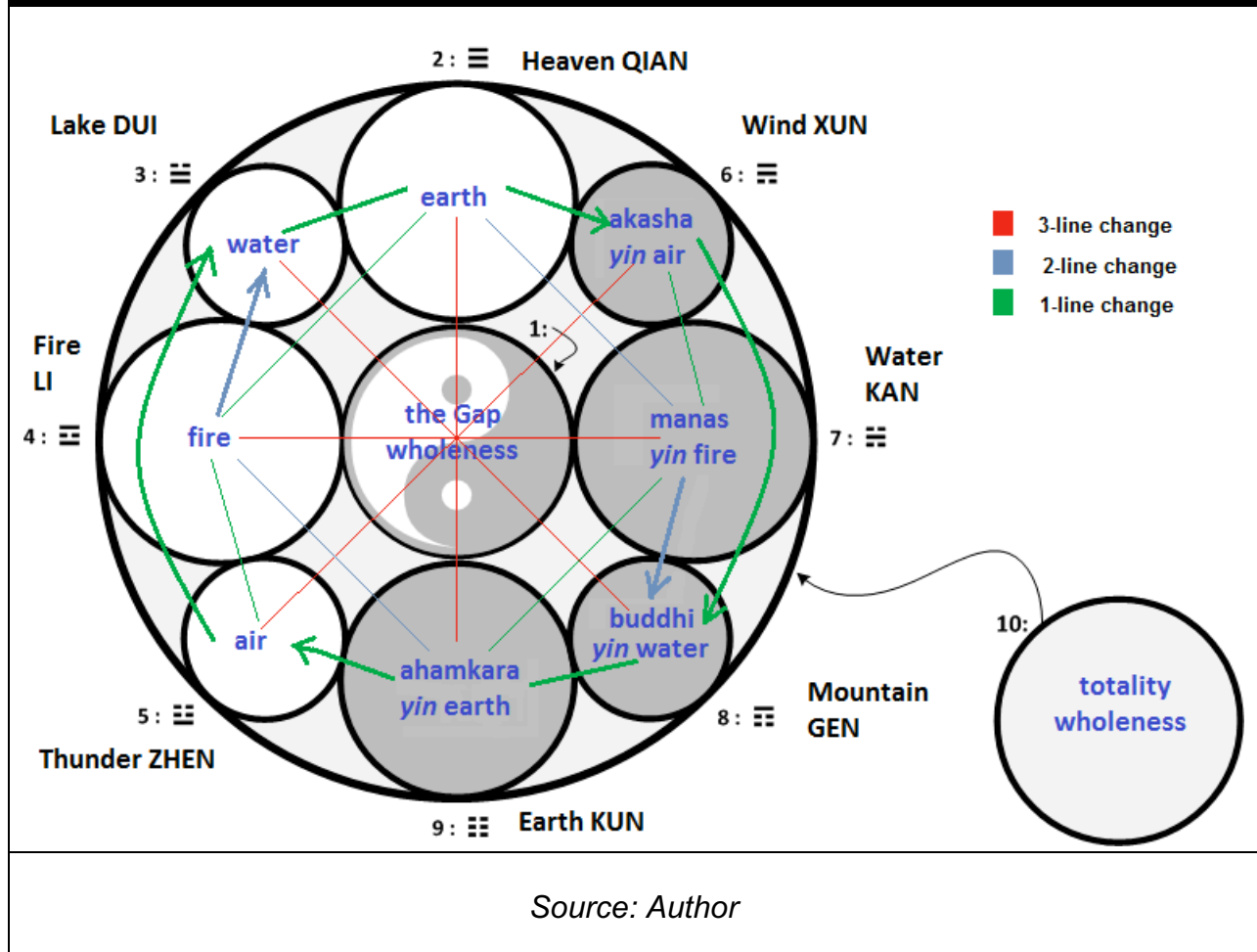
This next section is more speculative in nature, but the theoretical predictions are nonetheless fully borne out empirically both in the outward objective realm and the inner subjective experience. It can be used to illuminate classic teachings of the modification of consciousness and manifestation such as Patanjali's Yoga Sutras. Further support for the theoretical model comes from much of the recent research in human intention, such as the effects of intention on the output of quantum random event generators (REGs), plus the traditional work in probability theory from physicists such as Werner Heisenberg.

In ROD, it is posited that the *yin* or *yang* disposition of any trigram line (subject, process or object) is the quantum statistical summation of Gap-level events in the particular sphere under consideration. Each sphere can be envisaged as a discrete phase space where the subject, process and object dimensions are clustered around a specific configuration of the *yin* and *yang* strange attractors. For example, in the trigram at the Thunder (Zhen) sphere, we see that there is an expressed line in the subject (1st) position, whereas the top two lines are not expressed (i.e. *yin* in the process and object positions).

Statistically, since there is an equal chance of stasis or a line evolving or transmuting into its polar complement, one would expect to see equal numbers of *yin* and *yang* mutations. There are two implications of this: i) that based on statistical energy pathways, one can predict the random likelihood of progression around the diagram

from sphere to sphere; and ii) the focused application of attention or observation on any particular element is quite sufficient to change it into its complementary phase state.

Figure 3.3.1d – ROD Line-Change Energy Gradients



Therefore, ROD presents: i) a means to predict natural process flow; and ii) a means to proactively manipulate the quiescent outcome. Furthermore, such an energy pathway analysis could suggest a statistical basis for the Second Law of Thermodynamics, plus make clear at which point on either side that value could be added to a system, in

apparent defiance of the Second Law. These value-add areas are the specific aspects of a business or other organization that distinguish its activities in the marketplace.

Figure 3.3.1d shows the pathway change cost in mutating from one sphere to another – the easiest being a single line change (green), and the most unlikely being three simultaneous line changes (red). The arrows indicate the direction of natural sequence, but the change pathways can run both ways. The term “sequence” is important here, because it conveys the idea of a cyclic progression. There is the notion of cause and effect: a thrill of intention, followed by action, and then fulfillment. Conversely, the reverse order doesn’t make sense as an ongoing enterprise. We can look back to see how an event came about, but there is a purposeful direction toward manifestation. Thus there is born the idea of time, of before and after. But one must remember that the whole thing is in the final analysis just a pre-manifest subjective construct.

Starting in position #6 (*Xun*), a single line change will bring the system to either position #7 (*Kan*), or to position #8 (*Gen*). And then again, a single line change will result in the system progressing from position #8 (*Gen*), **or** position #7 (*Kan*), to culmination in position #9 (*Kun*). However, in order to get from position #7 (*Kan*) to position #8 (*Gen*) requires a double line change – deactivation of the dynamism line, and then activation of the object line. Therefore, there is less effort to go from 6 to 7, to 9 with a total cost of 2 (or from 6 to 8, to 9, also with a cost of 2), than there is to go through each step of the *yin* phase from 6 to 7 to 8 to 9, with a total change cost of 4.

Similarly, on the *yang* side, starting at position #5 (*Zhen*), there is a double line change cost between position #4 (*Li*) and position #3 (*Dui*). Therefore, there is less effort to go from 5 to 4, to 2 (*Qian*) with a total cost of 2 (or from 5 to 3, to 2, also with a cost of 2), than there is to go through each step of the *yang* phase from 5 to 4 to 3 to 2, with a total change cost of 4.

In addition, it will be noticed that once the culminating points of the *yin* (*Kun*) and *yang* (*Qian*) phases have been achieved, there is a single line change to get into the next cycle (i.e. from *Qian* into *Xun* at the start of the *yin* phase, or from *Kun* to *Zhen* at the beginning of the *yang* phase). Moreover, subjective experience with *taiji* suggests that there may be a small overhead in harnessing the energy of the phase switch. In sharp contrast, there are two paths backwards from either *Qian* or *Kun* with a single line change cost and no overhead – so it is statistically less likely that the system progress to the new cycle rather than slip back to a previous state. This will be important in our analysis of the tendencies toward specific thermodynamic outcomes.

The manner in which living systems manage to maintain themselves at a thermodynamic distance from their surroundings will be investigated in the following section. Rather than being an unlikely exception, it will be seen that life appears whenever and as soon as conditions permit. Nonetheless, it takes an extra energetic investment in order to evolve to new levels of complexity and advance the status quo.

“And doubtless the good stone-work is the older and was wrought in the first building,” said Gimli. “It is ever so with the things that Men begin: there is a frost in Spring, or a blight in Summer, and they fail of their promise.”

“Yet seldom do they fail of their seed,” said Legolas. “And that will lie in the dust and rot to spring up again in times and places unlooked-for. The deeds of Men will outlast us, Gimli.”

“And yet come to naught in the end but might-have-beens, I guess,” said the Dwarf.

- The Return of the King, “The Last Debate” (Tolkien, 1969, p.907)

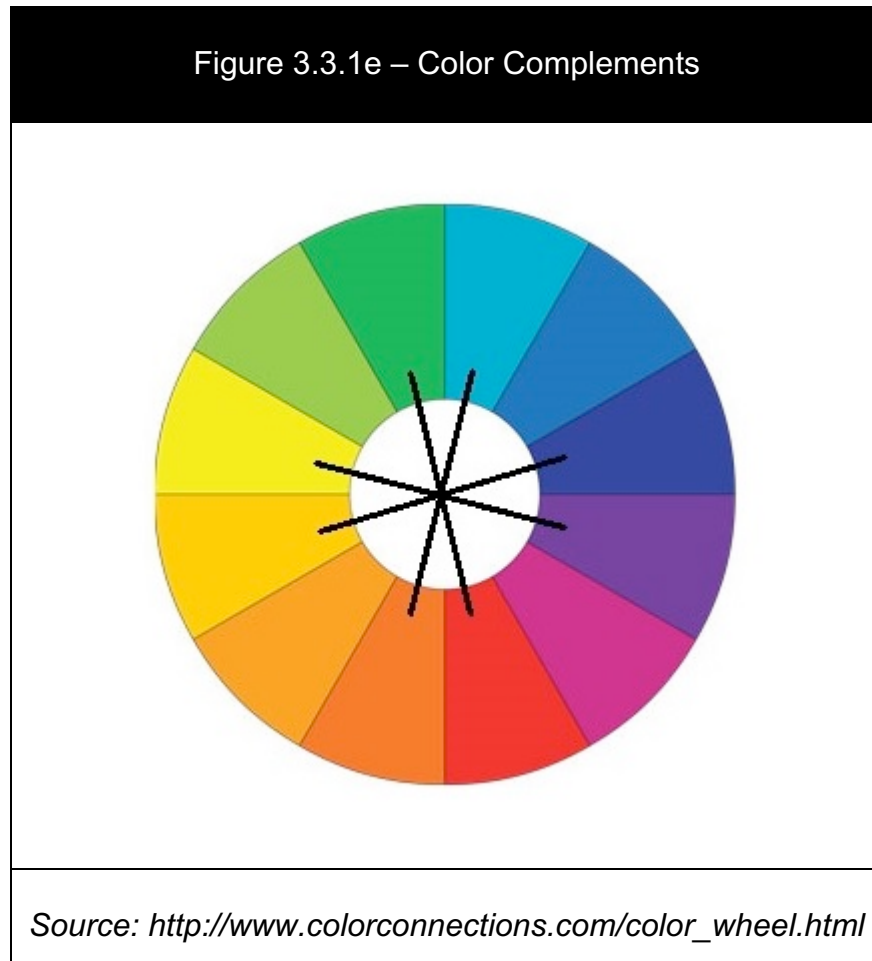
Considering now the *yang* side of the diagram, fulfillment of an action consists of several stages. Firstly there is intention. Without intention, there is no impetus to act. Next there needs to be an objective, a goal to aim at. After that, all that remains is to move purposefully in order to achieve the desired end result. Referring to Figure 3.3.1d, in sphere #5 (*Zhen*), we see **intention** with an activated (*yang*) subject line. Next, in the *Li* sphere we see an activated subject line coupled with an expressed object line. Thus we have intention plus attention. This is **apprehension** of the objective. Next, letting go of the outcome and focusing on getting the job done, we see **motivated action** in *Dui* at sphere #3 with the bottom and center lines in play. Lastly, in *Qian*, when all the lines are expressed, we see the coming together of intention, attention and dynamism in the fulfillment or **manifestation** of the desire/action sequence.

It is possible to have a desire and then move to fulfill it without proper consideration of the task at hand. Likewise, it is possible to have the intention, together with a clear idea of the objective, but still fail to act in a motivated and one-pointed manner. Both require

a minimum of effort, but result in a lackluster achievement. Only when a clear definition of the objective is coupled with unwavering focused action can something exceptional or extraordinary be created that moves the whole environment forward. Only when the full sequence, with its concomitant extra line change cost, is brought to bear on a set of circumstances can a truly quantum evolutionary leap forward be achieved. In this way, the investment required at the *Li-to-Dui* transformation is what leads to phase shifts in complexity and capability. In a business sense, it might be the adding of value at this point in the *yang* cycle that takes a good product to a marketable asset. We will see its effect in each of the forthcoming organizational case studies. It forms the basis of “Vedic Engineering” in the ancient subjective technologies of objective manipulation (mind over matter) put forward by the sage Patanjali, and it is also the foundation of the application of effective technique in the internal martial arts. Similarly, it can be shown that for effective and productive thought, both application of the free-ranging mind (movement, the *fire* of knowledge) plus the vigilant discrimination of the intellect (attention, the controlled *flow* of information) are required. And powerful thought in the *yin* phase is the basis for effective action in the *yang* phase of the evolutionary forward cycle.

In diagram 3.3.1f, the fine connecting lines indicate the 1- (single-line) and 2- (double line) line change pathways that were described above in terms of thermodynamics and evolution pathways. The green fine lines (Heaven-to-Wind and Earth-to-Thunder) were noted as phase transitions where the *yang* reverted to *yin*, and vice versa. It was also noted that the additional energy required in moving from Fire-to-Lake and Water-to-

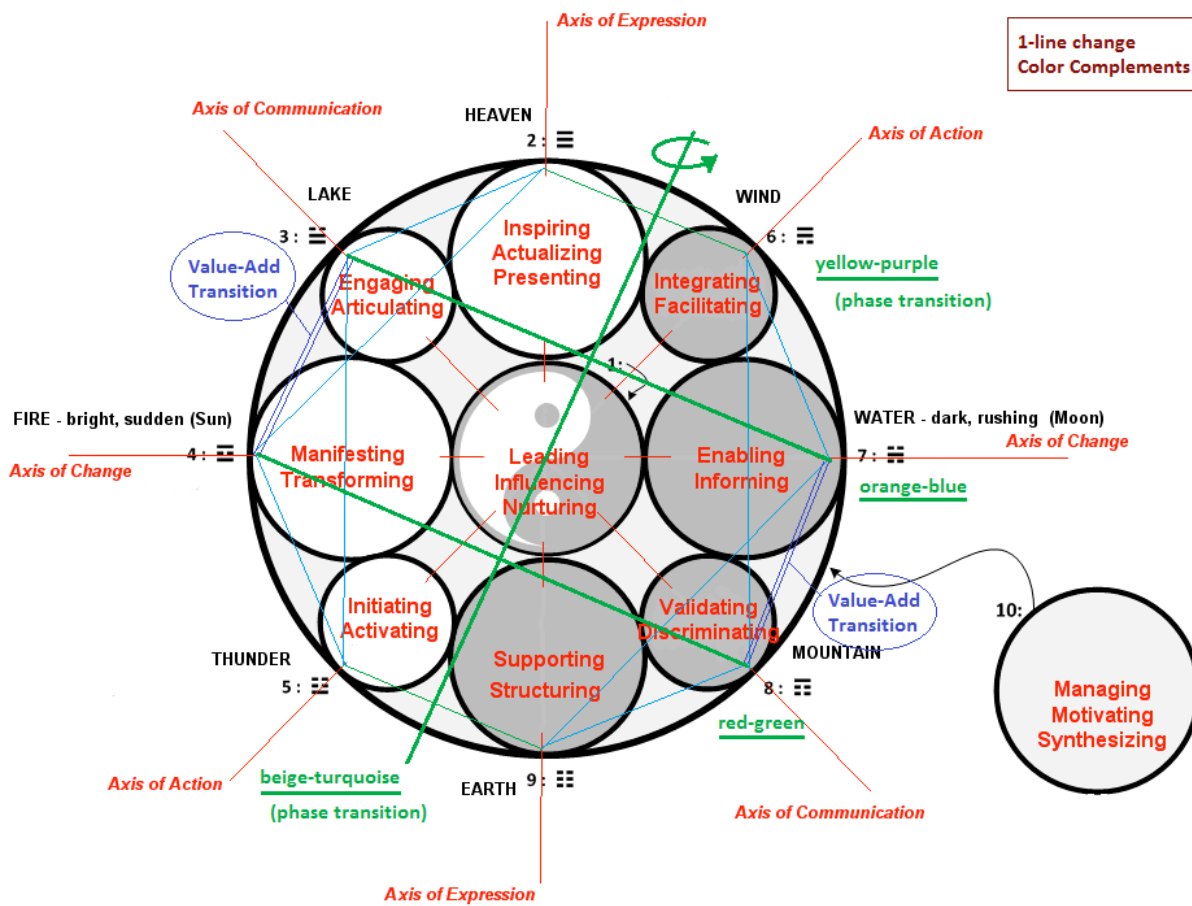
Mountain was the value-adding, evolutionary transaction that moved the state of the art forward. Since a single line change is energetically easier, it was more likely that the system would drift backwards (2nd Law), or else jump forward without completing all the steps producing mediocre results.



However, the bold green lines about the phase-change green axis in 3.3.1f are also single-line change pathways that were omitted from the previous diagram. Both newly noted pathways are still phase changes in the same sense as Heaven-Wind and Earth-Thunder but require a shift in the focal intention line. It is highly significant that using the

Spiral Dynamics color palette (discussed in a ROD context later), the original green connections plus these additional phase transitions result in both the changing of a color to its complement (or opposite) and also elemental antithesis. Complementary colors combine to form black in subtractive mixing, or white in additive mixing (Figure 3.3.1e).

Figure 3.3.1f – ROD Line-Change Color and Elemental Complementarity



Source: Author

As a last step before returning to a review of contemporary thought in the field in relation to this ROD theoretical framework, a final iteration of the ROD diagram is introduced that will present a working template of the symbolism contained within the *bagua* based upon the ancient texts and traditional lore passed down through the millennia. A modern expression of the synthesis of the old ideas and images will be provided as a bridge to the model in an organization design context. Field asserts that the initial purpose of much of his sinological research is a seeking out of the original imagery of antiquity to uncover the modes of thought of that early culture. To do this, he goes back to the most archaic meanings of the ideograms for each of the trigrams, which he summarizes as follows:

Three of the *bagua* images are ominous situations encountered by the people in their lives. [*Zhen*] An **earthquake** [tremor] occurs, but no ritual wine is lost. [*Li*] An **ominous** bird appears, but the villagers ensure the safety of their elders by engaging in ritual drumming. [*Kan*] At a **pitfall**, a ritual of propitiation pacifies an earth spirit. In each case after the sighting of an omen a ceremony is held to ward off the possibility of misfortune.

Three of the *bagua* images are the seemingly unrelated human actions of kneeling (**yielding**) [*Xun*], injuring (**opposing**) [*Gen*], and persuading (**mediating**) [*Dui*]. However, if visualized as actors rather than actions, these images become the important human archetypes of the Yielder, the Resister, and between them, the Mediator.

The last two images, Heaven [*Qian*] and Earth [*Kun*], are philosophical abstractions in the Ten Wings [of the Yijing]. But in hexagram 1 [*Qian*] the Cerulean Dragon ascending the summer sky is the concrete image of pure *yang* energy. In the period preceding the tradition that spawned the Yijing, it is likely that the Dragon--if not Heaven itself-- was worshipped.

Unfortunately, in hexagram 2 the [*Kun*] there is no equivalent image of the pure *yin* element, although we may speculate that *kun* represents the altar

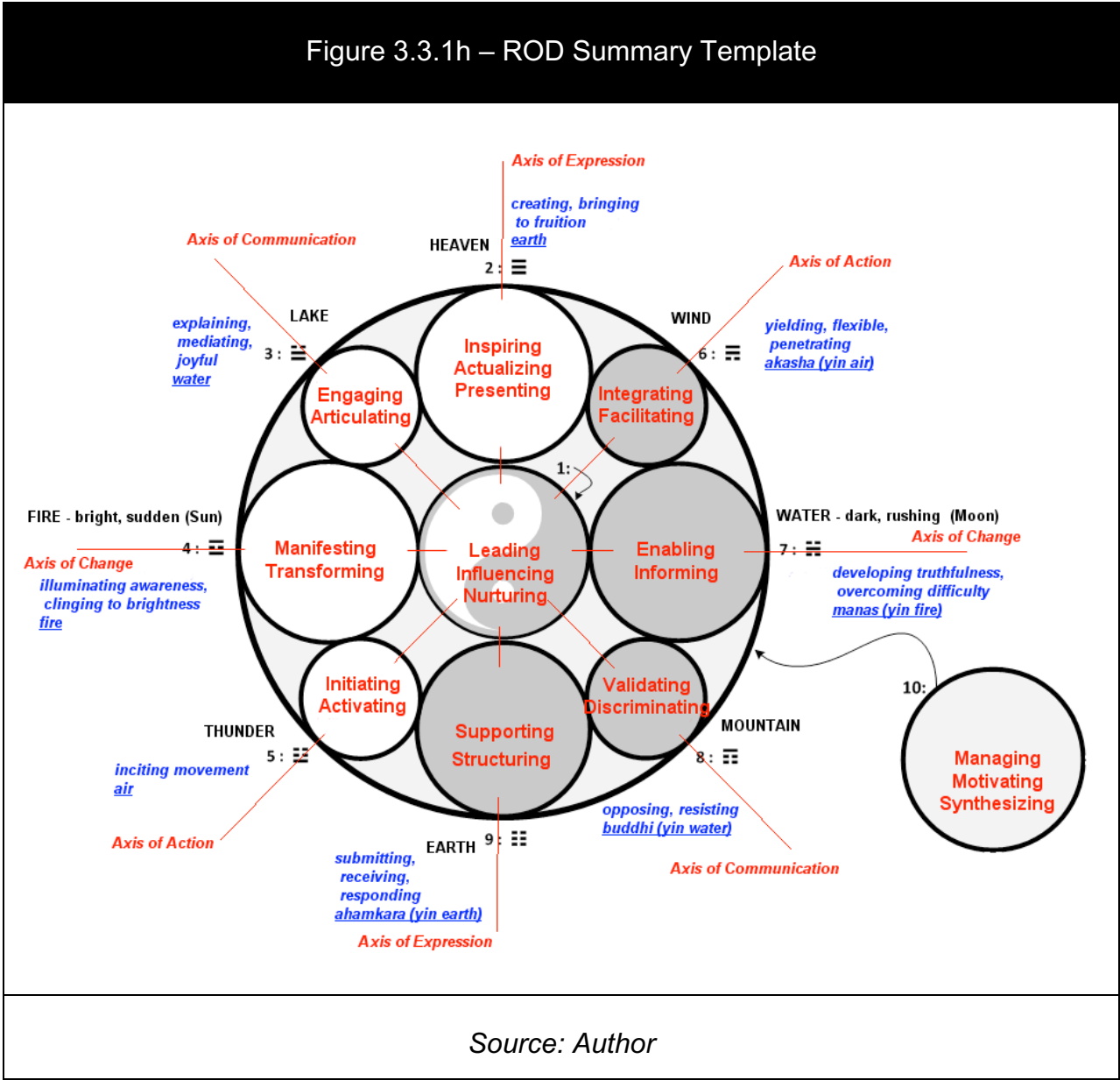
of the Earth God or a clod of that sacred earth (Field, 1999, emphasis and *bagua* added).

The following table (Table 3.3.1g) indicates the qualities attached to the *bagua* as described by important Western scholars and translators of the Yijing. Using such descriptions, and many others, in conjunction with the original meanings of the ideograms as they have been passed down, the ROD qualities template was developed as shown in Figure 3.3.1h.

Table 3.3.1g – Trigram Qualities

Author/ Translator	Citation Reference	Qian - Heaven	Dui - Lake	Li – Fire	Zhen - Thunder	Xun - Wind	Kan – Water	Gen - Mountain	Kun - Earth
James Legge	Van Over, pg 21	Creative	Pleased satisfaction	Brightness, beauty	Movement	Gentle, penetration	Danger	Arresting progress	Receptive
Richard Wilhelm	Wilhelm, pg ix	Strong, active	Joyousness	Clarity, clinging	Inciting movement	Penetrating, enduring	Dangerous	Resting, calm, firm	Devoted, yielding
Alfred Huang	Huang, contents	Initiating	Joyful	Brightness	Taking action	Proceeding humbly	Darkness	Keeping still	Responding
Thomas Cleary	Cleary 1992	Creative	Pleasing	Fire	Thunder	Conformity	Constant pitfalls	Mountains	Receptive
Wang Bi (Lynn)	Lynn, pg 123	Pure Yang	Joy	Cohesion	Quake	Compliance	Water hole	Restraint	Pure Yin
Margaret Pearson	Pearson, contents	Creative	Joy	Net	Thunder	Calculation, choosing	Abyss	Stillness	Receptive

Source: Author



The red qualities are a generalizing compilation of the traditional Yijing-based characteristics shown in blue in Figure 3.3.1h. A sense of the general import and thematic characteristics of the symbolism is vital in performing a ROD analysis of an organization or department. The same functional title across two organizations could not

only mean different job content (or not), but more importantly with regard to Recursive Organizational Dynamics, it could serve completely different objectives within the corporate culture.

For example, finance is usually considered a support function with fairly standard and well-understood inputs and outputs. But in one organization it could be culturally understood as a more business-facing means of facilitating the company's main operational mandate, whereas in another organization it could be viewed more as a back-office policing or validating facility. Although in terms both of activities and deployed skills, the two departments perform essentially the same tasks, ROD analysis might well assign them to completely different spheres because of their energetic contribution and relationship to the whole. In terms of corporate culture, it will be essential to staff not only in terms of skill sets, but even more so in accord with evolutionary flow within the ROD diagram, which is posited in this research to reflect the basic values culture of the organization and resultant inherent mechanics of natural law.

The characterizing configuration of the *xiantian* layout of the diagram is that the trigrams and their complements are polar opposites. Thus, in concert with their common elemental affinity, each pair has a related outward (*yang*) versus inward (*yin*) symbolism. They therefore form axes of influence pivoting around the central fulcrum, and are the line structure inverse of one another (*pangtonggua*).

The final framework consideration is the roles of spheres 1 and 10, the innermost and circumscribing circles. These are the inward-facing and outward-facing attributes of management. The inner circle could be considered the energetic source of the eight *bagua* spheres. It has a strategic leadership and nurturing nature. Conversely, the outer all-inclusive sphere is more akin to the group collective of the other eight and would be associated with project and tactical management and group cohesion.

From a traditional Eastern mystical point of view, sphere #1 is the individual Self or *Atman* in Vedic terms, and it could be equated to the Chinese *wuji*. On the other hand, sphere #10 is a reflection of group consciousness and could be interpreted as *Brahman* in Vedic terms, or *Dao* in Taoist parlance.

Again, it must be emphasized that the processes are recursive and self-similar. This means that the methodology can be applied at any level or departmental or divisional subset of an organization. For this reason, sphere #1 might be considered overarching management at the enterprise level, whereas the outer sphere #10 influence might be seen as the local group management. It would depend upon the culture of the target organization as to the flavor of group management at the sphere #1 level.

This concludes the initial development of a theoretical framework. The following section is a review of the possible correlation or impact of ROD on other modern approaches to living systems research.

3.4 Thermodynamics

No consideration of living systems will be complete without reviewing the impact of thermodynamics. A clear feature of highly evolved systems is their ability to maintain a thermodynamic distance from the environment, and thus impose their own will and order on the enterprise (Daly, 2004, p.68). The laws of thermodynamics are the basal construct of all modern Western science. But one is required to accept them *prima facie*, “as is.” They cannot, until now perhaps, be proven without the adoption of other laws. Rod Swenson of the University of Connecticut’s Center for the Ecological Study of Perception and Action states:

The first and second laws of thermodynamics are not ordinary laws of physics. Because the first law, the law of energy conservation, in effect, unifies all real-world processes, it is thus a law on which all other laws depend. In more technical terms, it expresses the time-translation symmetry of the laws of physics themselves. With respect to the second law, Eddington (1929) has argued that it holds the supreme position among all the laws of nature because it not only governs the ordinary laws of physics but the first law as well. If the first law expresses the underlying symmetry principle of the natural world (that which remains the same) the second law expresses the broken symmetry (that which changes). It is with the second law that a basic nomological understanding of end-directedness, and time itself, the ordinary experience of then and now, of the flow of things, came into the world. The search for a conserved quantity and active principle is found as early as the work of Thales and the Milesian physicists (c. 630-524 B.C.) and is thus co-existent with the beginnings of recorded science, although it is Heraclitus (c. 536 B.C.) with his insistence on the relation between persistence and change who could well be argued to hold the top position among the earliest progenitors of the field that would become thermodynamics. Of modern scholars it was Leibniz who first argued that there must be something which is conserved (later the first law) and something which changes (later the second law). (Swenson)

The Second Law, stated in terms of entropy (disorder, dissipated potential), says:

... the second law states that all natural processes proceed so as to maximize the entropy (or equivalently minimize or dissipate the potential), while energy, at the same time is entirely conserved. The balance equation of the second law, expressed as $\Delta S > 0$, says that **in all real world processes entropy always increases** (literally "the change in entropy is greater than zero").

In Clausius' (1865) words, the two laws thus became: "The energy of the world remains constant. The entropy of the world strives to a maximum," and with this understanding, in sharp contrast to the "dead" mechanical world of Descartes and Newton, the nomological basis for a world that is instead active, and end-directed was identified. Entropy maximization as Planck first recognized provides a final cause, in Aristotle's typology, of all natural processes, "the end to which everything strives and which everything serves" or "the end of every motive or generative process" (Bunge, 1979). (Swenson, emphasis added)

Swenson goes on to note that although the possibility of end-directed behavior was permitted with this framing of the second law, it doesn't seem to properly explain evolution in biology and psychology, and argues:

[T]he active, end-directed striving of living things in general (Descartes had limited the active part of the world to human minds) could not be adequately described or accounted for as part of a dead, reversible, mechanical world, Kant promoted a second major dualism, the dualism between physics and biology, or between the active striving of living things and their dead physical environments. The Cartesian-Kantian dualistic tradition was built into evolutionary theory with the ascendancy of Darwinism where physics was given no role to play and "organisms and environments were totally separated" (Lewontin, 1992). (Swenson)

A living system, and for the purposes of this research an organization, can be defined as an entity that is able to maintain itself at a thermodynamic distance from its environment.

Rather than being a hugely statistically unlikely event, order (life) tends to arise as soon as the environmental conditions permit. Swenson states that, "The urgency towards existence expressed in the fecundity principle is seen in the evolutionary record writ large, opposite on both counts with respect to the second law of thermodynamics as a law of disorder." (Swenson) He goes on to note:

The problem was partly put aside in the middle of this century when Bertalanffy (e.g., 1952) showed that "spontaneous order...can appear in [open] systems" (systems with energy flows running through them) by virtue of their ability to build their order by dissipating potentials in their environments. Along the same lines, pointing to the balance equation of the second law, Schrödinger (1945) popularized the idea of living things as a streams of order which like flames are permitted to exist away from equilibrium because they feed off "negentropy" (potentials) in their environments. These ideas were further popularized by Prigogine (e.g., 1978) who called such systems "dissipative structures." (Swenson)

So Swenson attempts to solve the difficulty by introducing the Law of Maximum Entropy Production in order to make the Second Law fit the common experience around us:

The crucial final piece to the puzzle that provides the nomological basis for spontaneous order production, for dissolving the postulates of incommensurability between physics and psychology and physics and biology, between thermodynamics and evolution, is the answer to a question that classical thermodynamics never asked. The classical statement of the second law says that entropy will be maximized, or potentials minimized, but it does not ask or answer the question of which out of available paths a system will take to accomplish this end. The answer to the question is that the system will select the path or assembly of paths out of otherwise available paths that minimizes the potential or maximizes the entropy at the fastest rate given the constraints. This is a statement of the law of maximum entropy production the physical selection principle that provides the nomological explanation, as will be

seen below, for why the world is in the order production business (Swenson, 1988, 1991, 1992, 1995; Swenson & Turvey, 1991).

Note that the law of maximum entropy production is in addition to the second law. The second law says only that entropy is maximized while the law of maximum entropy production says it is maximized (potentials minimized) at the fastest rate given the constraints. Like the active nature of the second law, the law of maximum entropy production is intuitively easy to grasp and empirically demonstrate. (Swenson)

Looking back again now at Figure 3.3.1d, and armed with the foregoing theoretical framework discussion of line change costs and sequence direction, it can be seen that Recursive Organizational Dynamics provides a phenomenological framework for the Second Law of Thermodynamics, without the need to invoke additional Laws of Maximum Entropy Production, on the simple basis of the statistical aggregate likely line change behavior. Left to itself, a system will be more likely to stagnate within its current *yin/yang* phase scenario than progress forward across the *yin/yang* boundary. But provided with the requisite amount of jump energy, the cycle is increasingly statistically likely to continue against the background of thermodynamic inertia. In addition, because living systems have a purposeful inclination toward the natural evolutionary cycle (otherwise they would not succeed by natural selection), with its implied idea of sequence, they tend to propagate forwards in time. The application of additionally available energy allows for a quantum shift forward at the add-value points of *Li* and *Kan*. It is interesting to note in passing that Taoist spiritual practice is centered upon *Kan-Li* energy manipulation and accumulation techniques also (e.g. Chia, p.C-17).

**CHAPTER FOUR -
BLENDED ACTION
RESEARCH**

BLENDED ACTION RESEARCH

4.1 Building the Model

Harkening back to his experiences as a WWII combat airman, the author's father was wont to say that there are two kinds of men: fighter pilots and bomber pilots. Technology has rendered the allegory obsolete, but it still remains a succinct description of the flavor of personalities across the *yin/yang* divide around the ROD diagram when it comes to organizational staffing and process profiles.

The fighter squadron inhabits the flamboyant, outgoing and customer-facing *yang* end of the diagram, whereas the solid, largely unsung bomber contingent hangs out in the *yin* back-room support side. Each group has a certain level of discomfort with the other in close quarters, but it is important to remember that in the final analysis, both groups are equally important and vital to the survival of the whole.

Mostly, the ROD analysis is not difficult. Some of it is intuitively obvious. Nonetheless, it forces one to think about the enterprise and its core objectives very deeply. One needs to go through the exercise of thinking about essential processes and relationships, not from habit, knowing empirically "what works," or based upon corporate culture or history, but from reviewing activities from the point of view of compliance with nature's policy parameters (discussed in the introductory chapter). This is a most valuable exercise because, as previously noted, the same job function and duties in one

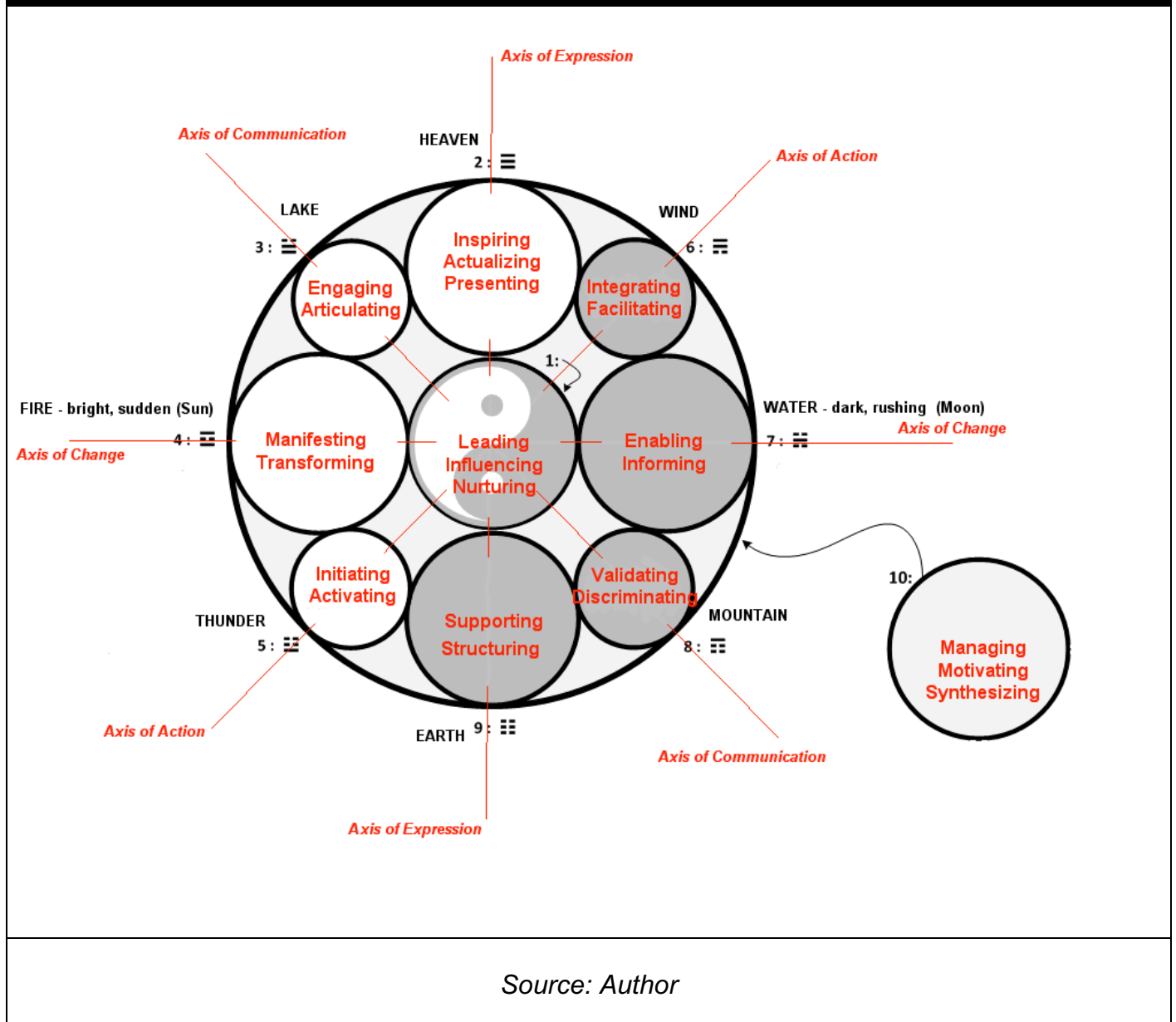
organization might serve a completely different energetic purpose in another. Capra (2010) notes that:

In human organizations, emergent solutions are created within the context of a particular organizational culture, and generally cannot be transferred to another organization with a different culture. This tends to be a big problem for business leaders who, naturally, are very keen on replicating successful organizational change. What they tend to do is replicate a new structure that has been successful without transferring the tacit knowledge and context of meaning from which the new structure emerged.

Best practice guides admonish to guard against creating the impossible job. Why does a brilliant graduate computer scientist never seem to get the job done to the customer's satisfaction and his code often needs to be rewritten by a talented implant from the business who has no formal programming background? When an industrial engineer has such vision into a stubborn process and her ideas make such an impact, why are her supporting data marts so poorly written? Peter Drucker's first rule of staffing states:

[The effective executive is] forever on guard against the "impossible" job, the job that simply is not for normal human beings. Such jobs are common. They usually look exceedingly logical on paper. But they cannot be filled. One man of proven performance capacity after the other is tried — and none does well. Six months or a year later, the job has defeated them. Almost always such a job was first created to accommodate an unusual man tailored to his idiosyncrasies. It usually calls for a mixture of temperaments that is rarely found in one person. Individuals can acquire very divergent kinds of knowledge and highly disparate skills. But they cannot change their temperaments. A job that calls for disparate temperaments becomes an "undoable" job, a man-killer. The rule is simple: Any job that has defeated two or three men in succession, even though each had performed well in his previous assignments, must be assumed unfit for human beings. It must be redesigned (Drucker, 1967).

Figure 4.1a – ROD Cued Operational Template



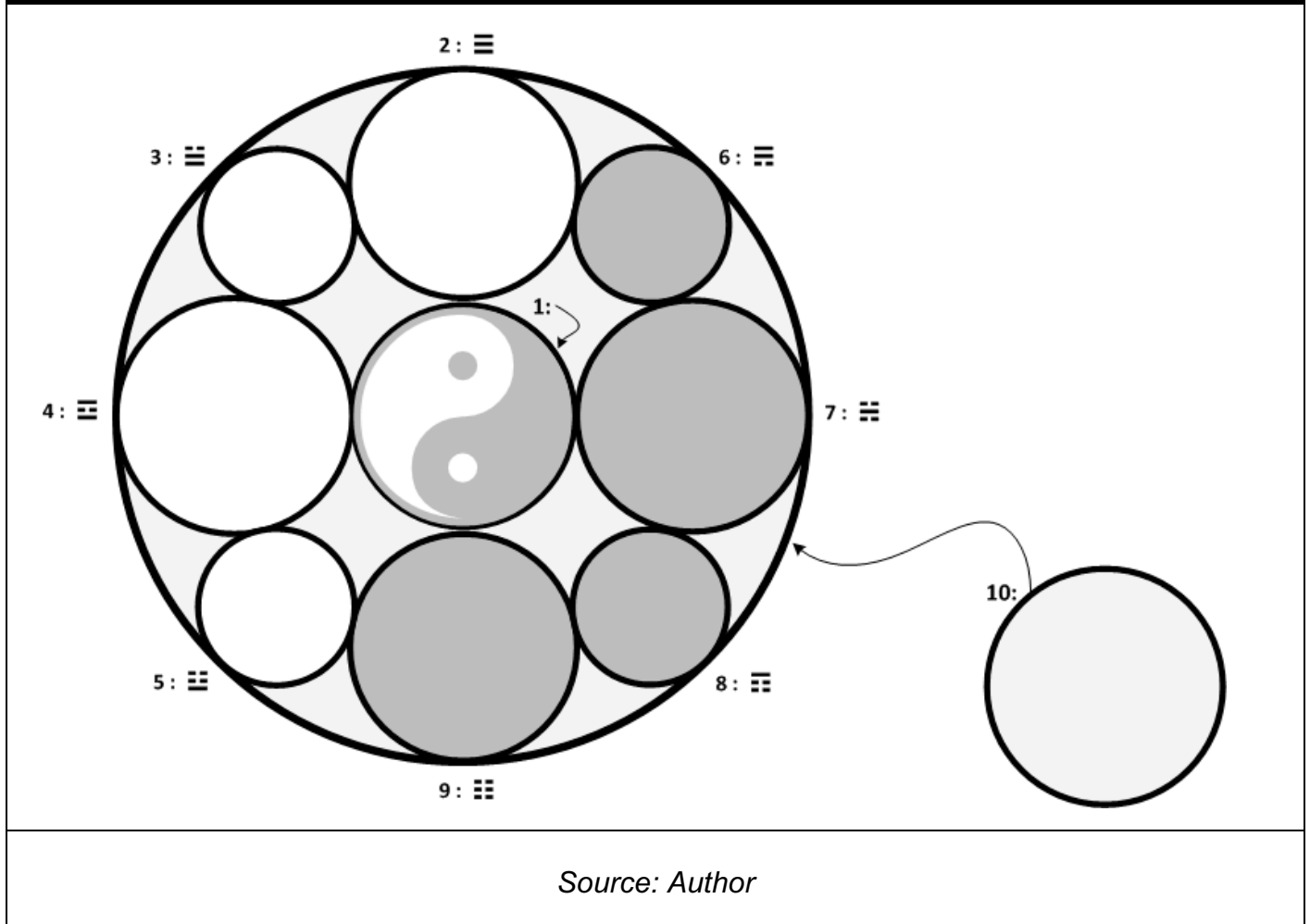
By definition, a ROD analysis specifically addresses this type of situation. Moreover, the analysis will help ensure that the position candidate has a personality profile that will

be concordant within the group, communication pathways are well understood, and that expectations are set appropriately.

Recalling the final rendition of the ROD diagram from the theoretical framework (Figure 3.3h), a simplified version is now presented that can be used as an analyst's reference guide (Figure 4.1a), plus the blank ROD template (Figure 4.1b) that will be used to develop a model for a Business Intelligence (BI) group. Gone are the blue descriptive images from the Yijing that were used to generate the framework, and missing also are the elemental assignments. Those items were critical in establishing theoretical congruency and for providing a contextual backdrop that helped in arriving at the red descriptive pointers. But they are somewhat arcane and serve no purpose in the field of application. However, the red descriptive attributes remain, plus the black trigram names and glyphs.

The trigram names (in English) for each sphere of influence provide a good memory-jogging referential symbolism for the areas they govern. And the glyphs remain in the final template also because if viewed without any cultural baggage, they are simply on/off digital stop-lighting. They are immediately obvious visual indicators for the status of subject (bottom line), process, and object (top line) characteristics of the sphere under consideration.

Figure 4.1b – ROD Blank Template



Source: Author

As previously stated, whether or not the subject/process/object order postulate at the core of ROD is accepted, the glyphs have been co-opted from the Taoist literature because of their elegant simplicity. On account of their existing widespread use, they are also easily accessible for documentation through Unicode 2630 through 2637. For example, for Heaven in a Windows document, entering 2630+<Alt>X produces ☰.

The research will be drawing on 33 years of executive and technical leadership experience in the BI arena. Validation of the analysis will be drawn from the official prospectus and exam preparation documentation published by The Data Warehousing Institute (TDWI) for applicants seeking certification (TDWI, 2007, p.7-19). The CBIP (Certified Business Intelligence Professional) credential is considered the premier professional certification within the field.

When performing a ROD analysis it is always easiest to examine the target organization (business, work group, division, etc) starting with the cardinal (large) circles first. This would include the inner and outer management spheres. This analysis will begin at the top of the template.

The Heaven sphere (☰) is the primary customer, or business-facing, leadership role. Senge (1999) notes that: “some research suggests that a defining characteristic of a successful team is that it is effective at managing its boundaries with the large organization.”

In a BI context, this research calls this role the "Business Advocate." It is the 100% *yang* position. This person (or group) is the principal interface between business stakeholders and the BI organization. He understands the business culture, represents the business within BI, liaises with business management, and chairs presentations and meetings with the business. This guy is a mover and shaker, a big-picture guy, and an extrovert

(or comfortable playing one). At heart, he is a salesman and is the archetypal fighter pilot. This is a tactical management role and is usually closely associated with project management in the BI arena.

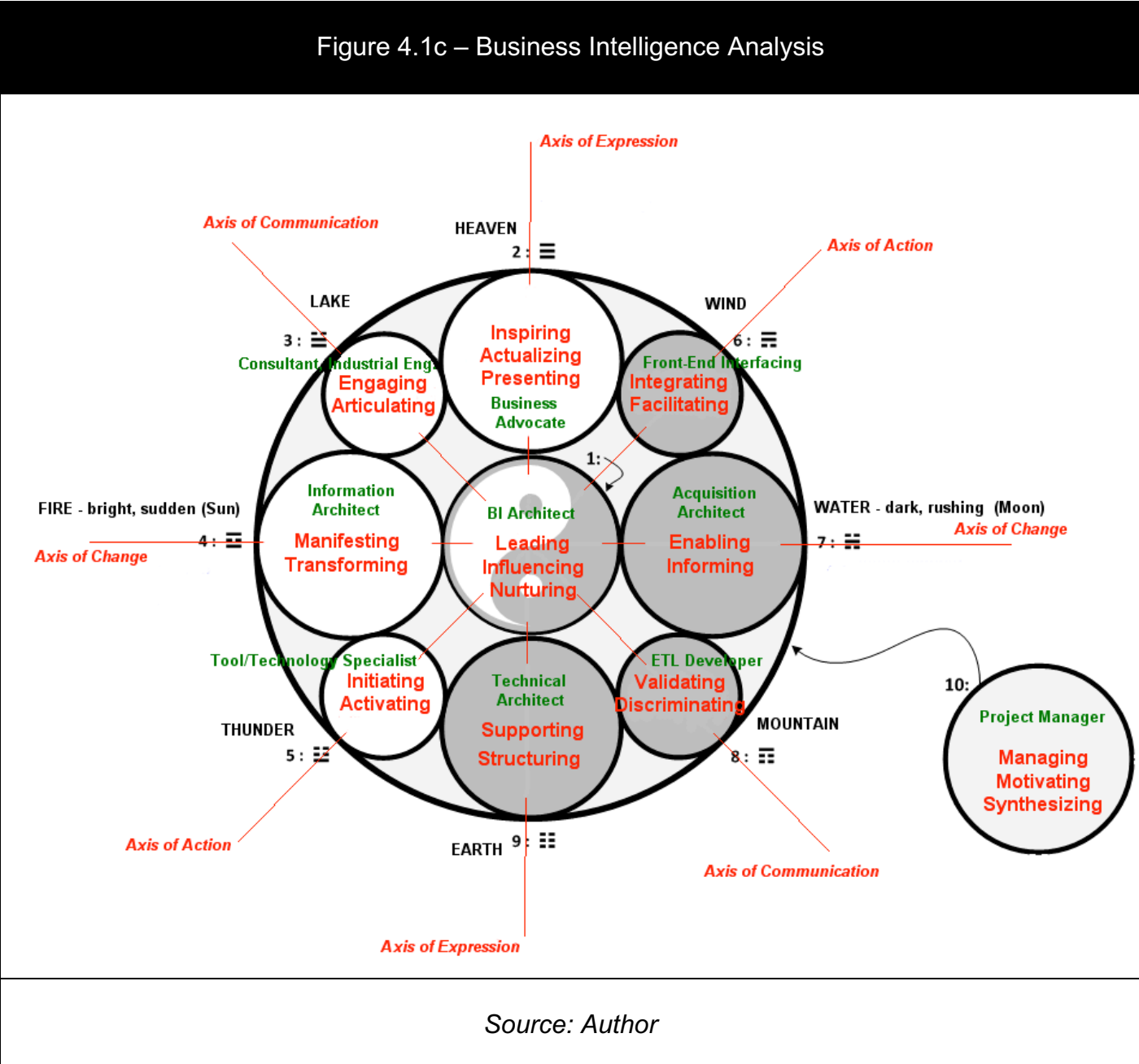
Moving on 90° clockwise, the next point to consider is Water (☵). This is the realm of data modeling, metadata and integration. Here we find the Data or Acquisition Architect. The project engaged by the Business Advocate needs to have data sources determined and an information structure designed that will support all the business requirements. It is predominantly a back-end function driven by and following the lead of the business (therefore the leading subject line is not expressed), and there is no concrete output that the business could utilize (withdrawn object line indicating an infrastructural element). But we see an enlivened process line which is indicative of action to enable a process or system. This location is the chief enabling function within the group.

Figure 4.1c shows a suggested BI configuration. The guide template is used (instead of the blank) for illustrative purposes. It might look cluttered but facilitates the role/attribute associations for this exercise.

At this stage, it will be useful to reiterate that the ROD structure is recursive. It is self-similar and is seen repeated like a fractal at every level of life and structure. Therefore, each of the spheres that are being investigated could be a self-contained diagram in itself. A large entity might have many individuals within each section and we would find the Heaven (and every other) value within the overall Data Architect (Water) subgroup,

and so on. Conversely, within a small group, some players might wear several hats and be required to manifest the different location qualities within themselves. In this case, beware of designing the impossible job.

Figure 4.1c – Business Intelligence Analysis



Source: Author

Moving on down to the Earth (☷) point, one comes to the infrastructural headquarters, as it were. We have arrived at the fullest aspect of *yin* and are completely within bomber pilot territory. Here we find the back-end scaffolding that supports the entire operation. This location manages the servers, the databases, all the hardware, operating system and application software required to take the data design produced at the Water point and provide it a platform for being usable in the emergent *yang* side of the diagram. This is the realm of the Technical Architect. It is the IT-facing aspect of the BI group and is the connection to the Information Technology departments in the organization.

The final cardinal position is Fire (☲). It is the *yang* fulcrum point opposite Water. In the BI context it is the sphere where the supporting structure created at the Water point is transformed into a useful system design. This is the station of the Information Architect whose job it is to turn raw data into actionable information that finds its completion and fulfillment when the cycle comes back full circle to Heaven as a deployed application.

In summary, the top and bottom spheres (Heaven and Earth) are the primary interfaces to the organization or environment at large, and the left and right spheres (Fire and Water) are the primary agents of change within the group.

It is time now to consider the inner and outer management areas, spheres #1 and #10. In the BI domain these two items are rather easy to assign. It will be recalled that the

inner circle concerns a more inward, concentrated, seed form of the domain that could be considered to give birth to the others while remaining self-sufficient unto itself. It supplies what Maharishi would have called that “mother is at home” sense of integral comfort to the group. It is essentially a nurturing or, in BI terms, a consulting role. It is the position of the Business Intelligence Architect, the technical leadership position. The central sphere is a strategic role with a “dotted-line” relationship to the other spheres, and one that works in concert with, and probably for, the outer sphere.

The outer, all-encompassing sphere is the supervisory management arena. It is both a strategic and a tactical role, coordinating and motivating, and in the BI example would correspond to the Project Manager and/or overall group line manager or BI Director.

Now it is time to discuss the corners. The corners are vital. They are where value is added in the enterprise. But when staffing a unit, or designing its unique process structure, one works from the cardinal supervisory points first - followed by the inner and outer management circles. In a small operation, where there are fewer people than ROD roles, then it may be necessary to relax a little on the process refinements and accept the attendant risk. The risk is somewhat ameliorated by the reduction in moving parts. Once again, by working within a template structure and adhering to the ROD “policy parameters,” it will be possible to proactively manage the details without adversely impacting the whole.

Beginning once again in the *yin* phase at the top-right location of Wind (☱), this sphere gives the idea of integrating, embracing, facilitating, and getting to the heart of the matter. In this position one finds the folks responsible for Front-End Integration, user interfaces, OLAP development, and requirements gathering. It could be seen as the glue between the *yang* business-facing side and the *yin* supporting centers, and encompasses all those functions that facilitate user and application integration. In the glyph we see strong lines in the object and process places, but a withdrawn subject line, which suggests involvement with the business people, an active but supporting role. After a data model has been developed at the cardinal Water point, the analysis moves on to the Mountain (☶) sphere. This is the area concerned with actualizing or solidifying the model into a database or other file structure. There is an expressed object line in the glyph, but no self-directed process line. The overarching qualities are validating, discriminating and vigilance. Here one finds the ETL Developer, for example. Also included in this area would be standards maintenance, change control management, as well as communication channels with any software or hardware vendors' support teams.

In the bottom-left corner, at the very start of the *yang* cycle, is found Thunder (☳). This area provides the initial impetus for manifesting the data stored in the infrastructure at Earth. It is where the “rubber hits the road” in terms of application coding. This is the storehouse of coding techniques and expertise. This is seen as the domain of the Tool or Technology specialist, the home of the actual application programmer.

Already from this analysis, it is clear that not all programmers are the same, especially in a BI environment. In the final top-left corner at Lake (☰) is located another programmer of sorts, the Consultant or Industrial Engineer who is the active development interface with the customer end-users. Using high-level non-procedural languages to develop reporting, geospatial and data mining applications demands that a large proportion of the finished application product be built or at least prototyped by this subgroup. In strong subject and process trigram lines, one can see motivated engagement with the customer, articulating the solution and ensuring that what is delivered is what the user actually wanted. The weaker object line indicates fluid interaction with the customer without being fixated on a specific architectural outcome. An axiom here might be “whatever works best.”

During the literature review and theoretical framework building sections, there was considerable emphasis placed on the concepts of elemental correspondence and each opposing pair of spheres being highly reminiscent of supersymmetric partners from the world of subatomic physics. It is time to consider the red axis lines that extend across each diametrically opposed pair in the diagram at Figure 4.1c. Each of these pairs is tied in by their mutual relationship to the central wellspring of the BI Architect, and bound into the congruent whole by the circumscribing cohesion of the Project Manager.

The ETL Programmer in Mountain looks across the central zone and sees a flamboyant fighter pilot in the Consultant at the Lake sphere. Likewise, the Consultant looks back

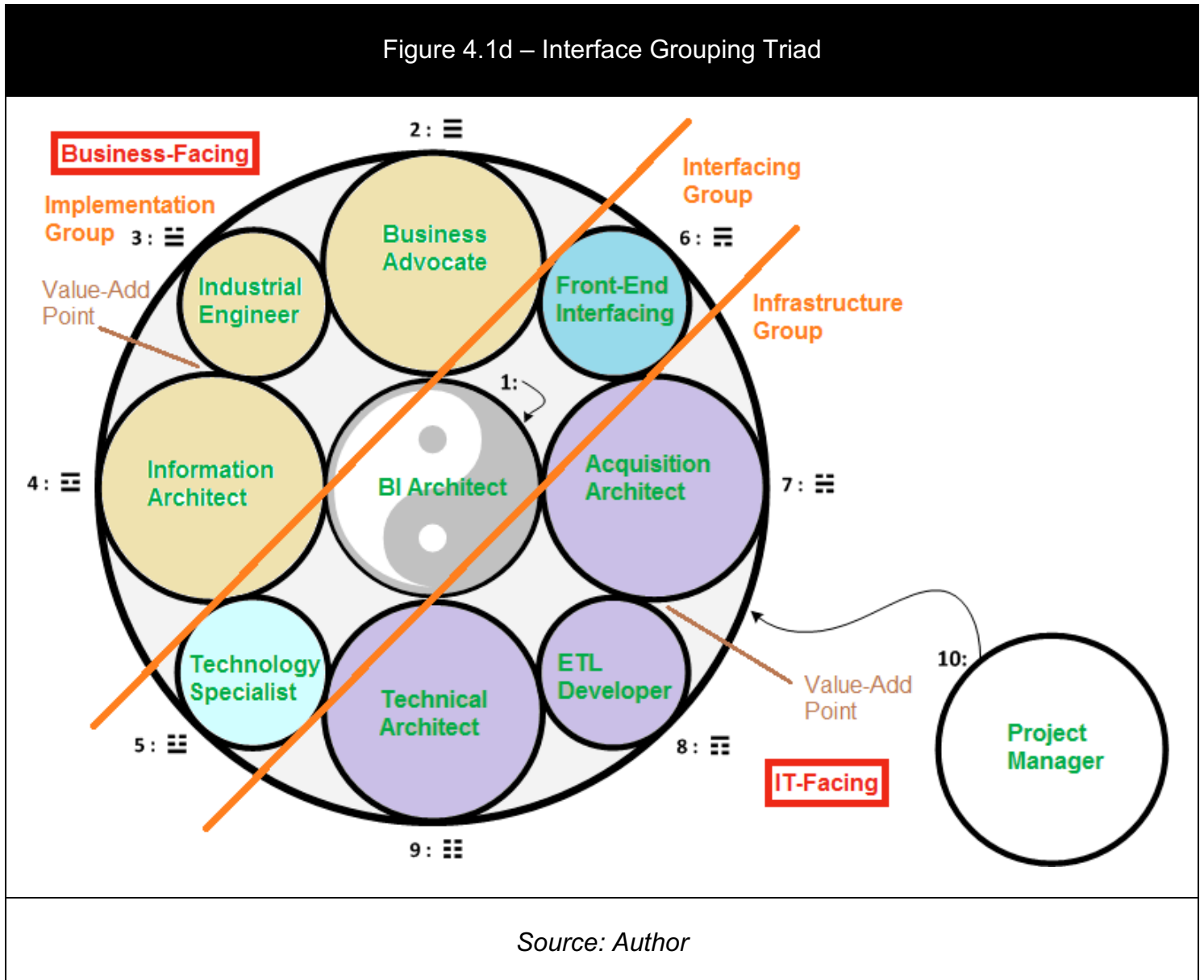
at the ETL guy and she thinks what an impossibly dull job he does, and is reminded of the bomber pilot. But in fact they are both reflections of each other and together form an integrated whole (the fullness of three *yang* lines and 3 *yin* lines in total) in the Axis of Communication. Each serves as the mechanism for translating work product into actuality. From the earlier line-change-calculus energy discussion, it was noted that these two spheres are the principle locations within the entire group where value is demonstrably added. The Consultant transmutes the application design at Fire into the finished system at Heaven. Similarly, the ETL Programmer transmutes the data design at Water into the data structure at Earth.

The same complementary roles and juxtaposed personalities are evident in the remaining three axes. On the Fire/Water Axis of Change are found the two disciplines that are the ultimate impetus for moving the state of the system forward and where novelty and evolutionary progress are actually created. Wind and Thunder, the two air-based spheres form the Axis of Action, are where the impetus to create, or the lively connection between *yin* and *yang* phases is projected. Finally, the two most expressed poles: Heaven in outward delivery and the group's ultimate *raison d'être*, and Earth in providing the essential support substrate, present as the Axis of Expression.

The recurrent theme of this research is 3-in-1. Therefore, repeated everywhere within the diagram, one can find triads working together as a unit, from the individual spheres and glyphs to the axes of complementarity. And now as a final observation in this first

parse of the model, it is time to look at another triad system within the diagram. This grouping of zones shows the department's overall relationship to the rest of the organization (Figure 4.1d).

Figure 4.1d – Interface Grouping Triad



Source: Author

This initial investigation and ROD analysis provides insight into the underlying energetic dynamics within a BI group. It can be used to gain a clearer understanding of both the intrinsic and explicit communication transaction pathways in the organization, and also to facilitate an initial organization design where each component process, task or job is in harmony with the whole. It could also be useful in illuminating intractable staffing issues within an existing team structure.

The above analysis introduced the basic ROD design approach. Ways to proactively steer the outcome of any particular relationship or business transaction in an operational group towards a desired conclusion will be suggested in a later section of this research. This possibility will be based upon intentionally engineering the line-change calculus in order to effect a specific facilitating trigram configuration. At this stage, this portion of the active research will be concluded by comparing the empirically derived ROD design for staffing a hypothetical BI group with the staffing and process network as envisioned by TDWI in their certification prospectus. In their "Overview of Specialties," TDWI enumerate five core disciplines (TDWI, 2007, p.1-3):

The field of business intelligence logically segments into five core disciplines:

- *Leadership and Management* with attention to both program and project levels of BI activity.
- *Business Analytics* concentrating on applied measurement as a business management tool.
- *Data Analysis and Design* that is essential to provide the data-to-information foundation of BI.
- *Data Integration* as a core discipline to achieve consistency, cohesion, and continuity of business information.

- *Administration and Technology* that is necessary to create and sustain a business intelligence infrastructure.

In terms of the above ROD analysis, it is easy to see that TDWI's "Leadership and Management" discipline corresponds tightly with the Sphere #1 and #10 incumbents, the BI Architect and the Project Manager. "Business Analytics" is the clear domain of the ROD Business Advocate. "Data Analysis and Design" corresponds in functional content to the Information Architect role. Obviously, "Data Integration" refers to the Integration Architect, and "Administration and Technology" is the mandate of the Technology Architect in the ROD model.

TDWI further state (2007, p.1-3) that:

Business intelligence is both a business and a technology endeavor. BI success depends largely on bringing business and technology together in the right ways. Every BI discipline demands knowledge of both business and technology. The balance of business and technical literacy, however, is variable depending on the discipline. ... An ideal business analyst, for example, attains a body of knowledge and skill that is approximately seventy percent business focused and thirty percent technically focused. At the opposite end of the spectrum, an administration and technology professional has strong technological knowledge combined with sufficient business knowledge to apply and manage technology in a meaningful business context.

Here we find clear references to the positions assigned to Wind (☳) and Thunder (☳) in the ROD BI diagrams. It is even more startling that they should be referenced as examples being "at the opposite end of the spectrum," since they

form a ROD complementary pair of the element air, diametrically placed on the Axis of Action. Further, in terms of relative proportions of business (*yang*) and technology (*yin*), they are also a perfect match to the ROD placements (i.e. Wind, the requirements analyst, at the start of the *yin* phase, but predominantly *yang* in line composition, and Thunder, at the start of the *yang* outward stroke, being still predominantly *yin* in nature).

The TDWI document goes on to detail the value to the organization, and the various skill sets required, of the five disciplines. That summary is then followed by a table of sample job descriptions (2007, p.1-14) and the TDWI disciplinary focus that each role demands. According to TDWI, the skills most emphasized for examples of each of the ROD equivalent positions in the diagram include:

- “Sponsor” – this is another name for the Business Advocate, and Business Analytics is considered essential and the primary differentiator, together with a clear proficiency in Leadership and Management.
- “Business Subject Expert” – this is the ROD Industrial Engineer, and Business Analytics is considered the essential quality.
- “Project Manager” – this is the same nominative position as the ROD analysis, and Leadership and Management skills are essential.
- “Information Architect” – is another role that matches ROD and emphasizes Business Analytics and Data Analysis and Design.
- “Acquisition Architect” – also so named in ROD is required to have (essential) Data Integration skills plus Administration and Technology.
- “Technical Architect” – must have Data Integration and Administration and Technology skills.
- “Business Requirements Analyst” and “Front-End/OLAP Developer” – are two of the roles of the ROD Front-End Integration person (building end-user interfaces and making the requirements research connection

between the business and the data modeling group), and these jobs require Business Analytics capabilities above all else.

- “ETL Developer” – must excel at Data Integration.
- “Tool/Technology Specialist” – must have Administration and Technology skills.

Interestingly, TWDI does not specifically list the role of BI Architect in their table of job samples. However, the role is definitively listed as a typical job role under the Leadership and Management detail section (2007, p.1-5).

Thus the degree of correlation between the TDWI reductive descriptions of BI roles and the ROD analysis is striking. To be sure, many of the positions are straightforward categorizations for anyone familiar with the field. But the aspect that provides a great measure of confidence for the ROD model is that essentially the same functional organization was derived by completely different routes. The important distinction is that the commonly observed mechanism (as illustrated by TDWI) is based solely upon rule of thumb, whereas the ROD structure was assembled according to a clear methodology. Once the real core functions of the business have been deeply contemplated, which is something only an experienced person could undertake, then the process of staffing is to a large extent mechanical. By following the simple prescriptions, the departmental design follows systematically and will be consistent with the structural design of any other division in the organization. As will be seen, it operates the same in any environment and is therefore independent of the subject matter. Once a

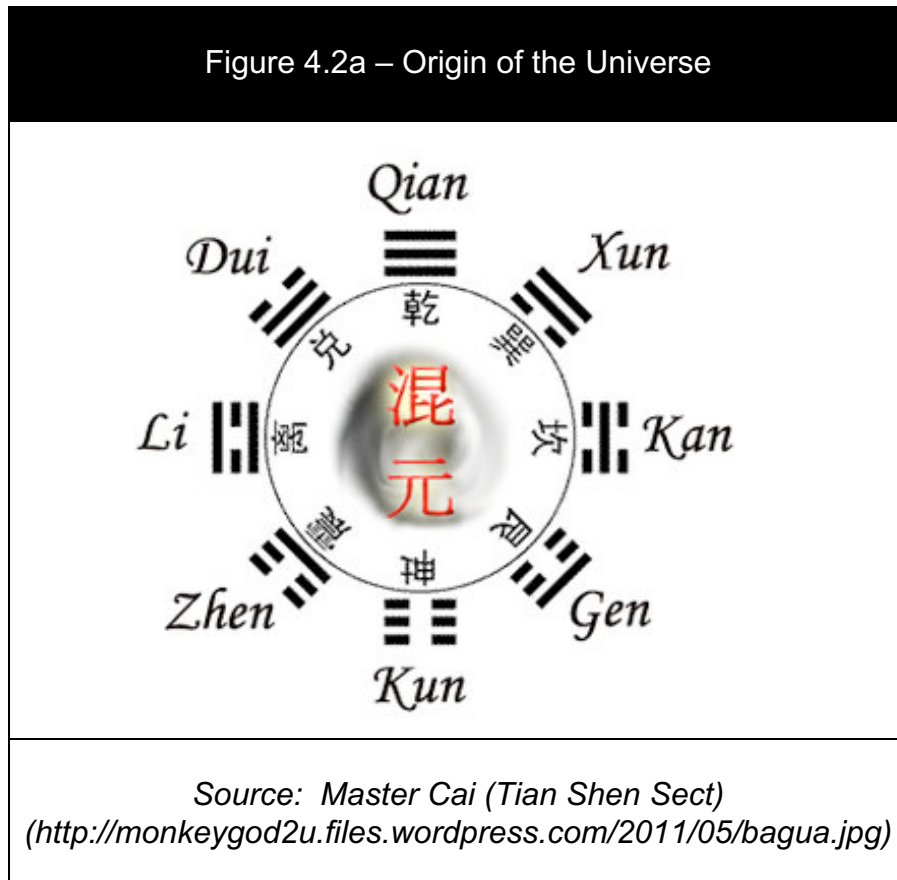
domain expert has analyzed the process pathways of any specific group from an energetic standpoint, the ROD model provides a clear structure to the task of assigning roles and a standard means of troubleshooting any future process or communication breakdowns.

4.2 Yijing – Taoist Engineering

According to the Taoist tradition, each of the eight trigrams represents one of the fundamental modes of material expression at the level of the Gap, comprising four emerging from the quantum foam, and four submerging back into it. The subsequent progressive and sequential symmetry breaking that gives rise to the everyday world of the objects of our experience (Laozi's "Ten Thousand Things") is just a recursive and complex elaboration of these primal eight. However, a recurring theme of the ancient traditions and at the heart of this research is that life is not characterized by the things, but by the relationships between them.

Looking at another version of the original *bagua* diagram out of which the ROD template was constructed, one can see the eight images arranged around a circle. The central characters indicate the primordial chaos that is the progenitor of the material universe.

混元 hùn yuán : "origin of the universe"



If any entity or situation is characterized by a predominance of one particular sphere of influence, then it follows that any specific circumstance can be characterized by the relationship between two *gua* created by the subject and object of the interaction. For example, *Zhen* looks at *Kan*, and reciprocally, *Kan* looks at *Zhen*. These essential elements of relationship are the domain of the classic Yijing (*I Ching*, “The Book of Changes”) and are depicted by placing the object **trigram** over the subject to form **hexagrams**. In other words, each of the eight trigrams looking at themselves and all the others for a total of 64 hexagrams. Each hexagram consists of 6 lines – so there are a

possible 384 (64x6) different line permutations. Hexagrams are read from the bottom upwards, hence the bottom is line 1 and the top line 6.



Thus, as an example, the relationship between *Zhen* and *Kan* from the perspective of *Zhen* would be Hexagram 3, named 屯 (*Zhun*), traditionally meaning "sprouting," "difficulty at the beginning", "gathering support", and "hoarding". The inner (or, in ROD parlance, subject) trigram is 震 (*Zhen*) shake = (雷) Thunder, and its outer (or object) trigram is 坎 (*Kan*) gorge, defile or pit = (水) Water.

The complementary hexagram, from the perspective of *Kan* is 40, named 解 (xiè), variously translated as "taking apart," "removing obstacles" or "untied".



Its subject trigram is 震, and its object trigram is 坎.

Thus, the experience is dependent upon the disposition of the beholder. The Yijing, based on the empirical experiences gathered over thousands of years and assembled by King Wen of Zhou, provides an overall judgment, or terse overview of the implications of each hexagram, plus commentaries from later scholars, chief of whom was reputedly (but unlikely) Confucius, and also the great symbolism (or "image") of the hexagram. The advantage for Recursive Organizational Dynamics is that one can co-opt this time tested imagery to provide a richer description of the intrinsic background to any particular dynamic in the workplace. In the context of the previous Business Intelligence analysis, the application programmer goes to the data modeler when first developing computer reporting code. One might expect that in her dealings with the

data modeler, an application programmer might view the transaction as the source point for growing her application, for providing her understanding of the data, and experience tells us that she could expect some roughness until the structure is ironed out to her satisfaction.

Legge translates the symbolism of hexagram 3 thusly:

[The symbol of] clouds and (that representing) thunder form Chun. The superior man, in accordance with this, (adjusts his measures of government) as in sorting the threads of the warp and woof (Van Over, 1971, p.56).

More accessibly, Huang explains the origin of the imagery:

The character for the name of the *gua* has two meanings and is pronounced in two different ways. In most cases it is pronounced *tun*, carrying the meaning of gathering, assembling, and filling up with abundance. In ancient China, a warehouse was called *tun*. In the I Ching, and only in the I Ching, this character bears the meaning of beginning. In this case, it is pronounced *zhun*.

The ancient Chinese ideograph of this character is a picture of *Zhun*, which might be the word's original meaning. The ideograph of *Zhun* looks like a tiny blade of newly sprouted grass with a root that deeply penetrates the ground. The horizontal line lying across the upper third of the ideograph represents the surface of the ground. Above the ground a tiny sprout is just coming up, and underneath a root penetrates the soil. This picture symbolizes new life. The structure of the *gua* presents another picture. The lower *gua* is Thunder. Two yielding lines mount a firm line. The *yang* element is stuck under the two *yin* elements. The upper *gua* is Water. A firm line lies between two yielding lines. The *yang* element is bogged down between two *yin* elements. This picture suggests a rough situation for a newly born being. Nevertheless, the newly born being possesses a strong and healthy root, gathering an abundance of life force for its growth (Huang, 1998, p.56).

Developing an assured feel for the language of the Yijing does not come quickly. Nonetheless, even a novice immediately gains the sense of the presence of a wise old sage. Perhaps this is just our intuitive affinity with age-old human archetypes. With familiarity comes deeper understanding. The imagery of the Yijing has, to a large extent, informed the general characteristics presented in the ROD template. Some background is presented here to suggest that going back to the roots would be an advantage to any serious ROD practitioner.

Now looking at the *Zhen/Kan* relationship from the other vantage point, the data modeler, on the other hand, would consider his role towards the programming staff as clarifying data structures, providing model diagrams, and generally removing the complexity from business processes and data storage models (e.g. denormalizing data for reporting purposes). This again is consistent with the image of the hexagram. In his translation of the commentary, Legge offers:

When heaven and earth are freed (from the grasp of winter), we have thunder and rain. When these come, the buds of the plants and trees that produce the various fruits begin to burst. Great indeed are the phenomena in the time intimated by Chieh (Van Over, 1971, p.208).

Wilhelm's commentary on the image offers:

The failings of men (the unintentional transgressions) he does not dwell upon; their mistakes he passes over as thunder dies away. Even willful sins he forgives, as water washes all things clean. By his clarity does he bring deliverance (Wilhelm, 1984, p.80).

Margaret Pearson, a former computer software professional turned sinologist and historian, writes of hexagram 40:

However, the people you need the most, those with practical experience, will remember that most new systems have bugs, and that no one is perfect. If you can release yourself from your fears of embarrassment, show that you welcome criticism and reward those who point out your mistakes, you will encourage the participation of the most honest and conscientious people in the group and proceed toward workable methods of effective interaction. You should also be tolerant of others' mistakes even when they do something that is clearly wrong (Pearson, 2011, p.167).

Good counsel for data modelers in dealing with programmers!

The main thrust of the current research is informing organization design through the basic ROD diagram *bagua* structure. However, the Yijing hints at much greater utility if a more granular analysis can be successfully captured in an easy-to-use model. To lay the groundwork for future research and integration, it will be worthwhile to offer a preliminary outline of the principles involved.

ROD uses the hexagram symbolism from the Yijing in a descriptive or explicative manner. The basic hexagram imagery, however, is not what gives the Yijing its name. The component lines in any trigram (and by extension, hexagram) are not static. Under suitable influence, a binary flip of any *yang* line into its *yin* complement, or vice versa, results in a new trigram and hexagram. The Yijing purports to anticipate and map these chaotic changes, which is why its name means the "Book of Changes." Therefore the

Yijing is mainly used predictively, in oracular fashion. It is not well understood how the Yijing can track patterns and trends in the processes of chaos, and therefore techniques such as the casting of a Yijing oracle can be termed stochastic (Mendam, 2012).

Each trigram is a phase space configuration of the subject, process and object dimensions under the influence of *yang* (existence) and *yin* (intelligence) attractors. In discussing the Lorenz strange attractor, Larry Bradley says:

Strange attractors are unique from other phase-space attractors in that one does not know exactly where on the attractor the system will be. Two points on the attractor that are near each other at one time will be arbitrarily far apart at later times. The only restriction is that the state of system remain on the attractor. Strange attractors are also unique in that they never close on themselves — the motion of the system never repeats (non-periodic). The motion we are describing on these strange attractors is what we mean by chaotic behavior (Bradley, 2010).

Since predicting chaotic behavior in advance is commonly called fortune-telling and is not yet within the ambit of accepted scientific procedure, the current iteration of ROD is not designed to be used as a prognostic tool. In addition, depending upon the manner in which the Yijing reading is obtained (e.g. coin toss, or traditional yarrow stalk procedure) there are statistical differences in the likelihood of any particular outcome. Some types of lines are weighted more heavily than others. Such a variance in method could be construed as putting onerous expectations on nature to adjust for differing random inputs! Nonetheless, whether or not one accepts the divinatory veracity of the system, it does not mean that ROD cannot make use of this great reservoir of folk wisdom handed down from antiquity for descriptive purposes.

At the quantum level, a process is affected (changed) by the mere act of observation. Experimental evidence shows that quantum processes respond to intention. In describing an extended intention experiment conducted by Stanford physicist and materials scientist, William Tiller, Lynne McTaggart writes:

Somehow, in these charged spaces he and his colleagues had managed to create an SU(2)-gauge space, where electric and magnetic monopoles coexisted—similar to the reality supposedly present in the supersymmetry states of exotic physics. In these conditioned spaces, the very law about the proportion of magnetic force had altered. *A basic property of physics had completely changed.* The only way to get such a polarity effect was to produce some element of SU(2)-gauge symmetry.

This change in the gauge symmetry of the space meant that profound changes had occurred in the ambient Zero Point Field. In a U(1)-gauge symmetry, the random fluctuations of the Field have no effect on the physical universe. However, in SU(2)-gauge symmetry states, the Field has become more ordered and produces a number of changes in the tiniest elements of matter—which add up to a profound alteration in the very fabric of physical reality (McTaggart, 2007, p.120).

Even if ROD cannot predict spontaneously occurring line changes, it can suggest ways to proactively **engineer** them. It is possible to engineer a change in trigram structure because it represents a Gap-level energy node configuration, and each component line is a digital condition. By the act of observation, or by putting human intention on it, a *yang* line can be turned to its *yin* complement. This is engineering the fabric of reality at the level of the source, techniques for which will be discussed in a subsequent chapter. Thus we can make use of the Yijing's detailed description of line changes, not to forecast the future, but to elucidate an anticipated outcome from engineering a new

influence. Or we can see the consequences from an innocent but ill-advised action in every day circumstances.

Returning to the BI example, if the application programmer received new reporting requirements from the systems designer at the Fire position (☲) that necessitated a change in the data model, and for the sake of expediency decided that she would facilitate the transaction and communicate that to the data modeler directly, in other words attempt to present it from the standpoint of the designer, then there must be a line change in the object position of her subject trigram to change her ☲ into the designer's trigram. It's not her job and she might not have the background justification for the change. One could consult the Yijing to see what the likely outcome of her, in this case probably unintentional, focus on the object quality might be. It results in the changing of line 3 in hexagram 3. Cleary's explanation of the traditional line change text reads:

Petty people without knowledge act arbitrarily, in ignorance, wrongly coveting the celestial treasure; they act dangerously on a dangerous basis. This is like "chasing deer without a guide, just going into the forest." And it is no surprise. As for superior people who understand the Tao, they should know the dangers, and had better give up and wait for the proper time. If you do not wait for the proper time and rush forward in hopes of speedy accomplishment, you will certainly regret having beckoned danger. This is rushing to seek solutions when in difficulty (Cleary, 1986, p.49).

White (2004) gives us this for the line 3 change:

During the early stages in the learning of any skill it is important to have expert guidance to avoid losing the path or coming home empty-handed.

Both experiences are humiliating and exhausting. Whenever a question comes up in this early stage, it is best to stop right away and check with the Master (an expert on the particular type of creation) rather than to push on blindly by oneself.... Hence, even with caution, the result may be exhausting. In such situations it is wise to seek expert counsel and guidance, thus avoiding needless waste of time (KUN), stalled progress (GEN), and humiliating difficulties (KAN).

From the vantage of the time-tested wisdom of the Yijing, therefore, it would not be very advantageous for the application programmer to go barging into the realm of the systems designer. But instead of usurping that role, what if she facilitated it?

The essential relationship between the systems designer (Information Architect) and the data modeler (Acquisition Architect), from the point of view of the systems designer, is given by Hexagram 63 (*Ji Ji*, Completion). Legge writes:



[The symbol of] fire and that for water above it form Chi Chi. The superior man, in accordance with this, thinks of evil (that may come), and beforehand guards against it (Van Over, 1971, p.309).

And Cleary clarifies further that “this hexagram represents forestalling danger, foreseeing perils, and stably completing the basis of the [undertaking]”, (Cleary, 1986, p.228). Huang goes deeper into the symbolism:

In Chinese, the original meaning of the first *Ji* is finishing a meal. Later, the meaning was extended to already or already finished. The ancient ideograph of this character inscribed on an oracle bone shows a person kneeling on the right with a food vessel on the left. The ideograph cast on a bronze cauldron from the Zhou dynasty shows the food vessel replaced

with an ear of grain and the kneeling person substituted with a person standing by the grain with an open mouth. Originally the second *Ji* meant to cross a river. The left side of the second ideograph shows water flowing in a riverbed. On the right, there is a boat carrying three persons who are steering. Three people are pulling together to overcome a difficult situation, a picture of people helping each other get past an obstacle. Taken as a whole, the two parts of this ideograph mean to complete a course of action or to fulfill an achievement ..

Thus, the *gua* represents a condition of balance, harmony, and absolute correctness. It is an ideal situation.

However, sages with profound experience had the insight that this was also a time of climax. Beyond the climax, every perfect condition alternates to its opposite. For this reason, the sages advised extreme caution. They understood that in a perfect situation there is still some imperfection. They purposefully made progress in small steps and achieved moderate success. They remained steadfast and upright. They acted to keep the good fortune at the beginning from becoming disorder in the end (Huang, 1998, p.485).

Once again, the core energetic characteristics of the relationship have been faithfully captured in the ancient writings and various translations and interpretations. None of these interpretations were specifically crafted for a business application. There are many translations of the Yijing that are aimed at a particular subject or aspect of life.

Of course, in this basic example, the intrinsic relationship between the application programmer and systems designer hasn't been considered from either viewpoint. Like visiting an optometrist, each new lens and angle brings out a new layer of focus and clarity. But it gets involved and extended very quickly. The necessary interpretive skills are not usually found within the traditional academic or business establishments. But fortunately there is a vast pool of interpretative talent all over the world that could be

drafted to assist in creating a simple lookup grid, Web application or database querying tool that incorporates the Yijing essence of all these relationships and possibilities.

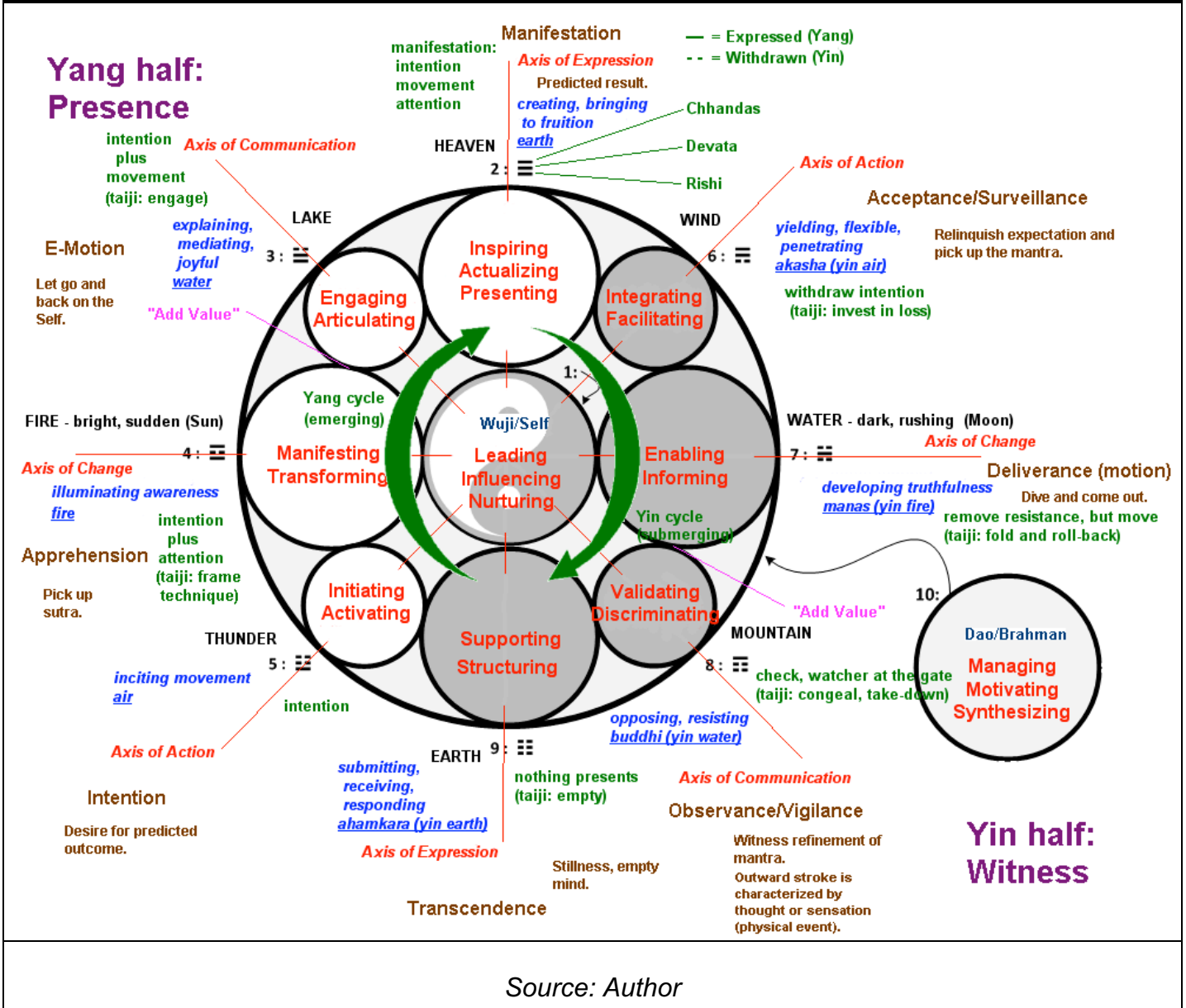
Proposals for proactively modeling the desired line changes in intention in order to promote a desired transaction between two other parties will be suggested later.

Modern business has increasingly been turning to ancient Chinese and Japanese classics for strategic advice, such as SunZi's "Art of War" (*Bing Fa*, e.g. Giles, 1782), Miyamoto Mushashi's "Book of Five Rings" (*Go Rin No Sho*, e.g. Musashi, 1974), or Takuan Soho's "Unfettered Mind" (*Fudochi Shinmyoroku*, Takuan, 2012). But working with the Yijing has until now been considered somewhat left of handwriting analysis. It is hoped that Recursive Organizational Dynamics can provide some much-needed credibility to the field.

A feature of both the Chinese and Indian philosophical traditions is that they are consistently applied across the entire spectrum of living. The theory of *bagua* is as congruent in medicine as it is in fighting, as true to architecture as it is in business. Exercising intention and flowing with and deliberately manipulating the transformations of the *bagua* has always been the especial domain of advanced meditation techniques as well as the practice of *neijia*, the internal schools of Chinese martial arts such as *taiji*. Scholars and adepts have studied and practiced each facet of the process in great detail. After teaching both these disciplines for several decades, the following diagram

(Figure 4.2b) has been developed as a ROD working research analysis of a set of *taijiquan* movements (green) and progressive meditation/*samyama* stages (brown). It shows that the ROD technology can be applied to any sphere of activity.

Figure 4.2b – ROD Analysis of Taiji and Meditation



Each of the *taiji* postures is asserted by some masters to exemplify the flavor of a specific position in the diagram. For example, the “Ward-Off” movement is said to mimic Heaven (☰) because of its outward, expansive nature (Yang, 1982, p.8). However, this is possibly a misunderstanding or gross misrepresentation of the process. In fact, every posture and transition in the *taiji* sequence could be seen to progress through the entire *bagua* cycle if it is performed correctly.

The vitally important concept is that the Form is a process, not a collection of poses. The thread that connects the pearls, as the postures are often likened to, is the aspect that brings the art to life. It is this feature of pantographically illuminating the basis of life that makes the internal martial arts such a wonderful and readily available surrogate for studying the energetic processes within an organization.

The brown meditation cycle will be discussed in the next section because it concerns the Vedic approach to engineering reality. The effects of focused intention were documented at length in the literature review chapters. In the context of *taiji*, the research produced some startling experimental affirmations using a Random Event Generator (REG). The REG is a device invented for the Global Consciousness Project by the PEAR group (Princeton Engineering Anomalies Research) in the applied mechanical engineering department at Princeton University (Noosphere). Since the output of a REG device is statistically random noise, it can be used to measure any external influence which sways the output signal significantly away from the flat-line

mean. Portable units are manufactured by Psyleron, Inc, a spin-off from the PEAR founders, which are suitable for field experimentation. The research used the standard model which is “batch tested and more deeply profiled [and] suitable for most research applications”, (Psyleron). As a compact yet true random number generator, it monitors quantum noise caused by electron tunneling at the gate junction of a field effect transistor (FET).

Because the practice of *taijiquan* (T'ai Chi) is so intimately connected to and dependent upon the refinement of awareness and intention, it was decided to see what possible effect the practice of the *taiji* Form, a standardized choreographed series of postures, might have on a REG set up in the training hall. None of the students had any idea of what the apparatus was for.

The screen dump in Figure 4.2c shows the REG device output over a period that included performing the traditional Yang-style 37-posture “Short Form.” The sequence is predetermined, but the speed of execution is not. *Taiji* is usually practiced slowly, but an instance of this particular Form could range from under 5 minutes to over 15 minutes in duration and still be called authentic.

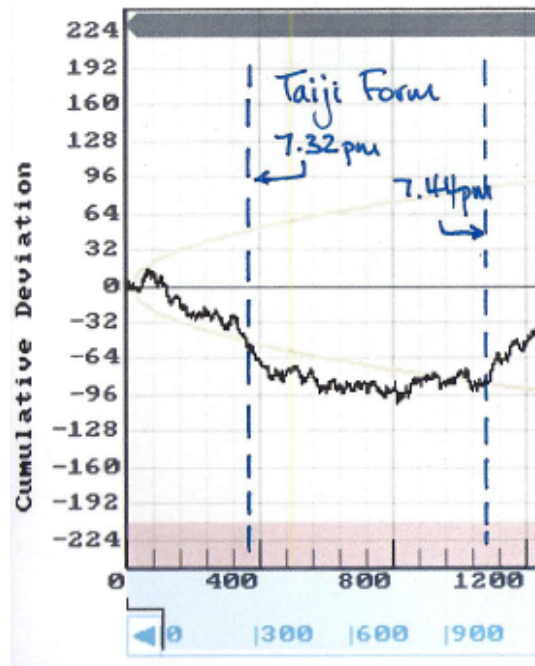
Figure 4.2c – Random Event Generator (REG) Output



Source: Author

The faint yellow-green parabola spreading away from the starting zero point is the threshold of significance. Whether the output deviates above or below the threshold curve, it has a statistical likelihood of 20-to-1 against chance. The fact that the trace dipped below the line during and only during, and for the exact duration of the random 12-minute Form practice, constitutes an event enormously against random chance.

Figure 4.2d – Random Event Generator Detail



Source: Author

When dealing with effects of consciousness, it is often difficult to repeat a result with such startling clarity as the above sample. This from a Dec 4, 2012 email exchange with Herb Mertz, the CEO of Psyleron and a member of the original PEAR team, in reference to the *taiji* experiment:

The REG output is not a fixed process or deterministic in the old physics sense. It is a function of the interaction between consciousness of the moment and the REG. When we try to make a model out of what it should do based on what we think it should do, then it generally does nothing. Because consciousness is not fresh and in the moment, but based on a past image...

This does not mean that one cannot make some general statements. You can. But it takes a special sort of hands off attitude with the REG process, or it will be confined and constrained in its free flow...

As regards to above the midpoint line or below the line. We have never found that FieldREG sessions have a defined pattern. It seems that if they happen to be wandering down when the REG catches something in the event, it can just go way down as a kind of affirmation of something going on. It doesn't mean that up is good and down is bad...

It occurs for a very interesting reason. The subconscious operates on different principles to the conscious mind. The subconscious operates to maintain normalcy and shuns significance. So if you are consciously trying to get the line to go up, the subconscious wants it to go down to affirm that you are not creating some kind of significant situation. That is, if you believe you can affect the REG, then that is significant. The subconscious will drive it the other way until it gets you to give it up. Only when you consciously say "Well, I guess this doesn't work" does it let go. If you are really good, then it will even drive the results well below the parabola (as seems like you were doing).

From this discussion it is apparent that the subconscious areas of the brain can interfere with the integrity of the message being sent to the Gap-level interface at the source of thought (see Unified Field Charts from the literature review). The Vedic engineering

approach that follows posits specific techniques for training the mind to be able to insert instructions directly at the junction point below subconscious and core belief system interference.

Taoist *taijiquan* and Vedic *samyama* are both fascinating as research tools for the same reason: they present on the macroscopic level, the sub-microscopic processes and mechanics of nature itself. More than that, they are both powerful techniques for directly experiencing the Gap-level quantum interface and furthermore they train the conscious ability to act from that deepest platform of nature's internal functioning.

4.3 Patanjali – Vedic Engineering

Whether or not one considers the outside world to have a physical reality independent of the individual consciousness reflecting upon it, it is clear that its actuality is very different from most people's perception of it. Eminent Stanford neurophysiologist, Karl Pribram, notes that "the objective world does not exist, at least not in the way we are accustomed to believing", (Talbot, 1991, p.54). He explains:

What is "out there" is a vast ocean of waves and frequencies, and reality looks concrete to us only because our brains are able to take this holographic blur and convert it into the sticks and stones and other familiar objects that make up our world... According to Pribram this does not mean there aren't china cups and grains of beach sand out there. It simply means that a china cup has two very different aspects to its reality. When it is filtered through the lens of our brain it manifests as a cup. But if we could get rid of our senses, we'd experience it as an interference pattern. Which one is real and which is illusion? "Both are real to me," says Pribram, "or, if you want to say, neither of them are [sic] real."

We can view ourselves as physical bodies moving through space. Or we can view ourselves as a blur of interference patterns enfolded throughout the cosmic hologram. [Physicist David] Bohm believes this second point of view might even be the more correct, for to think of ourselves as a holographic mind/brain *looking* at a holographic universe is again an abstraction, an attempt to separate two things that ultimately cannot be separated... Pribram's assertion that our brains construct objects pales beside another of Bohm's conclusions: *that we even construct space and time* (Talbot, 1991, p.55).

Moreover, the way we construct our cognitive map of reality does not depend upon the input data stream. The brain does not distinguish whether information is coming from sensory channels or endogenously, such as in dreaming or imagination. In addition, how we perceive reality is colored by our previous experience. Consciousness researcher and brainwave entrainment pioneer, Bill Harris, writes:

Beliefs are one of several mental filters we use to delete, distort, and generalize information that enters the mind, prior to making the internal representations that lead to our emotional state and our behavior. Based on early life interactions and experiences, especially with our primary caregivers, we all develop beliefs about who we are and what our relationship is to the rest of the world. The brain is a goal seeking mechanism—and a very powerful one. Your brain will either make what you believe actually come true, or will at least make it seem to be true (which amounts to the same thing, as far as your experience of life is concerned). You will arrange to be right about your beliefs by creating the circumstances that confirm to you that they are true (Harris, 2003, p.4).

For these reasons, the Vedists stated that knowledge was only true when it was gleaned from the level of the Gap, the level of the quantum foam and the lively interface between the vacuum state of the field and the material universe. In Sanskrit this is

called *ritam bhara pragya*. According to Maharishi, speaking at the Kumbha Mela in 1986: "*ritam bhara pragya* is that state of intellect which conceives or perceives things as they are." And at a conference at Amherst, Massachusetts, on July 26 of 1971, Maharishi further defined *ritam* as:

When awareness is permanently established in Pure Consciousness, only the truth will dawn in one's awareness. This state of consciousness is called *Ritam-bhara pragya*, "that intelligence which knows only the truth". When one's awareness is established on the level of *Ritam-bhara pragya*, it is possible to produce specific impulses, or sounds, in order to produce any desired influence on an object. This level of consciousness has control over the whole field of objectivity. By developing this ability to produce effects in creation according to one's desire, one gains mastery over Nature (Chopra, 2010).

At a meditation teacher training course in Mallorca, Spain, in February 1971, Maharishi further explained that perception through the senses can be deluding. Therefore perception alone cannot be a firm criterion for right knowledge. He said:

Understanding must support perception in order for perception to be an authentic means of gaining knowledge. Perception satisfies the heart, and understanding satisfies the mind. Right understanding along with direct perception is necessary to give complete knowledge. Perception belongs to the field of the senses, and understanding belongs to the field of the intellect. At the level of *Ritam bhara pragya* the difference between the intellect and the senses is minimal because that is the level which is closest to Transcendental Consciousness, where no differences exist. At this level, knowledge derived from perception, and knowledge derived from understanding will be in perfect accordance with each other (Global Good News, 2012).

On a less abstract note, Deepak Chopra defines *ritam* as:

In the Vedic literature we have an expression “*Ritam Bhara Pragya*”, it literally means that if your mind is synchronized with the synchronistic mind of the universe you tap into the local correlation of the universe and your intentions become very powerful leading to the spontaneous fulfillment of desire (Chopra, 2010).

The research previously reviewed on the power of intention showed how profound an effect can be had by simply focusing on a desired outcome, especially in groups. For a basic ROD intervention, it is anticipated that significant results can be had when an individual consciously reflects upon the specific transaction that he or she wants to facilitate. However, a rigorous examination is out of scope for testing the effectiveness of deliberate subject/process/object focus and must wait for further research. At this stage the idea is introduced that techniques for applying conscious intent at the *ritam* level, at the juncture between the absolute and relative, that bypass the perceptive apparatus and intellect plus eliminate any subconscious countermanding or non-supporting or distorting core belief systems, would be the most effective means for manipulating processes to produce specific desired outcomes. Such technologies have existed for a very limited audience since time immemorial, and could collectively be termed Vedic Engineering or *yagya*. In recent decades, thanks to an advanced extension of the TM program called the TM-Sidhis, there are targeted personal training regimens that have been tested and proven with hundreds of thousands of participants the world over. According to Orme-Johnson:

The basic element in the TM-Sidhis is the experience of “*sanyama*,” as described by Patanjali in his *Yoga Sutras*. *Sanyama* is a spontaneous mental process that begins to take place once pure consciousness, or “*Samadhi*,” is established to a sufficient degree of stability to coexist with

mental activity. When this situation is present, it becomes possible for pure consciousness to “adopt” a thought, an intention, or a desire in such a way that it is spontaneously carried out without any effort or action on the part of the individual. This is a direct indication that consciousness underlies the structure and behavior of natural physical laws, and that it is possible to use this fact to allow natural laws to accomplish individual intentions. The fact that a number of the TM-Sidhi practices result in sensory or motor performances normally thought to be outside the scope of the known laws of nature, indicate that the experience of pure consciousness permits access to a deeper and broader level of physical law than has hitherto been available to science, and in addition allows the mind to participate directly in their operation. The purpose of engaging in these exercises is to strengthen mind-body coordination to the maximum degree, so that every intention of the mind is met by response from the body (Orme-Johnson, 1977, p.702).

These techniques are described in one of the great cornerstones of the Vedic literature, the Yoga Sutras of Maharishi Patanjali.

In his famous aphorisms, Patanjali lays forth the guidelines for developing *siddhis* (or “supernormal” powers) through an advanced meditative practice that he calls *samyama*:

Dharana or attention is the mind’s (Chitta’s) fixation on a particular point in space.

In that (Dharana) the continuous flow of the same knowledge is called Dhyana or meditation.

When the object of meditation only shines forth in the mind, as if devoid of the thought of the agent even, then that state is called Samadhi or concentration.

The three together on the same object is called Samyama.

By mastering that (Samyama) the light of knowledge (Prajna) dawneth (Mukerji, 1977, p.481).

So to summarize, Patanjali defines *samyama* as the concurrent and simultaneous exercise of fixity of attention (*dharana*), movement (*dhyana*), and also transcendence

(*Samadhi*). This seemingly paradoxical set of requirements perhaps accounts for the practice not being, until recently, widespread or well-understood. Moreover, it can be inferred that there is a fourth major prerequisite that Patanjali didn't specifically articulate since it is implied, and that is the quality of intention (*sankalpa*). Unless there is a strong intention, a deep desire, for a specific outcome, the very basis is missing. In fact, in detailing and explicating the practice of *samyama*, Maharishi has said that the particular aphorism (or *sutra*, literally "thread") being introduced should be picked up on the finest level of *feeling*. In other words, the outcome is desired or intended in as subtle a manner as possible.

It is worth noting at this juncture that by restoring the fourth component to the *samyama* practice, the 3-in-1 functionality is completed once again. Intention (*sankalpa*, subject, self, bottom line of the trigram), movement (*dhyana*, process, middle line of the trigram), and attention (*dharana*, object, top line of the trigram) are the 3. And then finally transcendence (*Samadhi*, evenness, *wuji*) is the unified aspect. The great lesson is that life is the wholeness of 1 and 3. The fullness of both together is the essence at every level of existence. Unless each is always considered in terms of its relationship with all the others, then life and our plans for it are necessarily fragmented. An especial feature of ROD is that it considers all aspects as a dynamic integral web of relationships where no part is viewed outside of the context of the whole.

The *yin*, inward or supporting phase of the cycle is characterized by each of its four component trigrams having a suppressed or withdrawn subject line. Therefore in Figure 4.2b in the previous section on Taoist engineering, it has been termed the “Witness.” The self stands aside. Conversely, the *yang*, outward or creative phase is characterized by a fully expressed subject line at the bottom of the glyphs. The self desires, engages and looms large to bring forth something new. This is called “Presence.” Within each phase of expression or non-expression of self, each aspect of relationship cycles through.

Included in the diagram is labeling that follows the technique of *samyama* in terms of the trigrams of the ROD model. The inward or *yin* phase of the circuit describes the sequence of events involved in establishing the mind in transcendence (pure, simplest, or least excited state of consciousness) at the Earth point. This fulfils the requirement of *Samadhi* – which additionally implies that the *samyama* process cannot be reliably or successfully undertaken until there is some measure of integration of the meditative experience. At the start of the outward, manifesting, or *yang* phase at Thunder, there is the intention for success in the particular technique being practiced (the development of exceptional hearing ability, for example: see Orme-Johnson et al, 1977, p.719). Here transcendence (*Samadhi*) is not lost, but intention (*sankalpa*) is added. Next, at the Fire position, the *sutra* or specific technique is apprehended. This is the attention or *dharana* mandate. Still, transcendence and intention remain. Transcendence remains because it is imbibed in the cultured nervous system of the advanced practitioner, and intention

because we see an emphasized subject line, and attention because there is an emphasized object line in the Fire trigram. Patanjali says that we then have to move, to flow, and Maharishi's instruction is to let go of the *sutra* and "go back on the Self" - which means to flow in transcendence to the Gap. This is the Lake trigram (where value is added) with intention and process lines activated, indicating motivated movement without being attached to or captured by an emphasized object line. At the level of the Gap, the *ritam* experience of truth produces the desired result. Thus at the Heaven point can be seen all three lines in their expressed configuration.

This very brief overview of the technology certainly does not replace the need for individual instruction from a professional and the specific teaching processes are proprietary. The point of bringing *samyama* up in this current research is that should practitioners be seriously interested in making optimum use of a ROD deployment, in learning to have powerful influence directly at the level of the quantum interface and having the underlying fabric of nature at the organization's disposal, then there are many thousands of experts in the technology already available to assist.

4.4 Other Approaches

The main theme of the Western management science review was a growing understanding that organizations are much better described as living systems than a collection of mechanical automatons. They are only biological in a virtual or analogous sense, but they nonetheless display all the defining characteristics of living entities. A lot

of the literature appears to marvel at the parallels with biological systems, and others spend a great deal of time urging us to re-evaluate our viewpoints and processes in a way that reflects this living systems orientation.

A few of those authors, such as Peter Senge, urged their readers to focus on the development of the individual. By increasing the capacity for consciousness in the human vessels comprising the units of an organization, it has been shown that the overall vision and efficiency of the enterprise can be grown. For example, see an illustrative study of the effects on work attitudes and behavior from the University of Chicago's Graduate School of Business (Orme-Johnson, 1977, p.630). In their book outlining the effectiveness of meditation for improving organizational success, Swanson and Oates ask:

How do we keep from wasting our training dollars? More urgently, how can we unleash the creative, productive energies ... that all of us suspect are out there, to help resolve the crisis of management? Plainly, we need a radically new approach. We need a profound new tool that can fundamentally upgrade the raw material we have to work with. The answer proposed ... [is to] dramatically enhance your people *by upgrading the hardware of the human computer, the functioning of the nervous system and brain*. Hundreds of research studies have shown this to be a practical possibility... (Swanson, 1989, p.19).

Thus, there is a gulf between realizing that an organization is a living entity and cataloging all the facets of corporate life supporting that assertion, and techniques of self-development aimed at individuals within an organization with the demonstrated

intent of uplifting the productivity and inter-personal relationships within the entire community.

There are very useful tools available for bridging that gap. The Unified Field Charts (UFC) introduced in the section on Vedic literature presented a powerful way to visually tie the basis of the individual awareness in pure subjectivity, pure consciousness, to the ultimate basis of the organization which is arguably also pure subjectivity in the unified field. Nevertheless, however valuable the UFC device is in aligning group vision, this approach remains static in that it shows the mutual connection in terms of the existing organizational structure. What is needed is a dynamic methodology that can proactively build an organizational structure in accord with the way nature manages a complex and chaotic environment, and which can dynamically bridge the levels of organization between the individual and the enterprise as a whole. Of course, this is what Recursive Organizational Dynamics was specifically designed to achieve. But there are other options already available that address certain aspects of the problem. One such methodology is called Spiral Dynamics.

Ronnie Lessem introduces Spiral Dynamics (SD) as presenting “a new framework for understanding the dynamic forces at work in human affairs – business, personal lives, education, and even geopolitics”, (Beck, 1996). Don Beck and Christopher Cowan organized Spiral Dynamics to further the teaching of the late Professor Clare Graves’ “Emergent, Cyclical, Double-Helix Model of Adult Biopsychosocial Systems

Development” theory (Beck, 1996, p.48). Graves was a contemporary and colleague of Abraham Maslow. According to Bill Harris:

Graves set out to verify the Maslow [Hierarchy of Needs] model but found that it did not fit large segments of society. As a result, he began to explore other alternatives. After decades of research, he found that Maslow’s model was only one of eight possible values structures, one of eight different models of the world (Harris, 2004).

Broadly speaking, Graves found that as living systems evolve and gain experience, they incorporate an ever wider range of perspective into their values context. Dovetailing well with Ilya Prigogine’s concept of phase transitions in dissipative systems as they spontaneously rearrange to incorporate higher levels of order and complexity, the eight values frameworks that Graves identified each corresponded with an increasingly sophisticated capability for dealing with an evolving and progressively more complex social environment. With regard to phase transitions, Bill Harris writes:

As biopsychosocial conditions become more complex, and as the responses of the current values level fail to adequately handle them, new responses and new ways of thinking evolve. These new responses are more complex, and give society more choices and more flexibility. Each new values level involves a new and different way of thinking, different decision-making processes, and different criteria for what is important. Each new level relies upon or is associated with a new set of ideas, variables, problems, and solutions (Harris, 2004).

Echoing the recursive character of fractal patterning in nature, Cowan notes that:

That second word in the name of Graves’s theory – the emergent, *cyclical*, double-helix model of adult biopsychosocial systems development – suggests an oscillation between an inner locus and outer locus of control, a focus on changing the world and adapting to it (Cowan, 2012).

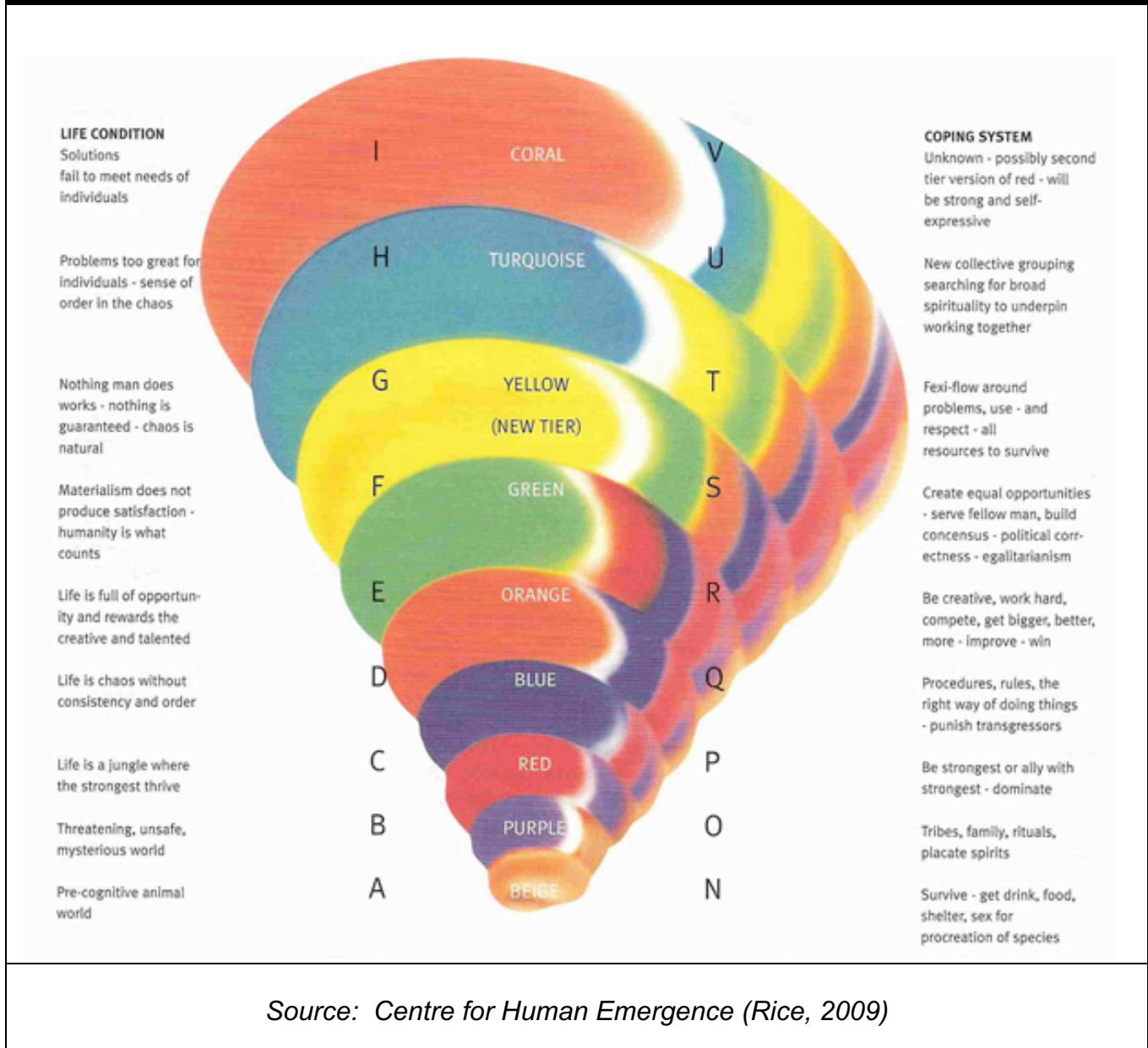
Cowan and Beck spearheaded the simplification of terms and groupings within the theory to make it more easily accessible, and to make for widespread deployment within a corporate setting. Spiral Dynamics uses color coding to identify Graves' various psychological existence levels within the framework, which they refer to as 'MEMEs. This brief synopsis of SD is not intended to do more than highlight areas of potential commonality and conflict in relation to ROD. It will become abundantly clear in a ROD context that these 'MEME levels are frameworks for evaluating one's situation in the world, not the influences or memes themselves. Nonetheless, Cowan is at great pains to make the eponymous distinction clear and notes that he and Beck coined the term 'MEME ('v' + MEME) to indicate that it was a "value system meme *attractor*" or value-system framework. In other words, a 'MEME is the container/interpreter rather than the actual information or values messages flowing through it. It is the conditioned neural pathway, not the stimulus. In terms of the oscillating stages between individual and group orientation as SD espouses, they used warm colors to indicate an outward- or self-orientation (with an inner locus of control), and cool colors to show an inward- or group-oriented level (with an often predominately outer locus of control).

SD uses the imagery of a spiral to indicate the progressive evolutionary backdrop to the model. Each individual color level within the spiral corresponds to one of Graves' eight originally determined levels (colored beige through turquoise), and several additional levels that have since been postulated, particularly the ninth level, coral. Figure 4.4a

Recursive Organizational Dynamics: A Novel Approach To Organization Design

shows the colors associated with Graves' original letter nomenclature, plus some general descriptions of each stage. This diagram is by Keith Rice of the Centre for Human Emergence in the UK (Rice, 2009).

Figure 4.4a - Spiral Dynamics



Based upon his research, Graves was inspired to predict an imminent shift in global consciousness that would create a quantum leap forward in our civilization should we survive the dangers inherent in current lower-level world thinking. He identified this potentiality by the new appearance of yellow and a hint of turquoise in society. This is very reminiscent of Maharishi's declaration about the same time in January of 1975, when, based on the extensive scientific evidence for higher states of consciousness beginning to appear in communities all over the globe, he said that: "Through the window of science we see the dawn of the Age of Enlightenment", (Global Good News).

Yellow and Turquoise represent a much more systems-oriented view of life which Graves perceived as a higher octave of the qualities inherent in the Beige and Purple ^vMEMEs. This led him to toy with the idea of tiers of stages within the spiral that could theoretically progress indefinitely as the human race evolved into a more complex future civilization. Thus, the proposed Coral level would be a Tier II version of the Tier I level Red. It should be noted that the existence of tiers has never been proven, but accepting the idea would create a recursive spiral of 6-^vMEME tiers. Chris Cowan notes:

Because of similarities between the first subsistence system (survival) and the first being-level system (survival in globalized context), and parallels between the second subsistence (B-0 [Purple] – tribal based around kinship, spirits and customs) and second being (B'-O' [Turquoise] – mega-tribal existence in a global village espousing gaia consciousness), he concluded that human nature might well emerge like a symphony with these themes repeating, six-upon-six-upon six up to the limits of the brain of *Homo sapiens*. Then we might become something else as we cycle onward (Cowan, 2012).

The popular rationale for the various levels mirrors the stages in the evolution of human society, from a purely self and survival oriented hunter-gatherer era 100,000 years ago in Beige, through the development of tribal communities in Purple, and so on up to the modern entrepreneurial Orange and environmentalist Green. Each level has quite clear defining characteristics. This has led to some criticism of what appears on the surface to be a vehicle for moral and spiritual elitism and snobbery, with 'holier-than-thou' self-assessed Turquoises looking down upon their supposedly less evolved Red 'go-getter' neighbors, for example. Clare Graves describes the Green (FS) orientation in this audio clip: http://clarewgraves.com/theory_content/audio/CG_clip4.mp3 (NVCC, 2005).

Nonetheless, Spiral Dynamics clearly offers a unique approach to explain evolving behaviors in the individual psyche and consequent relationships within a social context. It has 40 or 50 years of empirical research and experience behind it, with hundreds of thousands of practitioners and adherents across the globe. The SD system catalogs the dynamics between the various levels and provides guidance as to how to facilitate better cross-level interactions. In the realm of organizational design and corporate process facilitation, Cowan and Todorovic observe that:

Different organizations – companies, schools, NGOs, and governments – occupy different positions on the Spiral and need to develop managerial/governance strategies that match their people, their visions of the future, their purposes, and the jobs they perform today... The question is not “how do you motivate people?” but how do you relate what you are doing to their natural motivational flows. A person has a right to be who he or she is. Work and thinking should align (Cowan, 2012).

Spiral Dynamics will be revisited in the form of a pseudo-case study after the Recursive Organizational Dynamics framework has been established in order to discover that the two approaches appear to have very much more in common than they differ. It is hoped that SD could offer additional communication pathway diagnostics, and that in return, ROD might offer SD a more solid ontological grounding and a link to the Yijing idiom. Here follows a tabular arrangement of the SD vMEMEs and triggering conditions:

Table 4.4b – Spiral Dynamics vMememes				
	LIFE CONDITIONS			BRAIN/MIND COPING CAPACITIES
A	State of nature and biological urges and drives: physical senses dictate the state of being.	BEIGE	N	Instinctive: as natural instincts and reflexes direct; automatic existence.
B	Threatening and full of mysterious powers and spirit beings that must be placated and appeased.	PURPLE	O	Animistic: according to tradition and ritual ways of group: tribal; animistic.
C	Like a jungle where the tough and strong prevail, the weak serve; nature is an adversary to be conquered.	RED	P	Egocentric: asserting self for dominance, conquest and power. Exploitive; egocentric.
D	Controlled by a Higher Power that punishes evil and eventually rewards good works and righteous living.	BLUE	Q	Absolutistic: obediently as higher authority and rules direct; conforming; guilt.

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E	Full of resources to develop and opportunities to make things better and bring prosperity.	ORANGE	R	Multiplistic: pragmatically to achieve results and get ahead; test options; maneuver
F	The habitat wherein humanity can find love and purposes through affiliation and sharing.	GREEN	S	Relativistic; respond to human needs; affiliative; situational; consensual; fluid.
G	A chaotic organism where change is the norm and uncertainty an acceptable state of being.	YELLOW	T	Systemic: functional; integrative; interdependent; existential; flexible; questioning; accepting.
H	A delicately balanced system of interlocking forces in jeopardy at humanity's hands; chaordic.	TURQUOISE	U	Holistic: experiential: transpersonal; collective consciousness; collaborative; interconnected.
I	Too soon to say, but should tend to be I-oriented; controlling, consolidating if the pattern holds.	CORAL	V	Next neurological capacities. The theory is open-ended up to the limits of <i>Homo sapiens'</i> brain.
Source: Centre for Human Emergence (Rice, 2009)				

Another interesting possible correlation with ROD exists within the ethics and organizational work of Bob Podolsky (2013). He describes creating hierarchy- and bureaucracy-free organizational structure based upon teams of optimally eight members

which he calls “octalogues.” Interestingly, he diagrams an octalogue with an inner core representing the ethical purpose of the group, plus an outer circle enclosing the whole. This makes the similarity with the ROD diagram striking. The similarity is extended further by his advice to make half the octalogue constituents male (*yang*) and the other half female (*yin*) in order for it to communicate most effectively. He ties his technique back to the 8-fold structure of the human brain that consists of four layers across two hemispheres. Podolsky enumerates the fish brain, overlaid by the reptilian, the mammalian neocortex, and finally the areas such as the prefrontal cortex, supporting spindle neurons that permit self-awareness in higher nervous systems. The left side of the brain is more *yang*, and the right more *yin*. Only humans, cetaceans, the great apes and elephants, are capable of self-awareness which is provided by those most recent brain segments. This would seem to correspond with the Heaven and Earth positions in the ROD model that allow for self-directed or designed evolution and reciprocally, transcendence.

Although not strictly nested as Podolsky describes them, a field of separate octalogue teams can be inter-connected indefinitely to create an extended organizational fabric, which he calls a “holomat” (for a quantum-mechanics-inspired Holotropic Matrix).

Podolsky maintains that these structures result in a system that maximizes creativity and ensures the ethical treatment of all within and outside the purview of the team.

Each unit is connected to its neighbors by an “ethical contract.” There appears to be no intrinsic reason why they should not be recursive in a ROD sense and one could argue

that a large configuration of octalogues would need both nested and laterally affiliated teams, in the same way that ROD would be deployed, in order to manage real-world complexity.

CHAPTER FIVE - CASE STUDIES

CASE STUDIES

5.1 Non-Profit Teaching Association

The first case to be looked at is certainly not hypothetical. It is especially interesting in that it dates from 25 years ago, before the Maharishi-inspired Vedic knowledge base that is the underpinning of this current research had been widely disseminated.

Since the turn of the millennium, when the TM Movement openly ventured into the public arena through national politics as the Natural Law Party, the formal structure of the organization has changed significantly. However, from the late '70s through to the mid-90s, that structure had a direct bearing on the ROD methodology.

Maharishi had organized the management of his teaching organization into what he called the “World Government of the Age of Enlightenment.” It was completely non-political and its sole purview was the domain of consciousness. There was no mandate past the desire to bring growth to higher states of consciousness and improve the quality of life for all citizens of the world, and this administrative structure was simply the best arrangement to facilitate the dissemination of the Transcendental Meditation technique, the core technology for raising individual and group consciousness, and its associated programs. More than 5 million people have learned the TM technique (TM) and to this day it remains the most thoroughly scientifically researched self-development system in the world. There have been more than 40,000 teachers trained who operate in 120 countries around the globe.

The World Government was divided into 10 ministries, and the structure was recursive. Thus there were chief ministers at the international headquarters, at that time located in Seelisberg, near Lucerne in Switzerland; there were national ministers for each national organization; and even the local branch teaching centers were organized the same way, with a governing body divided into 10 ministerial portfolios.

From the period 1980 through 1988, the author was the treasurer and held the portfolio for finance on the governing body of the South African national organization – which managed millions in assets and was incorporated as a tax-exempt non-profit called the South African Association of the Age of Enlightenment [SAAAE (Pty) Ltd]. At that time there were about 35,000 South Africans from all ethnic groups who had learned TM. That number is now over 60,000, thanks to massive teaching campaigns, a hugely successful college, and high-visibility promotion from celebrities like Oprah Winfrey and David Lynch. During the '70s and '80s there were already instruction centers in every metropolitan district of the country, several large retreat properties that were maintained for extended group courses, plus schools and community development outreach centers. As can be expected of the local chapter of any large international educational organization, working in the national finance office involved the management of large numbers of complicated fund and distribution accounts plus intricate negotiations with government regulatory bodies over exchange control. The organization was funding major international projects in 3rd-world areas, as well as its own ongoing teacher

training programs, regular public teaching activities, plus working with tens of thousands of under-privileged school children in the pre-emancipation black homelands and urban townships.

The hidden orchestration of the founder will soon be clearly perceived, but it must be emphasized that for the entire time the author held the 3rd-highest legal office in the SA organization, he had absolutely no notion of any underlying rationale for the choice or ordering of the ministries. Perhaps this biggest irony is also one of the most profound corroborations of the ROD model because when developing his organization design, Maharishi certainly was not building upon the Taoist *taiji bagua*! It appears that the chief ministers at the international headquarters had no idea of any underlying structure either at that time, as evinced by the manifesto of the international head of finance, the Chief Minister of Prosperity and Progress, Jemima Pitman:

Progress should be fulfilling to life, and prosperity should open life to the field of all possibilities... Maharishi's Absolute Theory of Progress forms the philosophy of this ministry (MERU, 1978, p.340).

Reviewing the summary of the theory with all the acuity of hindsight, it is possible to discern the hand of the conductor. Here follow a few excerpts:

Awake in itself, [the Absolute] becomes aware that its own nature is composed of contrasting values: it is full because it is unbounded and it is empty because it is unmanifest. These contrasting values flow towards each other, maintaining the perfect balance that structures the eternal continuum of the Absolute...

Because the activity of nature is balanced, it is able to accomplish its purpose economically, with the least expenditure of energy...

When performed from the quietest level of awareness, which is the expression of the Absolute in individual life, activity is most balanced, most economical, and therefore most progressive and most productive... The quietest level of awareness, the state of least excitation of consciousness, is the home of all the laws of nature. Action performed from this level always brings success and prosperity since it has the support of all the laws of nature... (MERU, 1978, p.341).

The 10 ministries are, in their always specifically ordered arrangement, which coincides exactly with the ROD-derived traditional *bagua*-determined layout order (Figure 5.1b):

1. Ministry for the Development of Consciousness;
2. Ministry of Natural Law and Order;
3. Ministry of Cultural Integrity, Invincibility and World Harmony;
4. Ministry of Education and Enlightenment;
5. Ministry of Celebrations and Fulfillment;
6. Ministry of Prosperity and Progress;
7. Ministry of Information and Inspiration;
8. Ministry of All Possibilities: Research and Development;
9. Ministry for the Capitals of the Age of Enlightenment; and
10. Ministry of Health and Immortality.

Since the organization's core purpose is the teaching and dissemination of procedures for raising human awareness, the Ministry for the Development of Consciousness has a parental role that is the source and goal of all the other areas. Its mandate is to foster and nurture the experience of the Absolute basis of life as a living reality. It promotes

“the unfoldment of the infinite creative potential of individual and collective consciousness”, (MERU, 1978, p.301).

Natural Law and Order is the most outwardly present element. It provided a visible leadership role, inspiring the teachers, chairing all general meetings and presiding over positions of protocol both within the organization and its relationship to the public, the government and all legal matters. The chief minister’s catch line states, “[the ministry] establishes the individual’s awareness in the state of perfect order, the home of natural law.” South Africa’s incumbent was not an especially demonstrative person but he took being the manifest representative of the organization very seriously.

The Ministry of Cultural Integrity, Invincibility and World Harmony was tasked with the Movement’s primary communication with the public, for bringing the various programs, research and knowledge to the attention of citizens and government departments. In other words, at this value-add location in the diagram, it carried the responsibility for deploying the teaching and program innovations in the field. In the words of then Chief Minister Vesey Crichton, it “enlivens in national consciousness the ability to act in accordance with the laws of nature, bringing invincibility to every nation.”

The motto on the great seal of Maharishi International University (now Maharishi University of Management, Fairfield, Iowa) was “Knowledge is Structured in

Consciousness” – implying the upward transformation of knowledge on the basis of developing awareness.

Figure 5.1a – MIU Logo



Source: Trademarkia

The Rt Hon Vernon Katz writes: “[the] Ministry of Education and Enlightenment produces fully educated, or enlightened, individuals who by their very presence bring about an enlightened society”, (MERU, 1978, p.301). It is this ministry’s job to produce programs to incorporate the technology. The idea of focusing on schools was frequently seized upon, but the mandate was education in its broadest scope.

The purpose of Celebrations and Fulfillment is to “enable[s] every man to live fullness of life and promote[s] festivals to inspire greater achievements.” This ministry at the

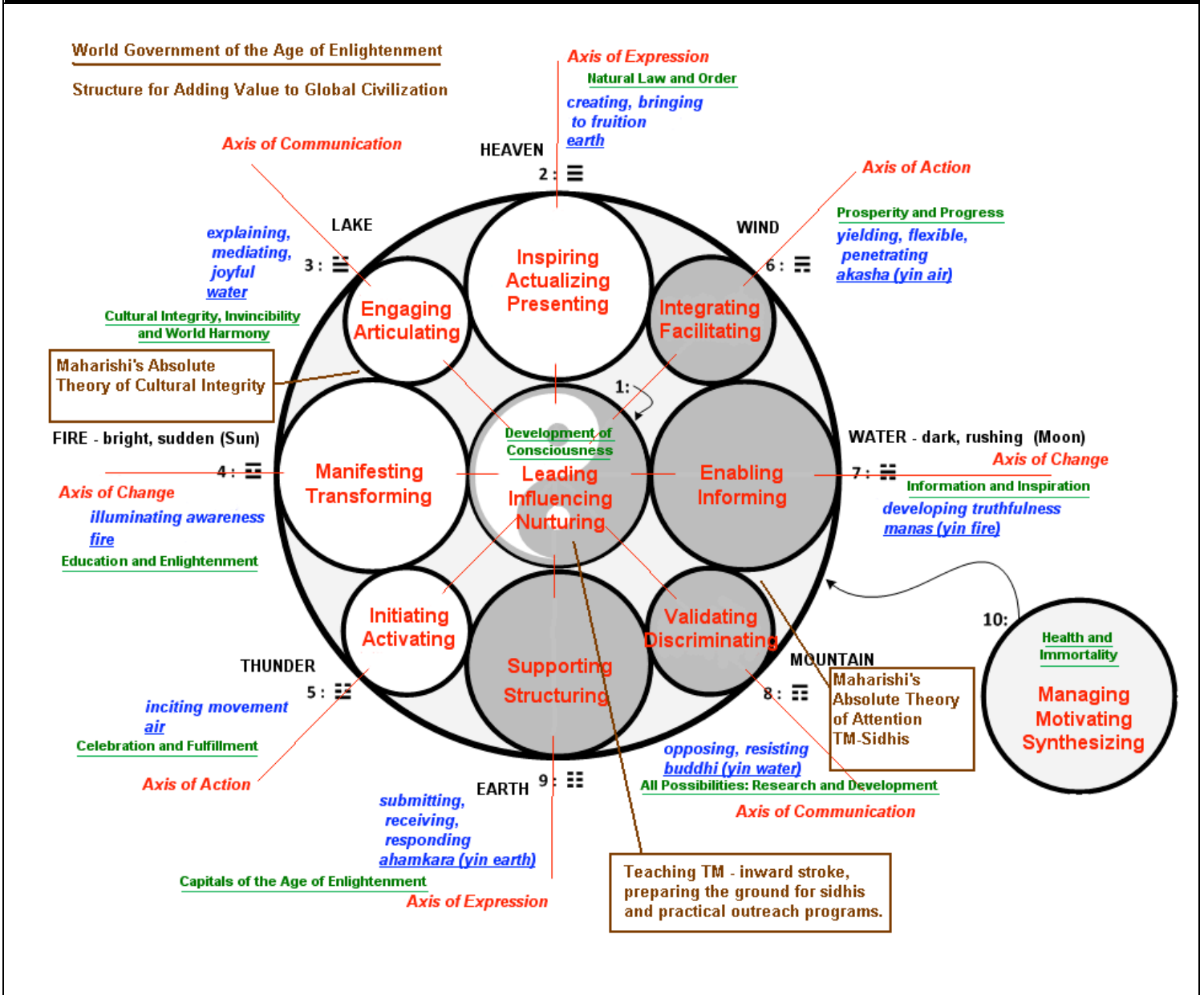
Thunder position sponsors regular celebrations to create the initiating thrill that incites renewed effort towards achieving the outward goals of the organization.

The traditional rules of the diagram, based upon the sequential bifurcation of the *yin/yang* trigram components, specify that the next sphere continue at the start of the *yin* phase at the Wind (☱) point. This indicates an active, integrating function – but one that follows the lead set at the Heaven position (because the subject line is weak). It is the facilitating connection between the outer activities of the organization and the back-end supportive functions. Yet we see that this location is assigned to the portfolio of finance. This brings out a fundamental feature of ROD analysis, in that the placement of a function within the diagram depends upon the organization or industry. Most designs would place finance down in the Mountain location where it serves the purpose of monitoring, validating, policing and vigilance. Within the TM organization, this ministry undertook all the usual tasks of maintaining accurate records and reporting, but its overarching function was an integrative one. It was there to facilitate the activities of the Movement rather than being focused on measuring them. Unlike many companies, the purpose of SAAAE was not to make money for either itself or its principals and the organization's success could not effectively be measured by its income statement.

The cardinal Water point is occupied by the Ministry of Information and Inspiration, whose charter states that it “stabilizes the field of infinite correlation in human awareness, enabling all impulses of information to enjoy frictionless flow.” The ROD

template tells us that this sphere is informing in quality. It represents mind and has the configuration of only an expressed movement or process line, indicating flow.

Figure 5.1b – TM Organization Structure



Source: Author

The philosophy is based in Maharishi's Absolute Theory of Information and bears striking resemblances to the role of Acquisition Architect in the BI model discussed earlier.

The Ministry of All Possibilities, Research and Development falls in the sphere of validation and discrimination with the Vedic *mandala* quality of intellect, and fulfills the requirements of scientific and personal inner research into the teaching programs. The glyph is very *yin*, a deeply supporting role, but shows a single emphasis in the object or attention line at the top (☷). Almost prophetically, for ROD, the ministry's philosophy is based around Maharishi's Absolute Theory of Attention.

In the 100% shadowy *yin* Earth position, we see the equivalent of the hardware and network backbone in the BI example. Here we find the infrastructural background that provides the foundational platform for launching the outward expressions of the organization's activities. These are the buildings, offices, lecture halls, residence properties and other facilities that house the ongoing business of the company, plus any associated maintenance and procurement operations. Within the TM Movement, this was called the Ministry for Capitals of the Age of Enlightenment.

During the formulation of the theoretical framework for the ROD model it was explained that the inner sphere represented the internal wholeness of the Self (the Taoist *wuji* or

Vedic *atman*). It is literally the inner sphere. In contrast, the outer circle, sphere #10, is an all-inclusive, group wholeness (the Taoist *Dao*, or Vedic *Brahman*). It includes not just the inner subjective experience but also the outer manifest reality, its integrity and equally eternal nature. In Vedic terms we saw that Rig Veda was the story of consciousness, the *samhita* value of life. The first *mandala* or book of Rig Veda was concerned with consciousness in a wholly subjective and internal context, whereas the 10th book returned to wholeness in the collective. Even if Maharishi guided the formulation of the ministries without the tacit understanding, at that time, of the folks who manned them, one would expect to see the final ministry expressing wholeness in the outer sphere of life. Each of the four Vedas, Rig being the first and primary, has an associated *Upaveda*. An *upaveda* is an ancillary text that provides an applied discipline related to its parent scripture. During the '80s, the organization was just beginning to introduce formal programs based upon each of the *Upavedas* and appropriately, the *upaveda* of Rig Veda was the first deployed publicly, viz. Ayurveda, the science of life, health and traditional Vedic medicine. The goal of Ayurveda is the healthful prolonging of life, to provide the container of awareness the perfect instrument for its expression. Therefore, it makes good sense that the corresponding ministry should be the Ministry of Health and Immortality, whose manifesto states that it “creates the state of perfect health by enabling man to live in complete harmony with all the laws of nature. (MERU, 1978, pg 301) Ayurveda was not known within the organization at the time of the publication of “Enlightenment and Invincibility” from where these quotes were drawn.

5.2 Large Retail Chain

In looking at a third example organization, it will be useful to take a different perspective on the ROD process. The initial application model was built using the example of a Business Intelligence department. This is a sharply focused and granular deployment and the various roles assigned to the spheres of influence in the diagram were quite straightforward. There was a more or less one-to-one correspondence between process and role, and all that was required of the analysis was that the intrinsic qualities of the process under review be aligned with the core characteristics of a particular ROD sphere. At this level of granularity, the effect of corporate culture and norms is a given boundary factor in all staffing and design considerations and from a values standpoint, the management style and hiring framework is pretty much a *fait accompli*. The ROD analysis was reduced to matching process qualities with sphere qualities and finding personalities to suit. However, in widening the lens view to cover a national retail sales chain as a complete enterprise, a whole new set of implications come to light.

It was previously suggested that an apparently identical role could find its way into very different spheres when analyzing two separate organizations. We saw in the non-profit teaching association discussed previously that the finance role was slotted into sphere #6 (Wind) and considered a facilitating function. Success in the teaching arena was not measured primarily by financial achievement, but by the numbers and types of courses delivered and the levels of satisfaction gained by course participants. Without adequate

financial resources and prudent accounting and careful facilities management policies, the volunteer association would be severely hampered in the scope of its undertakings but it would not cease to exist in terms of its core mandate. In contrast, a profit-driven sales organization might view finance as an essential validating and measuring mechanism, used by all stakeholders to gauge achievement in its core objectives, determine reward programs and dividends, and provide the criteria for management promotion or dismissal. For these reasons, in the coming analysis of a retail sales chain, finance will be placed into the validating and discriminating sphere #8 (Mountain). And in other companies it might find its home in still other locations because different organizations assign differing values to the function of financial services. To some extent, the actual nature of the business conducted affects how a role is perceived within the organization, but as we zoom out to look at a progressively wider view of the enterprise, the more important this issue of values becomes. Apart from the perceived role of a process or function within the culture, the attributes and qualities of a specific corporate culture determine the style of management hierarchy, the essential flavor of employee relationships, what is rewarded and what is discouraged, the kinds of people and skills the company attracts, and so on. Margaret Wheatley notes that:

All organizations are fractal in nature. I can't think of any organization that isn't deeply patterned with self-similar behaviors evident everywhere.... I am often struck by eerily similar behaviors exhibited by people in an organization, whether I'm meeting with a factory floor employee or a senior executive... These recurring patterns of behavior are what many call the culture of the organization... Fractal order originates when a simple formula is fed back on itself in a complex network... Organizations that display a strong commitment to their values make good use of this fractal creation process. In these organizations, it doesn't matter where you go, whom you talk with, or what that person's role is. By observing the

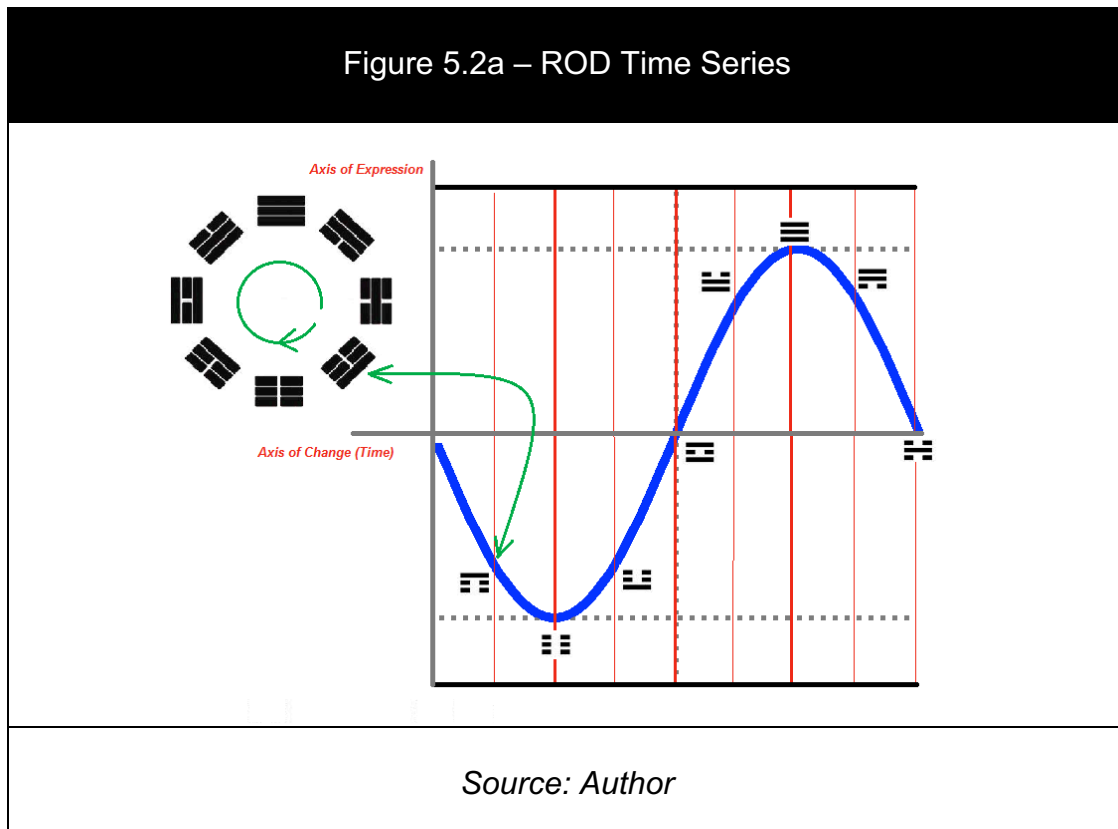
behavior of a production floor employee or a senior executive, you can tell what the organization values and how it chooses to do its work (Wheatley, 2006, p.129).

Nonetheless, whatever the cultural milieu, the core attributes of the ROD spheres of influence remain unchanged. Therefore, which sphere a function gets allocated is directly influenced by the company value system. In an organizational context, the ROD spheres are essentially clusters of values orientation, no doubt reminding the reader of the Spiral Dynamics ^vMeme categories. Recursive Organizational Dynamics provides a mechanism to work that initial discovery process through as it relates to effective organization design.

Before we go on to present a hypothetical layout for a retail operation, plus a couple of expert analyses of a real organization, there is another related philosophical element that must be considered. And that is the impact of time. The reiterative and recursive sequential expression of all the *yin* and *yang* spheres in the ROD diagram happens in time. In referencing the collapse of infinity onto its point value which was earlier noted to be the abstract basis of the self-referral mechanics of wholeness precipitating out into relative expression through a process of sequential symmetry breaking, Michael Dillbeck remarks that the process happens with infinite frequency:

The simultaneous existence of the two contrasting values of infinity and point within pure consciousness can be understood, according to Maharishi, as an infinite frequency of transformation between the two, in which infinity "collapses" to a point and the point expands to infinity (Dillbeck, 1989).

The ROD diagram is circular, which helps convey the idea of the self-referencing nature of consciousness as a loop. According to Anna Bonshek, Maharishi explains that the dynamism of “the evolution of consciousness is structured in self-referral loops of infinite frequency”, (Bonshek, 2007, p.52). This implies an eternal continuum where ‘then’ and ‘now’ have no meaning, where time does not exist in the way we commonly experience it. The function for describing the travel through time of a point around a unit circle (*bagua* or any circle) is a sine wave. Therefore, tracing a point moving around the ROD diagram circle produces a sine wave, which at the level of the Gap, progresses with infinite frequency. Thus, the original trigram representation could be shown as a time-dependent wave as indicated in Figure 5.2a.



For a wave with infinite frequency, the period approaches zero. But we can stretch it out in order to examine its constituent features. Many cultures express the idea of grosser levels of matter in terms of lowering frequencies of vibration. If what Maharishi says is correct, and the sequential symmetry breaking is a result of all the various relationships experienced between the subject, process and object (knower, process-of-knowing, and known) aspects, then we could describe the process of physical manifestation in terms analogous to the superheterodyne principle in radio electronics which deals with frequency mixing. Mixing frequency A with frequency B results in frequency A plus frequency B plus the creation of $(A + B)$ and $(A - B)$. This is the underlying basis of encoding and decoding any radio or television signal and involves the process of introducing (mixing) intermediate frequencies (IF) to assist in stripping off the wanted informational signal from the unwieldy high-frequency broadcast carrier wave. The lower the frequency of the resultant wave, the longer its period. Or in other words, the longer it takes to complete a circuit of the ROD diagram, and the more drawn out the experience of the sequential progression along the nodal spheres.

The experience of time is a subjective phenomenon and has no absolute reality. The lives of fruit flies, the flowering and decline of civilizations, and the duration of galaxies all have different time scales. Time is relative, dependent upon the frame of reference of the observer, the perception of frequency, and is wholly dependent upon the level of consciousness. Athletes in the “zone,” meditators in altered or transcendental states of consciousness, and other people under moments of extraordinary clarity all report the experience of time dilation. Time for these folks appears to slow or stand still.

Physicist Davide Fiscaletti notes that:

Space-time is a math model into which one describes motion of massive bodies and particles in space. There is no experimental evidence about space-time existing as a physical reality. With clocks one does not measure time, one measures duration of movement of bodies and particles in space (Fiscaletti, 2011).

Echoing these notions of the artificiality of time, Lincoln Barnett wrote:

Einstein carried this train of logic to its ultimate limits by showing that even space and time are forms of intuition, which can no more be divorced from consciousness than can our concepts of colour, shape, or size. Space has no objective reality except as an order or arrangement of the objects we perceive in it, and time has no independent existence apart from the order of events by which we measure it (Barnett, 1948, p. 14 – with a foreword by Albert Einstein).

Earlier, a tentative connection to ROD and the Laws of Thermodynamics was made. In this regard, Swenson asserts that “it is with the second law that a basic nomological understanding of end-directedness, and time itself, the ordinary experience of then and now, of the flow of things, came into the world”, (Swenson).

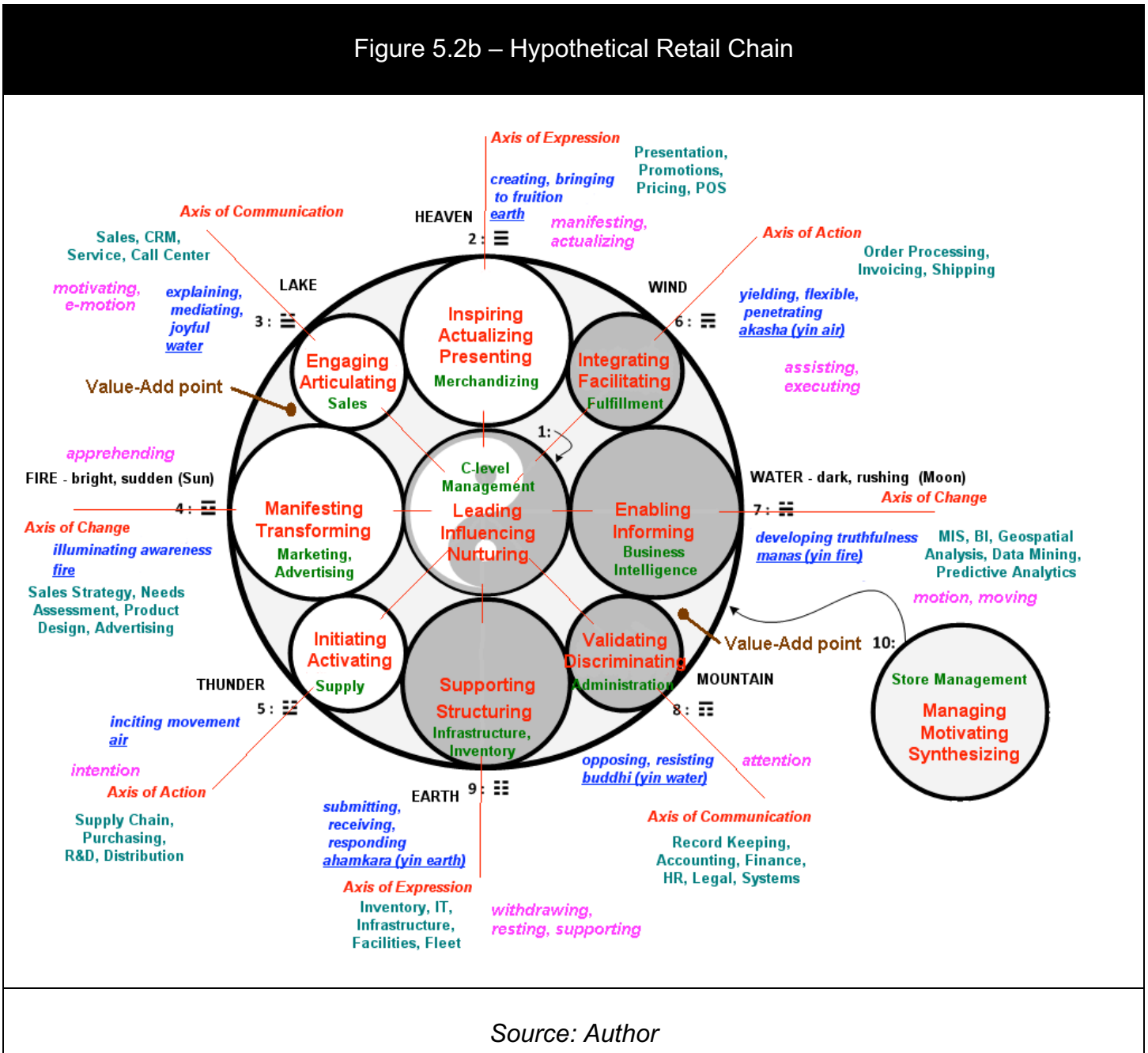
Closing the loop on these arguments, it will be recalled that Recursive Organizational Dynamics is predicated upon the idea of the universe being fractal in nature. At every level of observation, it is found that the process of evolution is self-similar. Now it is posited that not only is it self-similar, but that at more material, concrete levels of expression, the cyclic nature of the fractal patterns run slower, with reference to our normal human waking experience, and become more conceptual and intangible. It is as

though the sequence of the spheres in the ROD diagram were extruded through the particular life cycle and purpose of the subject.

At the level of the quantum foam, components are ultimately granular but also transposable, whereas the more surface levels are more specialized in function but more generalized in scope. In an earlier chapter it was discovered that a wonderful feature of *taijiquan* is that it is like a pantograph on the inner workings of nature, slowed to a timeframe that allows for minutely focused introspection. *Taiji* permits a practitioner to take an intrinsically microscopic and infinite-frequency quantum process and time-dilate it and make it manifest on the surface level of life to experience and imbibe. Similarly, in the living organization, the cycle of processes takes longer the higher up and more all-encompassing the perspective. Taken from a holistic vantage, an organization has a very specific overarching purpose and yet at the same time, the more generalized and values-based the various functional components appear to become. This is to say that viewed from the perspective of the corporation as a whole, finance is a general concept or process that reflects and serves organizational values. But at the level of an actual departmental finance group, finance is a collection of very atomic roles and processes. Therefore, when performing a ROD analysis at the overall level of the enterprise, it is necessary to think in terms of values rather than specific processes.

Figure 5.2b is a hypothetical analysis of a large retail chain. It was designed to reflect the processes operating within a large business with skilled advisory sales associates, such as Sears, for example.

Figure 5.2b – Hypothetical Retail Chain



Arguably the initiatory process in the sales cycle is the company's **Purchasing** decision. This has the quality of intention to deliver. For this reason, purchasing, together with related supply chain activities, was allocated the Thunder position at the start of the *yang* phase in ROD sphere#5 on the *yang* axis of action.

Then on the axis of change at the Fire cardinal point is the principal linkage between the raw materials and the finished goods in the sense of making them available and appealing to the consumer. Here in the roles responsible for bringing the product to market, we find **Marketing** efforts and **Advertising** and other related tasks of sales strategy, needs assessment and product design. Here the selling strategy is apprehended and formulated, customer needs are anticipated or developed, and where the amorphous commodity is turned into a saleable and desirable product. This is the birth place of the ubiquitous sales training "FAB Statements", where the formulation of, and distinction between, features, advantages and benefits originate. In a retail profit-making venture, value is clearly added here in the transition point to sphere#3. It is "where the rubber meets the road."

The place where the customer is actually engaged and "sold" is at the Lake location on the axis of communication. Therefore it is here that we allocate the actual **Sales** force and related processes such as Call Center, service and after-sales assistance, and Customer Relationship Management. This point has a personal and motivating focus, rather than purely product-oriented purpose. This analysis sees salespeople as motivators and articulators, rather than product pushers. In the trigram glyph for this

sphere we see an expressed subject (intention) line together with an expressed process (dynamism) line – but a subdued object *yao*, giving the idea of explaining and/or mediation.

Moving on to the top of the diagram, at first glance it might seem peculiar that **Merchandizing** find its home in Heaven, the most outwardly presenting location. It has such a humble reputation. However, it is the function of merchandizing that is the prime and direct interface with the consumer, where most of the ideas and strategies of marketing are first presented to the customer, where the insights gained from market research and analysis are deployed, and where the physical message and buying inspiration are first expressed and presented. On the most mundane level, it is a function of merchandizing whether or not the shelves are stocked with product in the first place, and no sale is thus possible without it. The *yang*, customer-facing, sales side of the diagram completed, it is now time to elucidate the *yin*, infrastructural, support side of the retail sales equation.

Beginning in Wind, the ROD sphere#6 position on the *yin* axis of action, we find the processes associated with **Fulfillment**, the actions needed to consummate the sale. Although at the start of the *yin* phase, the trigram presents a majority *yang* composition with an emphasized dynamism/process and object orientation. Therefore, in a retail sales context, this first locus is very close to the consumer. The sale has been made and now the primary linkage has to be made from the customer to an article sitting in a

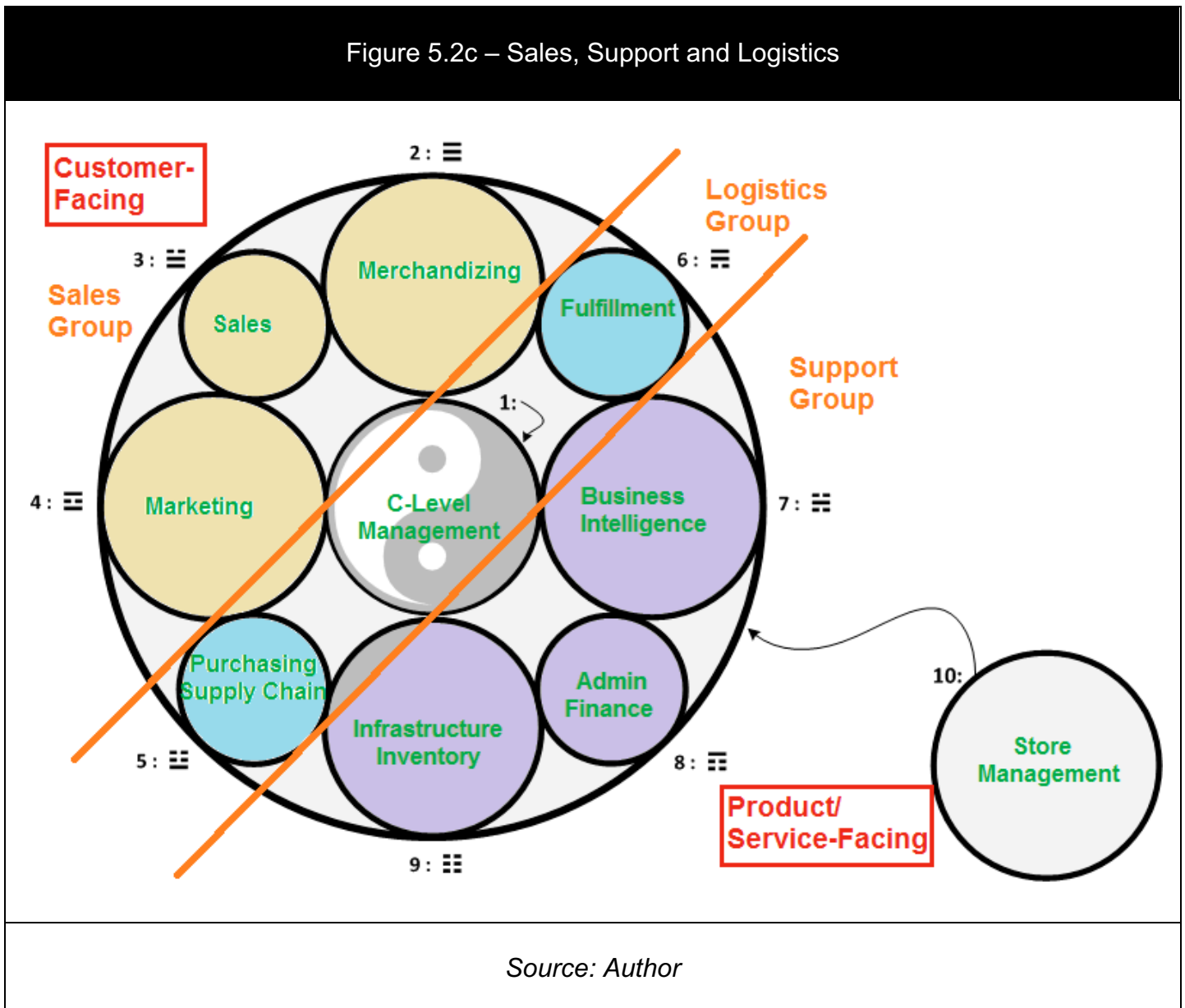
warehouse or distribution center. ROD correlates this to an integrative or facilitating relationship. At this point also would be the gathering of after-sale data regarding the customer, such as the basic POS information, any survey information or satisfaction assessments, demographics, geospatial references, and so on.

In the next position, we find the cardinal Water location on the all-important axis of change. ROD gives this location the qualities of enabling and informing. It is the principal connection between customer insights and resulting product mix. In a general sense, it is the evolutionary pathway between the *yang* customer at the top and the characteristics of the inventory at the bottom in *yin*. In fact, as *yin* Fire, it is the shadow partner of the Marketing Fire position. Fire brings change. Because these two prime loci on the axis of change between them are responsible for the growth and evolution of the business, it is often hard to distinguish each other's roles. In this instance, we assign the role of **Business Intelligence** to ROD sphere#7 with the associated tasks of MIS, geospatial analysis and data mining, and predictive analysis. The prime importance of BI is becoming more generally recognized within the business community.

In turn, the insights gained through BI shape the organization's criteria for measurement of success. Those **Administration** processes of record keeping, accounting and finance systems, together with backup support from general administration, HR and legal, make up the validating, vigilant and discriminating context of ROD sphere#8 at Mountain.

Finally the most *yin* functions supporting and structuring the organization are located at the Earth point in sphere#9. Here we find the physical **Infrastructure**, stores, fleet, data centers, information processing hardware, databases, inventory, etc, plus the maintenance roles required to keep them in good order.

Figure 5.2c – Sales, Support and Logistics

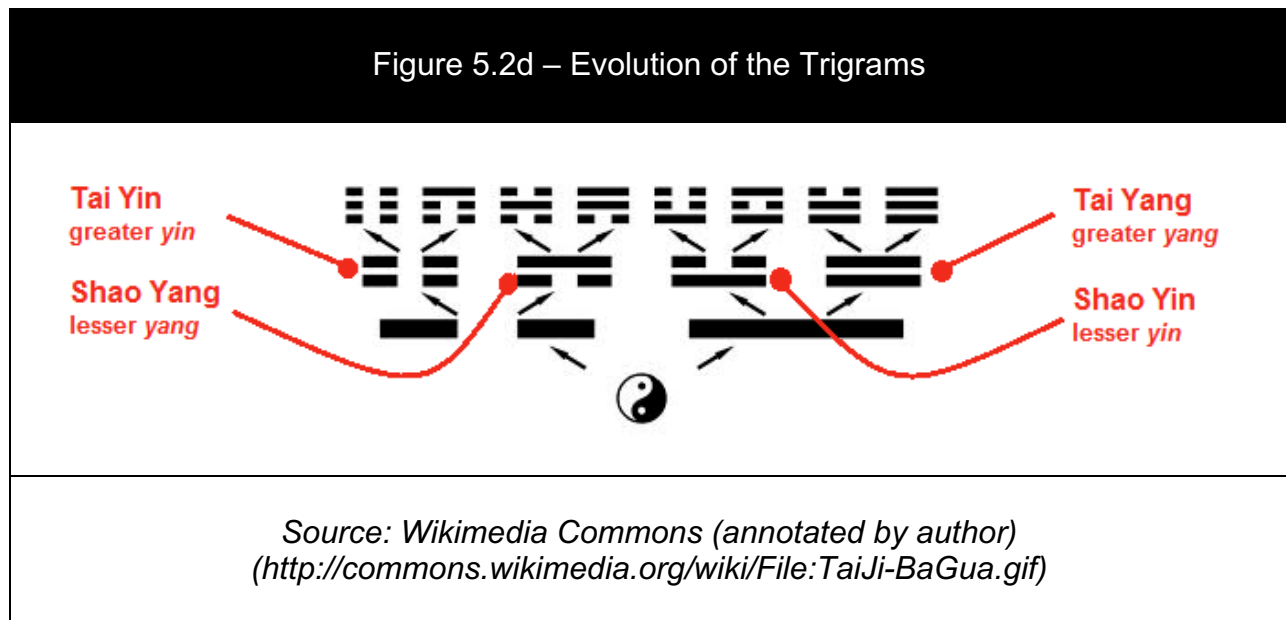


We must also not forget the central and outer spheres, #1 and #10. In the center is the seat of leadership which has been assigned to top management. The outer circle corresponds with operational management and here we located store management. One could argue that within any retail organization, the bright *yang* half represents sales functions, and the dark *yin* side comprises all the sales support functions.

But there appears to be a glaring omission in that there has been no mention of Logistics. As a colleague remarked, “Logistics is everything. That’s why Wal-Mart hires [logistics personnel] from the military”, (Walmart, 2013). In order to see the relationship between sales, support and logistics, we have to return to the **triad** version of the ROD diagram introduced in the Business Intelligence case. Figure 5.2c shows the central triad on the axis of action comprising the logistics functions.

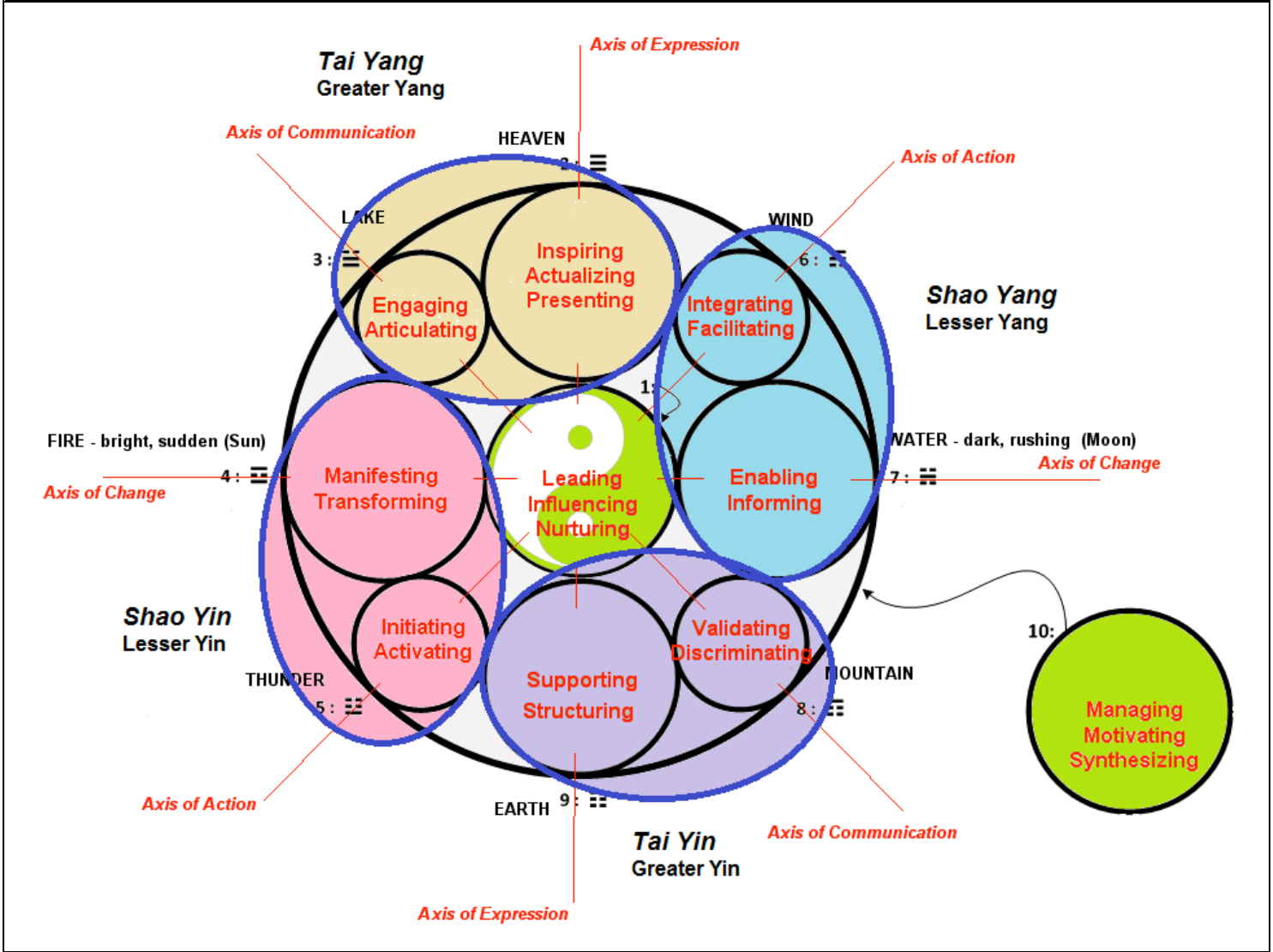
At this stage, in order to fully discuss this retail sales case, it is necessary to bring out one more feature of the diagram. Throughout the process the influence of two, three and four was noticed. It was noted while developing the ROD framework that the Taoists see the emergence of the *bagua* as a sequential bifurcation from *wuji* (one, in the form of *taiji*) to *liangyi* (two, *yin* and *yang*) to *sixiang* (four emblematic symbols) to *bagua* (eight natures). Although the concept of *sixiang* is central to Chinese Yijing thought, its importance was deliberately played down because it is really just an artifact of the mathematics. The initial design process wanted to focus upon the 3-in-1 phenomenology of *Dao* being the togetherness of *wuji* (one) and *taiji* (three). This is *san*

cai he yi (three merging in one) reflecting the Vedic Science *samhita* (wholeness) of *rishi* (subject), *devata* (process) and *chhandas* (object). The entire basis of Recursive Organizational Dynamics is structured upon this ontology of consciousness producing the phenomenal world through a process of sequential symmetry breaking. An additional reason for not emphasizing *sixiang* was that it was desirable that the controversial 4-elements philosophy not get muddled with the 4-symbols idea. However, some of the consequences of *sixiang*, the four precursors to the *bagua* (ROD spheres) must now be considered.



In the illustration above, it can be seen that on the *yang* side, for example, the Lesser *Yin* gives rise to the Thunder and Fire *bagua*, and Greater *Yang* bifurcates into Lake and Heaven trigrams.

Figure 5.2e – Sixiang Couplets



Source: Author

In the ROD diagram, what one finds is that the spheres functionally form themselves into couplets based upon their *sixiang* parentage (Figure 5.2e). Earlier it was advised that when performing a ROD analysis, the practitioner should at first concentrate upon

the four cardinal positions (Heaven/#2, Fire/#4, Water/#7, and Earth/#9). These are the primary inflection points that command change and growth within the organization, and it is easier to get a handle on the process by initially considering these major spheres of influence. It was noted that this does not mean that the other four *bagua* spheres (Lake/#3, Thunder/#5, Wind/#6, and Mountain/#8) are not important. Nature and the mathematics decree that we need all eight in order for life to progress. But they constitute a more facilitating role for their associated cardinal partner that follows in the cycle. What happens within a minor sphere sets the stage for the dynamics projected through the major spheres. It follows, then, that once the cardinal points have been understood, the purposes of the minor positions will be somewhat clarified *en passant*.

The analysis returns to complete the minor sphere roles in order to flesh out a fuller and richer picture of the organization. This **couplet** (or *sixiang*) feature explains why the primary points of energetic transfer or exchange occur at the transitions between the *sixiang* units. In an organization design context, the ROD research had focused on the “value-add” points between Water and Mountain on the *yin* side, and especially on the interface between Fire and Lake in the *yang* phase. This was because these points had been identified as the principal locations where value was added in the enterprise. For example, it is where the marketing strategy is actualized in a sale, or conversely where an informational insight becomes a product or measurable quantity. Although not as vital to the current organizational context, in the section devoted to future research it will be noted that the prime interface points are actually at the start of the *yang* phase

between Earth and Thunder when the outward expression emerges from the Gap, and all-importantly in the collapse and submergence into the Gap at the end of the *yang* evolution in Heaven as the cycle enters the *yin* half at Wind. These are the subjects of the “eyes” in the *taiji* diagram (Wright, 2007).

Using the retail sales model in Figure 5.2b for example, the fulfillment activities, plus research, requirements gathering and customer surveying conducted at the Wind location, lay the groundwork for the Business Intelligence conducted at the Water point. It is the administrative, monitoring and record-keeping functions of the Mountain sphere that provides the framework for building and maintaining the infrastructural elements described by the Earth segment. These couplet relationships are illustrated in Figure 5.2e and are a direct consequence of their *sixiang* heritage. The additional partnering of the central and circumscribing circles is a natural consequence of their being the inner and outer aspects of the wholeness quality respectively.

Most experts would agree on the overall sales versus support classification, but how each functional group fits within that overall sales-support schema would depend upon the specific type of business and the corporate culture in which it is immersed.

When a new CEO takes over a company, the first thing that usually happens is a painful reorganization designed to revitalize the business and provide a platform for the new incumbent’s corporate culture proclivities. However, Naomi Stanford cautions:

A reorganization or restructuring that focuses – sometimes solely – on the structural aspects is not organization design and is rarely successful. Ask anyone who has been involved in this type of reorganization and there will be stories of confusion, exasperation and stress, and of plummeting morale, motivation and productivity. Most people who have worked in organizations have had this experience. So why is it that initiatives aimed at revitalization, renewal and performance improvement so often miss the mark? The simple answer is that focus on the structure is both not enough and not the right start-point (Stanford, 2007, p.4).

And Tom Davenport, who was a pioneer of reengineering, observes that:

“Reengineering didn’t start out as a code word for bloodshed. Reengineering turned ugly because it treated people inside companies as so many bits and bytes—interchangeable parts to be reengineered”, (Pascale, 2000, p.153)

ROD can fit into any traditional mechanism or style of organization design, or even the reengineering of an existing structure. It simply informs us as to the intrinsic relational properties in the way that natural law sees them. A small department has a number of clearly structured processes. For example, a BI group might include a data architect and a systems designer. These are both very well understood functions and map quite simply to two of the eight ROD spheres of influence. Nevertheless, it was emphasized how it was instructive to see how the roles fit into the pattern of nature and to staff from the knowledge so gained in order to maximize the effectiveness of inter-group relational pathways and communications.

It was noted that it gets more difficult when one views the organization from increasingly wider angles where the analysis does not deal so much in specific roles (e.g. tax

accountant), but more in terms of system concepts, such as “marketing” or “fulfillment.” For this type of analysis it is necessary to involve C-level management. It becomes a fundamentally important review. Now it gets much more interesting because how a component function is categorized at this level (say, merchandizing) really depends upon the specific corporate culture. Thus, at a higher level one finds ROD to be about values. The red general qualities offered within the spheres in the ROD blank template (Figure 4.1a) are intended as a values orienting device. Where a designer assigns a particular function in the ROD diagram determines how that function is regarded within the corporate culture, what the criteria of measurement will be for leadership, the quality of inter-personal relationships, etc. So it is very valuable to be able to put these values decisions within a model that can proactively look at them in a structured way (and tie them back to natural law). To a large extent, it could be argued that the culture is imposed top-down. If one wants to change the prevailing culture, one has to change the leadership perspective. One could even assert that the most important role of the leadership in an organization is in setting the values and nurturing a culture that promotes them. Hence, the research stresses the importance of top management involvement in *any* organizational design, especially ROD.

In order to illustrate and explicate how differing values orientations affect a ROD design, two senior marketing specialists were engaged to perform a ROD analysis of marketing functions within the world’s largest retail corporation comprising 2.2 million employees (CNN, 2012). Each of these marketing executives had a very different orientation

towards the business based upon their specific roles, business sector addressed, and their own mandates and responsibilities.

The first research participant is a national account director supporting a particular fresh produce brand (Baker). She is responsible for leading growth, optimizing the business, and maximizing the success of new product launches. Her background is in business and marketing management and she holds an MBA with a marketing focus. Her initial ROD analysis is shown in Figure 5.2f.

The second research contributor was a vice president of a consulting partner to the business in charge of retail shopper marketing strategy (Treece). His current focus is retail design kits and managing the “path to purchase.” He comes to this present role from an advertising background where he held positions as group creative director for several agencies. His first ROD analysis is shown in Figure 5.2g.

Although it is difficult to divorce brand and product, it would be fair to say that Baker is more product-focused, whereas Treece has a primarily branding orientation. Baker represents a merchant relationship with the target organization, and Treece represented an agency relationship.

Each participant was given a brief summary overview of the ROD method and provided blank ROD templates (Figure 4.1a), and a sample list of generalized corporate

functions, grouped in a way that did not necessarily lend itself to a straightforward mapping. It was simply intended as an orienting mechanism and there was no mandate to use any or all of the tabulated organizational functions. For example:

- Sales & Marketing
 - i. Sales
 - ii. Marketing
 - iii. Advertising
 - iv. Merchandizing
 - v. Media
 - vi. CRM
 - vii. Call Center
 - viii. Customer Service
 - ix. Strategy
 - x. Needs Assessment
 - xi. Product Design

The full list of illustrative functions is provided in Appendix A. The participants were told that the list was not exhaustive, and that they were welcome to add any other items they considered necessary or appropriate.

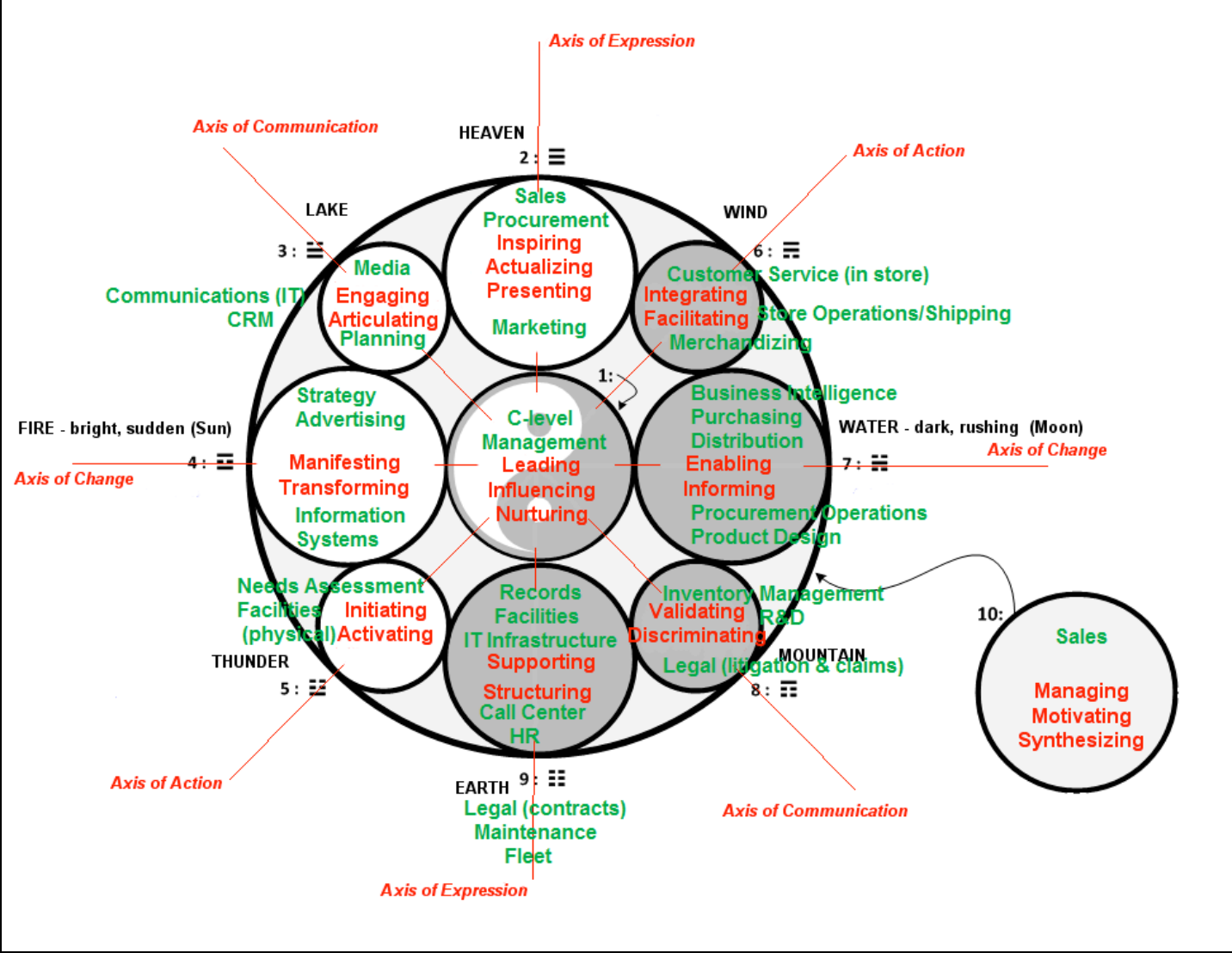
The couplet and triad aspects discussed above were not included in the initial briefing session. After the ROD method was described in the initial interview, the process appeared easy to the participants. The concepts are, after all, fairly straightforward. But unlike the common-sense analysis of a departmental group, it requires deep reflection to undertake even a cursory high-level ROD analysis. Core values cannot be adequately articulated by spur-of-the-moment or impulsive thinking.

The first iteration of ROD sphere to business function correlations was completed quickly. Allocated roles were written into the ROD template as they first appeared in the participant's awareness. But then things started to be crossed out and replaced by others as intuitive experience kicked in and the subjects thought more about it. Because the lower down in an organization the analysis is performed, the more granular the processes, it was desired that the participants have a high-level view in order to accentuate the values considerations. At a departmental level, the analysis can devolve into a simple role/sphere matching exercise. So as an initial foray into the subject, Baker was asked to model her notion of the CEO's view of the business. On the surface of it, Baker's analysis looks very different from the hypothetical example given in Figure 5.2b. Probably as a result of her deep involvement with the day-to-day operations of her division, we find that the analysis is quite granular. It is more function oriented than the supplied hypothetical example which took a higher level process oriented view. Nevertheless, once staffing differences (Wal-Mart does not have a sales force *per se*) and corporation-specific language are accounted for, it will be seen that the two analyses are actually very congruent.

Baker preferred to mark up her provided list of corporate functions instead of the ROD template. The principal items were transcribed into Figure 5.2e. A couple of minor elements were left off for clarity and to avoid overcrowding the diagram. She also used for reference a customized training sheet from Exceleration Training called "Hierarchy of Consumer Promotion Planning" which is included in Appendix A. Her rationale for the

process allocation choices and how the allocations relate to the sample hypothetical layout were reviewed in a follow-up interview on July 3rd, 2013 and are summarized as follows, together with a reflective commentary.

Figure 5.2f – Baker’s Initial Analysis



Source: Author

For consistency of interpretation, the analysis will start in the Thunder position at ROD sphere#5 and work its way around the cycle clockwise as before. Into this location, Baker assigned Needs Assessment and physical facilities. In a scenario where product provisioning and merchandizing is the responsibility of a phalanx of contracted merchants, there is a clear argument for suggesting that a needs assessment is the beginning of the sales process. Bearing in mind that logistics form the axis of action in this retail mapping, there is also some support for placing physical facilities in this location. In hindsight, it is felt that the sales/support/logistics triad should have formed a part of the initial training session to help clarify the energetic pathways involved.

Into the manifesting and transformative Fire position, Baker puts information systems, marketing strategy, and advertising. In view of the fact that she placed transactional systems in the Earth sphere at the bottom, her choice of locating information systems here cannot be faulted. It demonstrates a clear understanding of the ROD energetic distinction between intelligence, data, information, and application. Information Systems was not included in the example because that model is taking a more abstract view of the business, but the theory concurs wholeheartedly in the context that Baker has chosen. It must be recalled that Information Systems itself would become the subject of its own ROD analysis and the interface with the sphere currently under consideration would likely be the customer-facing portion of the sub-model. Baker states that marketing and strategy are shown in separate spheres in this analysis on account of the way the organization is structured. As she points out, the strategy group does not

execute, whereas what she referred to as “Marketing,” in the Wal-Mart context are the folks presenting, for the simple reason that there is no Wal-Mart sales force. She astutely notes that in her business, the advertising people are the ones who transform strategy into actionable concepts, public relations campaigns, and so on. Strategy is in itself a transformative function, albeit at a higher level of abstraction.

Moving round to the Lake segment, Baker presents cogent reasons for assigning media, planning, communications, and CRM. In any modern global sales corporation, and especially within the Wal-Mart model, media is how the marketing message gets out. For Wal-Mart, store count and ubiquity serve a potent “media” function. It is the primary way that the consumer is engaged. In the business under scrutiny, “planning” is a specific corporate function that is responsible for articulating strategy and providing supporting data to the “Sales” people. That is, the buyers and merchants who are responsible for sales strategy delivery as explained below.

Since the organization has no formal sales force in the stores to promote or facilitate sales, she redefined the term “Sales” to mean buyers or “merchants” in Wal-Mart terminology. In the final essence, Baker notes, Sales is in reality done through everyday low price perception, assortment and store signage, and less by store personnel directly engaging the customer with their offerings. In contrast, using the jargon of her environment, the term “merchandisers” was restricted to the people who actually physically stock the shelves, coolers and display stands in the stores. Therefore, in this

context, the process she labeled “Sales” could be construed as synonymous with the generalized concept of “Merchandizing” used in the initial sample. In addition, she situated “Marketing” in the top segment because in the environment at hand, she maintains that marketing is the primary interface to the consumer – since there is no real sales force. Finding procurement here is surprising but Baker defends her choice by saying that in this context, “Procurement” refers to the actual physical obtaining of product from suppliers and the term is to be clearly distinguished from the purchasing function.

In line with the above explication, Merchandizing was placed in the Wind sphere at the start of the *yin* phase. The rationale was that staff who stock the stores directly facilitate the sale and support the sales objective, and therefore fulfill the energetic mandate of the ROD location. In Wind go also the in-store customer service functions. As those who have visited these customer service kiosks can attest, there is no proactive engagement with the customer. The staff does little more than scan returns back into stock and issue a cash refund. However, since the engagement is direct and in person, and the in-store facilities directly support the sales effort, the allocation to this ROD sphere does make sense. Store operations and shipping were placed here also, and is in complete accord with the ROD sample.

Into the cardinal Water position she places Business Intelligence, which is in agreement with the author’s assessment. However, here she co-locates purchasing. Purchasing, in

terms of supplier rules and recommendations as distinct from procurement described earlier, is an enabling infrastructural function. This is carried out by the Global Food Sourcing division in Baker's environment. The same rationale was applied to the inclusion here of distribution. In a sense these are both true statements, but once again, we might have elicited a slightly different perspective from the participant had the logistics axis been better explained by the researcher. Product design is an interesting choice for inclusion in this segment also, but fits energetically with the *yin* Fire position much better than the logistics allocations.

Inventory management is a vital concern in any high stock-turn environment and is a particularly important issue for Baker whose focus is perishable produce. She assigns it to the validating sphere in Mountain because she feels that it serves a purely validating role, triggering replenishment processes vital to business operations, but without doing anything actively in and of itself. This is a classic case of role-specific values perspective. Her reasoning is well understood, but with a background in inventory optimization, albeit within different industry segments, the author would not assign it this position. The example of Figure 5.2b assigned record-keeping and accounting systems to this locale, and run-of-the-mill ordering mechanisms would fall into this category. But a function as strategic, and with ability to so definitively impact the bottom line, inventory management would be perhaps better considered an informing and enabling facility. It really boils down to how clever the system is, whether it is truly inventory management

as opposed to inventory control. In the Mountain segment also, Baker allocates legal issues specifically with respect to customer claims.

On the other hand, she considers legal matters involving contracts with merchants to be a wholly infrastructural support function in the bottom Earth sphere. In this last location she also puts the call center. She located the in-store customer service facilities in the Wind segment because they were dealing directly with the customer and at the place of sales activity. She has valid arguments when asserting that a remote dial-in service facility does not have the same point-of-sale impact. It is assumed that she is referring to support issues rather than Internet-based sales operations since they do not apply to her field of influence. Finally, in the most *yin* support area, she also puts the expected facilities management, fleet and maintenance operations.

At this point, a number of shortcomings in the experimental design came to light which forced a re-evaluation of how to proceed with the case study.

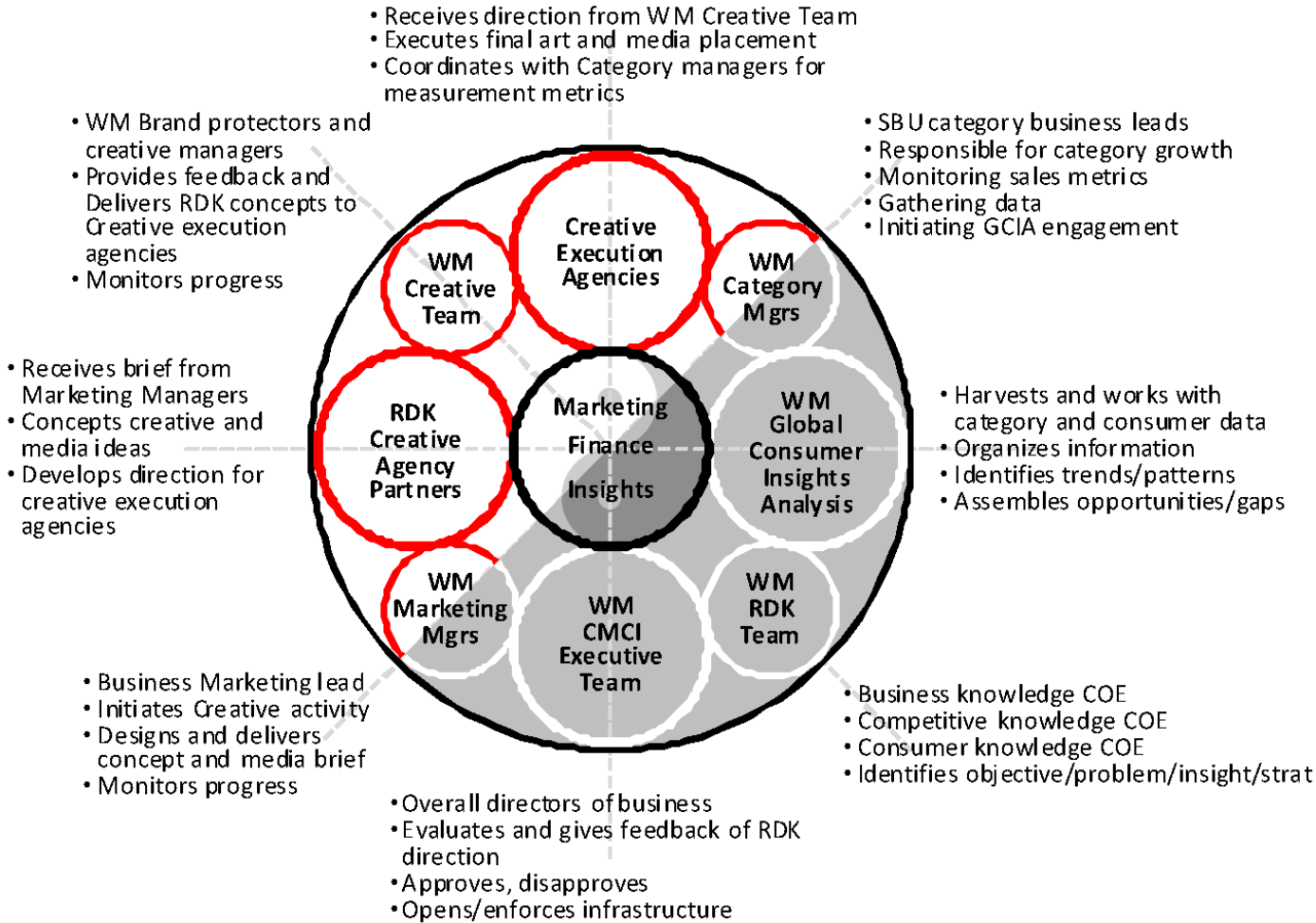
One's internal value system, what will be referred to here as a **values context**, comes along wherever one goes. For this reason, it aligns with the ROD spheres in terms of latent evolutionary pathways and relationship dynamics. What changes from person to person, and from company to company, is the cultural or values-based assignment of roles and processes within that values context framework. Therefore it is possible to put oneself in the position of a CEO of a hypothetical company as in Figure 5.2b. However,

there appears to be difficulty projecting oneself into an imaginary CEO role when one is already ensconced further down within that organization, and therefore already subject to an existing values framework. This might be an impossible assessment since that existing cultural framework was what projected the organizational structure under review. Hence, one is hampered by one's familiarity with an organization structure that may not be congruent with one's own values context.

Treece (our second participant) recognized this and restricted himself to modeling only that part of the organization where he was directly involved and over which he had some influence. His analysis follows, but it brings out yet one more important consideration. It has been noted that the higher up within the hierarchical structure one rises, the most generalized and abstract the ROD sphere contents become. We identified this as the progression from an atomic roles- or functions-based correspondence to a culture- or values-based perspective of process and contribution.

In order to compare differing values contexts of different perspectives into and within the same organization, we have to be taking a consistent view. In other words, it has little meaning to have one person looking at the departmental level while another is zoomed out to a 30,000 ft senior management purview. For this the term **altitude congruency** has been coined. To have a useful discussion of values viewpoints around an organization design, there has to be altitude congruency between the analyzing parties.

Figure 5.2g – Treece’s Initial Analysis



Source: Dale Treece

Since Treece discharged the assignment at his own level of involvement, Baker was asked to produce another analysis of her own organization where it has a direct interface into Treece's. In this way, altitude congruence was restored and an assignment comparison was possible. Baker's reassessment will be presented after the Treece analysis which begins with Figure 5.2g. This diagram is Treece's own working version of the ROD template. SBU is an abbreviation for "Strategic Business Unit," the initials COE stand for "Center of Excellence," and RDK means "Retail Design Kits."

Looking initially, in ROD fashion, at the cardinal points, we find that Treece has mapped the marketing development environment correctly and insightfully.

For this particular review, it will be logical to follow the process around starting on the *yin* side in the Water sphere#7, in the segment that he has identified as "Wal-Mart Global Consumer Insights Analysis (GCI)." This is the classic location for where intelligence is made actionable. On an elemental level, this *yin* Fire location correlates with mind and mental activity. It is where data is turned into information. Characterized by an emphasized dynamism line in the trigram glyph, it is defined by horizontal and vertical thinking, it is pure process.

At the Earth point, Treece places the "Wal-Mart CMCI Executive Team." Having approved the project objectives, they form the supporting structure or steering committee that is the project administrative framework.

Moving round now into the *yang* arena, we find in the Fire location the creative folks who are responsible for turning the insights gained in Water and structured in Earth into an actionable campaign that is the axis of change basis for moving the business forward. Treece identifies himself and his own team at this locus which he calls “RDK Creative Agency Partners.” These are non-Wal-Mart consulting partners who are retained to provide creative, media and strategic shopper marketing value to the sales effort.

That creative direction provided in Fire finds its manifest deployment in the work product of specialist advertising, media and marketing agencies located in the Heaven segment and labeled by Treece as “Creative Execution Agencies.”

His diagram provides detailed information regarding the specific roles, responsibilities and work product emanating from each ROD sphere of influence. Treece noted that he found some difficulty completing the minor sphere assignments. He relates that in a moment of epiphany, he realized that the way to understand and categorize the various contributions of each ROD segment was to think in terms of output. What was the output of each organizational group, and furthermore, what is the assessed value of that output contribution to the whole? Clearly, the concept of output is greatly assisted by the couplet method of analysis. In any couplet, what is contributed in order to provide the raw material that is structured in the following cardinal position?

Thus, Treece finds in the Wind sphere#6 the “Wal-Mart Category Managers.” These are the people responsible for category growth and are therefore the natural interface between the marketing effort output associated with the Heaven segment, and the insights mining conducted in the Water sphere#7. They perform the function of gathering the raw customer and performance data that is used for marketing analysis.

In this particular analysis, this position is of pivotal importance in that it is the cross-over into Baker’s analysis of her organizational unit. Like Treece, Baker is not actually employed by the target organization. But for the purposes of this comparative analysis, her role can be considered synonymous with a category manager. As a merchant or buyer for an independent organization selling through Wal-Mart stores, she is responsible for the sales growth and general management of her category within the Wal-Mart network. This is the area that she identifies as “Sales” and to a large extent “Procurement” and “Marketing” in the Heaven position in her diagram shown in Figure 5.2f. It is this location which will be blown out recursively into its own ROD model in her forthcoming reassessment.

In this way, we have our first clear example of how a particular function or process is given a differing values-context assignment depending upon the vantage point of the organization structure analyst. In this case the perspective is influenced by altitude (granularity of vision), specific business product, organizational orientation, and cultural values context. Treece sees a Wind contribution. Baker sees it as Heaven in her initial

enterprise model. And in her process-level version it will be seen that she finds the essential contribution of her group towards Treece's model as coming from her Water position.

Returning now to the minor loci in Figure 5.2g, the *yin* value-add point in Treece's diagram comes when the insights analysis is crystallized into a clearly articulated problem statement and set of solution objectives by the "Wal-Mart RDK Team" at the Mountain sphere#8 position. Mountain is the enabling partner in the Greater *Yin* couplet coalescing into the Earth infrastructure.

At the beginning of the *yang* phase Treece finds "Wal-Mart Marketing Managers" in the Thunder sphere#5 spot. Once again, there is a tie-in to Baker's work because these marketing managers are represented as "Marketing" in her Figure 5.2e Heaven segment. This is of particular interest because what she considers to be the most expressed and characterizing elements in her enterprise chart form both the *yin* facilitating and *yang* activating aspects of the axis of action in Treece's analysis. In this is found a great deal of mutual support and confirmation in that the primary output of her analysis forms the incentive to change in the marketing model, which in turn is charged with effecting that change.

Finally, Treece sees the “Wal-Mart Creative Team” articulating the creative plan to the appropriate creative agencies, being the mediation channel, and communicating brand guidelines and mandates to the field.

Baker explains that there are a number functions that are critical to the category management process, as it relates to providing an input for Treece’s model just described, but that several of those are actually separate divisions within the enterprise with no direct-report relationship into her organization. It is important to recognize that this fact is not important from a ROD point of view. The analysis is not dealing with a block-and-line organizational reporting structure (an org chart), but with the pattern of hierarchy-independent impactful relationships and communication pathways.

She identifies the most important function as that of “planners.” In this environment, planners are the IT-oriented people who perform the POS analysis, data mining, and demand forecasting that form the primary metrics input to Treece’s model at the category manager point in Wind. A related function, which forms the enabling couplet partner for the planners, she labels directly as “category management.” These are the people who analyze internal data, external (e.g. suppliers’) data, and industry marketing, statistical and demographic data such as Nielsen and IRI. As a result of those forward demand forecasts, the replenishment group creates purchase orders, and works with suppliers to manage product flow. Although co-located in Wal-Mart’s head office in Bentonville, Arkansas, since replenishment is a separate entity within the Wal-

Mart enterprise, the category manager is not accountable for more than effective forecasting and plans to grow the business, as measured by sales achievement against target and other such criteria that would normally be applied to a purely sales function. And hence Baker's identification of her group as such. The responsibility for choice of suppliers isn't within the category manager's organization either. Suppliers are decided upon and contracts are negotiated and priced by a group that in her culture is called "Global Food Sourcing" with offices in centers such as California, Florida and Costa Rica.

The final parts to the puzzle comprise those folks who drive merchandizing functions. They are the staff responsible for developing a "planogram" for product deployed in the stores on the basis of the planners activities described above. It is then the tactical mandate of the store personnel such as shelf stockers, store and department managers, etc, to discharge the tasks of keeping displays stocked and attractive to properly facilitate selling, and to accurately account for inventory take-off, returns, spoilage and shrinkage.

Figure 5.2h shows the author's allocation of the component processes within Baker's logical organization that synthesizes the outputs of many physical organizations into a single Recursive Organizational Dynamics framework.

During the course of this case study the analysis has looked at a couple of instances of recursion, from Baker’s enterprise vision to her group as a component of both her own detailed account-oriented and Treece’s agency-oriented view.

Figure 5.2h – Baker’s Revised Lower-Altitude Analysis

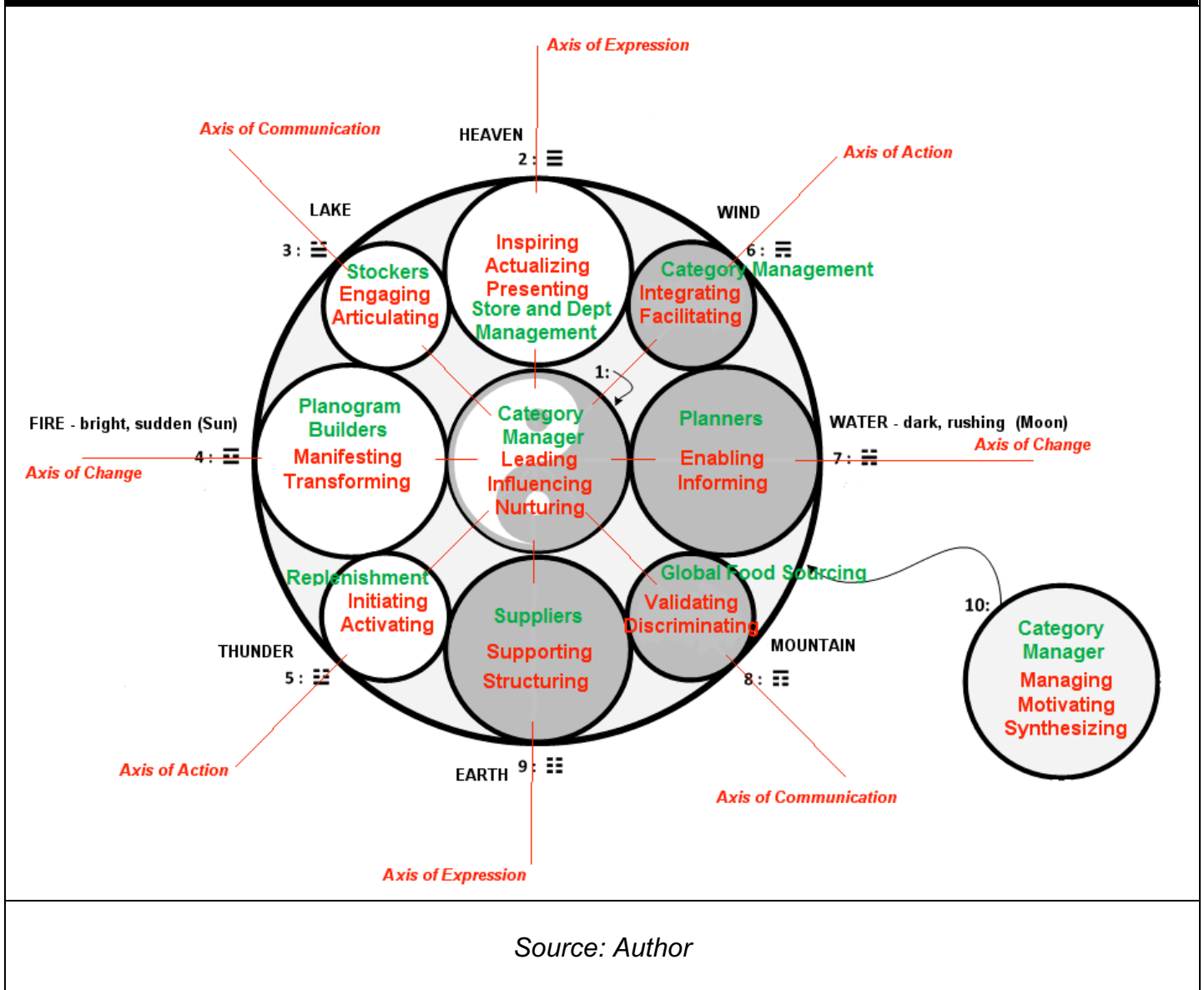
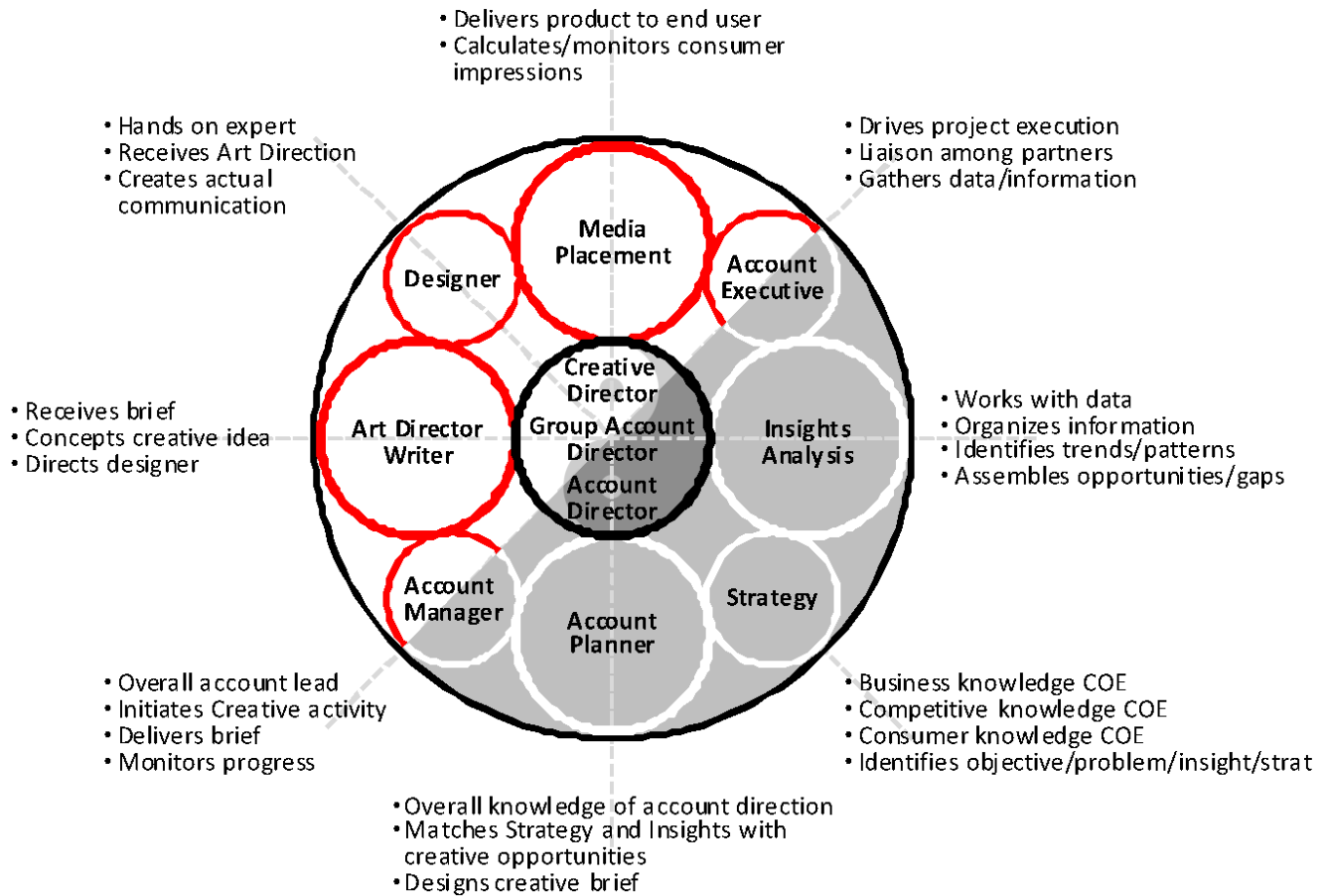


Figure 5.2i – Treece’s Granular View



Source: Dale Treece

As a final element in this theme of drilling through and into deeper levels of the structure, Treece offers a diagram of his own organization. This would be an elaboration of the creative agency segment in the Fire sphere#4 in Figure 5.2g. This

exploded view has been exceptionally well documented and is considered self-explanatory in Figure 5.2i.

Although the preceding case analysis focused on the marketing-related organizations of Wal-Mart, neither participant was actually employed by the company *per se*. Baker represented a vendor working almost like an internal consultant, and Treece working as a consultant in a retained agency. Some eight months after the completion of the initial phase of the study, an analysis was conducted by a Senior Creative Director within Wal-Mart itself (who prefers to remain anonymous), thus providing the third leg in the Wal-Mart marketing and merchandizing bundle. This final integrating perspective affords a cross-referencing restatement of the chief components from the previous diagrams. It shows how they fit together, and how each function regards the others.

Wal-Mart is the world's retail giant and as such, its day-to-day business revolves around merchandizing. This is why in the hypothetical retail layout in Figure 5.2b, the primary Heaven role was occupied by Merchandizing in Sphere #2 at the top. This forms the principal sales interface with the customers. Therefore, the merchandizing business point of view has always dominated. This has often led to a lack of unity or consistency in media messages between the various channels used by the merchandizing folks independently of those utilized by the marketing groups, with merchandizing sometimes reluctant to follow any specific marketing-led strategy.

senior management. The resultant organization puts forth an integrated media strategy under the marketing umbrella where all media channels reflect a common message. The new approach is diagrammed in Figure 5.2j and illustrates how the promotional strategy now goes “from couch to shelf,” as the respondent puts it. Wal-Mart refers to the new unifying marketing methodology as “Omnichannel Customer Experience Through Integrated Communication.”

In the marketing director’s ROD analysis in Figure 5.2j, one can see his special attention to the couplets (purple-delimited quadrants), each of which he identifies as being under the purview of a particular senior vice president (SVP). The CMO makes final operational decisions, but those decisions are informed by the central inner sphere where the SVPs act as a core motivating and coordinating network framework.

Referring to the operational re-engineering, he notes that the effect of the reorganization was to effectively cycle all the spheres 90° counter-clockwise. In other words, in the merchandizing-centric arrangement before the change, he would have located Marketing Strategy in the Fire position in Sphere #4. This update reflects a quantum shift in cultural perceptions of values and contributions of the various ROD elements. Tying back to the previous iterations, one finds Baker’s overall management focus in Figure 5.2h as the infrastructural basis in the Creative version in Figure 5.2j. She represents an external (vendor) equivalent of a Category Manager and her business disposition forms the substrate for the creative marketing cycle beginning with the

“Creative Brief,” the spur to action in the Thunder sphere. On the other hand, the role of research and customer insights acquisition in the creative process has not changed from Treece’s initial analysis in Figure 5.2g.

5.3 Spiral Dynamics Revisited

In returning to the organizational approach of Spiral Dynamics (SD) in the light of Recursive Organizational Dynamics (ROD), let’s first tabulate and contrast some of the main features of both systems.

Table 5.3a – ROD vs Spiral Dynamics

<u>Recursive Organizational Dynamics</u>	<u>Spiral Dynamics</u>
Recursive, self-similar at every level of application, quantum level to galactic. Process is reiterative within an application.	Spiraling, postulated tier system where related levels are self-similar. Could be reiterative and non-tiered.
Eight spheres of influence, spiraling through cycles of evolution. Eight spheres only are determined by mechanics of manifestation.	Eight levels of psychological existence identified, additional postulated but not yet found.
Four self-expressed nodes, and four supportive or subjective nodes.	Four self-directed outwardly actualizing levels, and four group-oriented modes.

Four couplets of polar 'supersymmetric' complementary spheres - one emerging, one submerging.	Double-helix of four couplets of diametrically opposed modes of functioning.
Expression of complete cycle is time variant depending upon level of observation.	Expression of complete cycle is time variant depending upon subject.
Staff according to innate values framework and relationship propensity.	Staff according to innate values framework and relationship propensity.
Different folks with same job description slotted in different spheres.	Different folks with same job description slotted in different levels.
<i>Source: Author</i>	

It can be seen that structurally, the two systems are very similar. Although the diagrams used to depict SD and ROD are very different, it is asserted that the difference is principally a result of wanting to present a particular perspective. In SD, the idea is to show how the brain or social construct morphs and rearranges at a higher level in response to complexity and environmental stimulus; whereas in ROD, the diagram is designed to emphasize the relationship between *yin* and *yang* complementary spheres and their relationship to wholeness, and the cyclic nature of the process.

Just for simplicity's sake the warm self-directed and warm-colored ^vMEMEs will be termed *yang*, and the group-directed and cool-colored ^vMEMEs will be termed *yin* (see Figure 4.3a). It is significant that Beck and Cowan chose those two color palettes

because they are the natural assignments for the qualities of the levels within the ROD framework. Ken Wilber, after his association with Don Beck, chose to change the color scheme of his Spiral Dynamics integral (SDi) to a rainbow sequence in his Integral Altitude model that does not seem to make any valuable contribution (PiaLOGUE).

The biggest point of departure appears to be that SD views the progression of evolution to be step-wise, *yang* Beige, followed by *yin* complement Purple, followed by *yang* Red, and then *yin* Blue, etc. In contrast, the current understanding of ROD is that the evolutionary cycle progresses through all the *yang* elements in sequence, and then through the *yin* phase. Because of the line-change calculus, it seems unlikely that a *yang* item would morph into its *yin* complement and vice versa. However, since each participant in a system (individual, company, civilization, star system) is in a different stage in the cycle, and the cycles themselves are time-dilated depending upon their level of complexity, we would expect that all spheres of influence be in play in any system at any point in time, although one would be statistically more prominent. Since a *yang* item and its *yin* supersymmetric counterpart stand in the starkest contrast to one another, it is natural to see them pitted against each other. Therefore, Blue is the natural antagonist of Red, Orange finds itself pitted against Green, and so on.

In practice, this difference in process does not make the two systems incompatible. By definition, SD is diagnostic. An environment is analyzed and the model explains what happened and how it can be fixed or remediated. This isn't the purpose of ROD, which

is architectural in nature. ROD is used to design and build a structure that conforms to the natural cycle of evolution and proactively staff according to what values profile suits the corporate culture for the time being.

Cowan and Beck offer something they call the “plumb-line process” for staffing an organizational department. The approach is completely consistent with a ROD analysis and contains the following steps:

- Job Requirements (the work to be done)
- People Profiles (those people who perform that work naturally)
- Recruitment and Selection (identifying those same people)
- Placement (placing congruent people into job functions)
- Training & Development (enhancing competencies and capacities)
- Management (managing people in ways that fit them and the work)
- Form (designing the organizational structure to fit people)
(Beck & Cowan, 1996, p.147).

We could categorize the ROD method process as follows:

- Process analysis leading to job requirements (the work to be done)
- Allocate processes to ROD spheres of influence (ensuring selection of those people who perform that work naturally)
- Recruitment and Selection (identifying those same people)
- Placement (placing congruent people into job functions)
- Training & Development (enhancing competencies and capacities with a understanding of intrinsic communication pathways)
- Management (managing people in ways that optimize the intrinsic relational propensities)
- Form (designing the organizational structure to fit the ROD categorized process in accord with corporate values and culture)

As was seen from the previous sales organization case study, the most important senior management task in a ROD analysis is thinking through how the various processes that make up the business fit into the corporate values system. The way that the material world fractally unfolds is always self-similar. Therefore, each sphere of influence has the same background tendency whether or not we take heed of it. What is unique to the organization is the value it attaches to a particular process, relationship or style of functioning. By providing a model template, those background processes of nature are deliberately taken into account rather than making staffing decisions in a vacuum. This introspection is not trivial and any tool that could assist in making the core process assignments would be invaluable. The decades of in-the-field experience amassed by the SD folks could greatly enhance the initial high-level review of an organization. For example, Cowan and Beck provide these guidelines for characterizing the 'MEME assemblage:

PURPLE...as a magic circle that makes all inside feel safe.

RED...as a self-centered empire where one feels powerful and in control (or weak and submissive).

BLUE...as a fixed pyramid that gives stability, permanence, and assigns one's place.

ORANGE...as a game-board matrix that promotes opportunity and rewards skill.

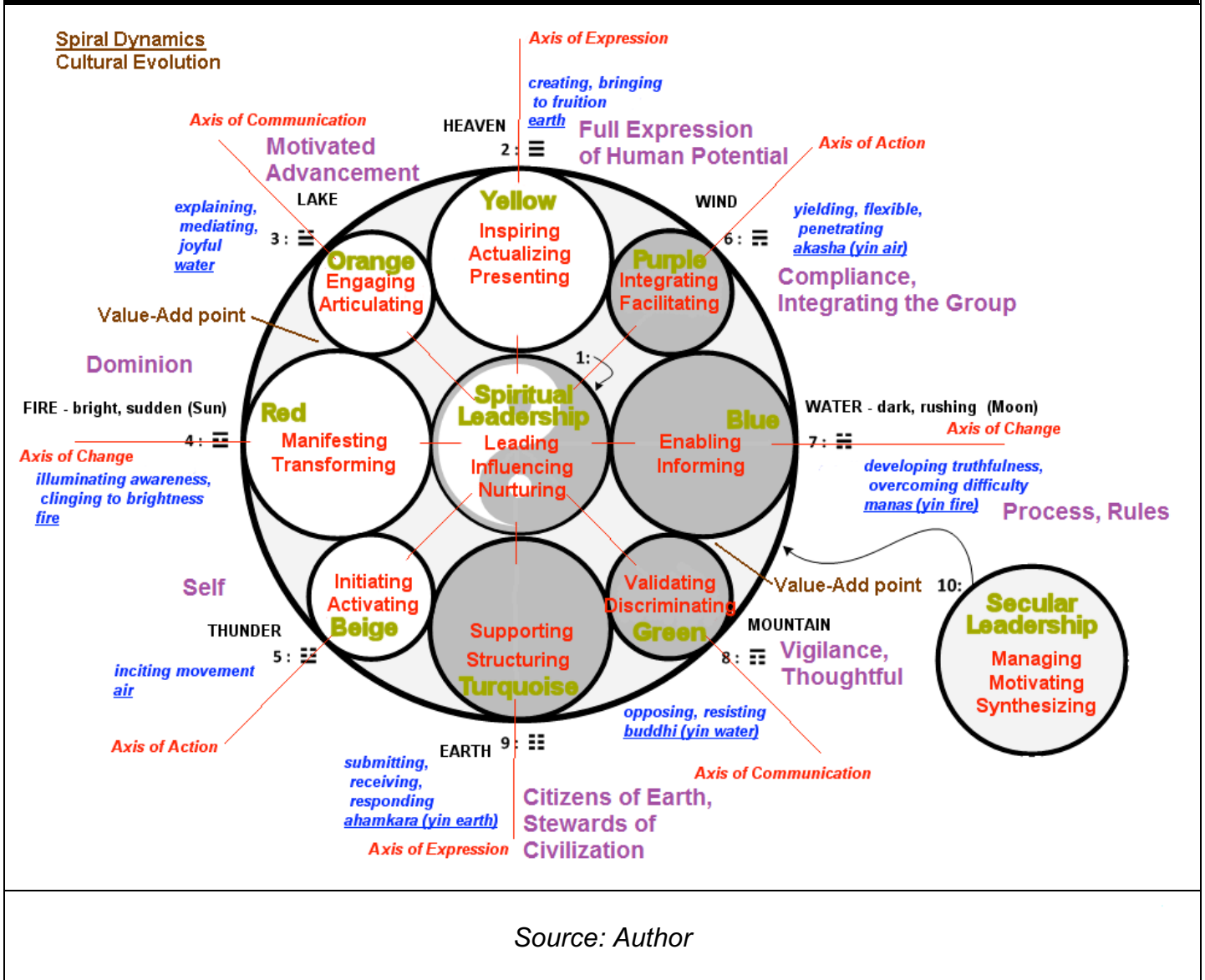
GREEN...as a warm, supportive community of equals that cares for its own.

YELLOW...as flowing networks that shift functions up, down and across natural layers

TURQUOISE...as a living organism that brings order from within chaos (Beck & Cowan, 1996, p.173).

At this stage it will be useful to compare a ROD diagram that incorporates the SD MEMEs as shown in Figure 5.3b. The two systems weren't designed to dovetail but it is easy to see the correlations. Having allocated roles within the ROD context, it becomes possible to proactively mitigate relationship areas that are inherently difficult.

Figure 5.3b – ROD Analysis of Spiral Dynamics



Previously, some ways were suggested for “engineering” the outcomes of communication transactions by intentional focus on specific line components that had to transmute into their *yin/yang* digital logical complements in order to facilitate an effective configuration.

Although no specific manipulation techniques are offered, once again, the SD prescription is remarkably similar:

Assign people whose ^YMEME profiles are complementary to each entity but who also recognize the common [self-sustaining principles, norms, assumptions, and beliefs that most people in the entity would consider *self-evident’] to complete the link. To close the deal you must identify what each potentially needs from you to connect psychologically, as well as economically. Some strategic partners need to sense RED power before they can link comfortably; others are more drawn by an ORANGE high-tech, high-potential display; yet others would like to feel an expression of sensitive and socially-conscious GREEN. Think of the initial connections as a FAX-like handshake between ^YMEMEs. The secret is to think like networking software to hook up diverse individual profiles, organization flywheels, and cultural ^YMEMEs because these are the real bonds that ultimately make or break the arrangement. (Beck, 1996, p.181).

As an indication of concordance, here follows a superficial comparison between ROD spheres of influence, the component composition of the associated trigrams, and the SD ^YMEME basic characteristics. Looking at the diagram starting in the bottom left at the start of the *yang* phase and working around clockwise, it is clear that all the *yang* spheres are characterized by an expressed subject or self line. This corresponds to the

outward, self-oriented character of the warm-colored ^vMEMEs. The Thunder position shows only an activated subject line. In an SD context, one could read that as a purely self-orientation corresponding to the Beige independent hunter-gatherer clan consciousness, not seen much in Western society today outside of homeless folks. At the cardinal Fire point, there is an expressed object line also – giving the idea of dominion and object orientation, which corresponds well to the Red framework. Moving into Orange at the Lake position, there are expressed self and dynamism lines. Chris Cowan describes Orange as, “first and foremost, multiplistic and comparative; central is a feeling that the individual is both empowered and capable of changing self and others; the ability to calculate probabilities and manage risks is another.” This completely aligns with the ROD qualities associated with the Lake sphere. Yellow finds itself located in the most *yang* Heaven position, the completion of the *yang* phase, and the most mature, outwardly expressed and developed of the *yang gua*. In this sense, it is the fulfillment of the expressive process. Apart from the fact that there are no more *yang* locations, there seems to be no real need to postulate additional states above the Yellow zone. It should be remembered that the ROD evolutionary cycle is reiterative and returns to the *yang* phase at a higher level of organization.

Moving on to the *yin* phase, starting at the Wind location is found a withdrawn self line. All the *yin*-side items are categorized by a defocused self line, indicating a group orientation. In Wind, the classics see flexibility, compliance and integrating qualities. This would correlate with the more tribal group consciousness of Purple. The cardinal

point of Water is next, and is characterized by only the dynamism line being expressed. This gives the idea of process and the establishment of rules to support the group. For example, in the Business Intelligence reporting group example, this Blue position was occupied by the Data Architect (data modeler, data governance, etc.). Going on to the Mountain point, the object line only in play, giving the idea of vigilance, or checking the validity of the process. In terms of the Vedic *prakriti*, one finds here the quality of intellect. It is not difficult to find alignment here with the Green ^YMEME and its focus on truth and understanding. Finally, at the Earth location is the totally *yin* Earth environment, the unmanifest supporting backbone for the entire cycle. Here, mother is at home. Signifying the ultimate supporting structure in consciousness, there is no need for further refinement. The Turquoise ^YMEME assigned to this location is characterized by holistic thinking, a blending and harmonizing collective consciousness. Beck and Cowan state that this sector is associated with a “focus on the good of all living entities as integrated systems, part of larger, conscious, spiritual whole”, (Beck, 1996, p.287).

In a relative universe there are no self-standing absolutes. White has no meaning without black, bright without dark, etc. Therefore one should not expect to come across any sphere, and by extension ^YMEME, in isolation. It takes all eight to make up a continuously cycling wholeness. In a world of relative duality, one certainly can't find a *yang* item without its *yin* complement.

In summary, there are some disagreements between Spiral Dynamics and Recursive Organizational Dynamics, but these are perhaps more a matter of language than any fundamental divergence in principle. It is hoped that further research can shed light on deeper commonalities and tools that could be shared between the systems to make each richer.

**CHAPTER SIX -
FUTURE RESEARCH,
SUMMARY AND
CONCLUSION**

FUTURE RESEARCH, SUMMARY AND CONCLUSION

6.1 Future Research

At various points in the text there were passing suggestions for future research. These will be summarized here plus a few additional ideas will be presented.

Firstly, there needs to be a broad-spectrum qualitative analysis and more thorough examination of ROD in the light of additional industries and organizations to see if the model continues to prove useful.

Next, the suggested mechanism in the text for proactively affecting line changes in the subject trigram (i.e. modeling a new trigram) was the application of focused intention. The purpose was to facilitate communication pathways, or to promote a more effective interaction within an existing relationship. A protocol and quantitative analysis is required for controlled field trials using attention techniques for proactively affecting line changes.

A major hope for the ROD model is that it could adopt and include other proven modalities such as Spiral Dynamics' method of analyzing relationships between spheres of influence, or ^VMEMEs in SD parlance, and the wisdom traditions that have been used in the East for millennia, such as the venerable Yijing. As previously stated, it makes no difference whether or not the rationale for reading trigrams according to subject-process-object is accepted over the traditional earth-man-heaven approach. The logic

presented in this research does appear to bring new clarity to the symbolism within the Yijing. However, if the new approach is rejected in relation to traditional Taoist interpretation, it still stands as a self-contained model. And in that case, one could say that the Taoist vehicle was appropriated and a Vedic engine installed instead. Nonetheless, the hexagram symbolism and line-change aphorisms which are the essential content of the Yijing can still be used as a time-tested reservoir of information in a descriptive, rather than predictive, fashion. Should the quantitative line-change results analysis just recommended prove positive, then it would be very worthwhile to produce a new business-oriented translation of the Yijing text which could be codified into a computerized lookup model.

It follows from this that it would be useful to test the effect of Vedic and Taoist neural and psychological training in Gap immersion techniques for improving intending ability. The section on Vedic Engineering introduced these ideas and Figure 4.2b from the Taoist Engineering section included a ROD model for both *taiji* and meditation/*samyama* practices. An interesting study would be to test whether these diagrams provided any assistance in improving the effectiveness of such meditative practices by being utilized as a training and feedback map of the internals of the techniques.

Another possibly productive avenue might be the investigation of relationship with or facilitation of other modalities using quadrants such as Meyers-Brigg or TA.

The following is a brief discussion with respect to oriental systems of medicine that might at first glance appear to be completely off topic, but is necessary in order to make an important link to ROD and modern quantum spin theory. It will serve as a powerful cross-validation and suggest yet another path of future research. Very early on the variances between the number of primordial elements as described by various cultures throughout history were discussed. The Chinese consider five (*wuxing*), and to get there from their eight *bagua* means that some *gua* get the same elements twice (viz. wood, metal and earth). This seems awkward, but the *wuxing* form the basis of traditional Chinese medicine (TCM) and the increasingly popular geomancy art of *Feng Shui*. There is a strong overlap between Chinese medicine and the Indian Vedic medicine called *Ayurveda* in the reading of the radial pulse since they both include an equivalent measure in the state of *san jiao* (triple warmer meridian, Chancellor, 1962, p.105) and *tridosha* (three humors, Dash, 1980, p.18). Both pulses speak for the general metabolic balance in the body (Zhen, 1985, p.73). *Tridosha* is a core concept in *Ayurveda*, which is becoming increasingly popular in the West as one of the most powerful systems of natural medicine available. The *doshas* are bodily humors and correspond roughly with the traditional Western/Greek terms of melancholic, a mix of sanguine/ choleric, and phlegmatic. The three *doshas* are *vata* which combines the elements of air and *akasha* (space), *pitta* which combines fire and water, and *kapha* which consists of water and earth. These all-important characteristics are used to describe the balance of health and homeostasis of any living system, and the effects of

the surroundings upon them in terms of aggravating (or vitiating) or relieving the *doshas*.

Inside the body, there are three *dosas* which govern the physico-chemical and physiological activities. These three *dosas* are *vayu* [*vata*], *pitta* and *kapha*. These *dosas* are composed of *mahabhutas* [the five *prakriti* elements not including mind, intellect and ego]. All the *dosas* have all the five *mahabhutas* in their composition. However, the *vayu dosa* is dominated by *akasha-mahabhuta* [space] and *vayu-mahabhuta* [air]. In *pitta*, *agni-mahabhuta* [fire] is predominant, and *kapha* is primarily constituted of *jala* [water] and *prthvi-mahabhutas* [earth] (Dash, 1980, p.19).

Dash states that *pitta* is mostly fire, but the common understanding is that it contains both fire and water, but not as much water as *kapha*. Thus, *vata* is reminiscent of *rishi* (subject), *pitta* of *devata* (process/dynamism), and *kapha* suggests *chhandas* (object). Although their mutual relationships are closely bound, they do not map linearly to one another. The *tridosha* are a weighted admixture of the fundamental elemental qualities.

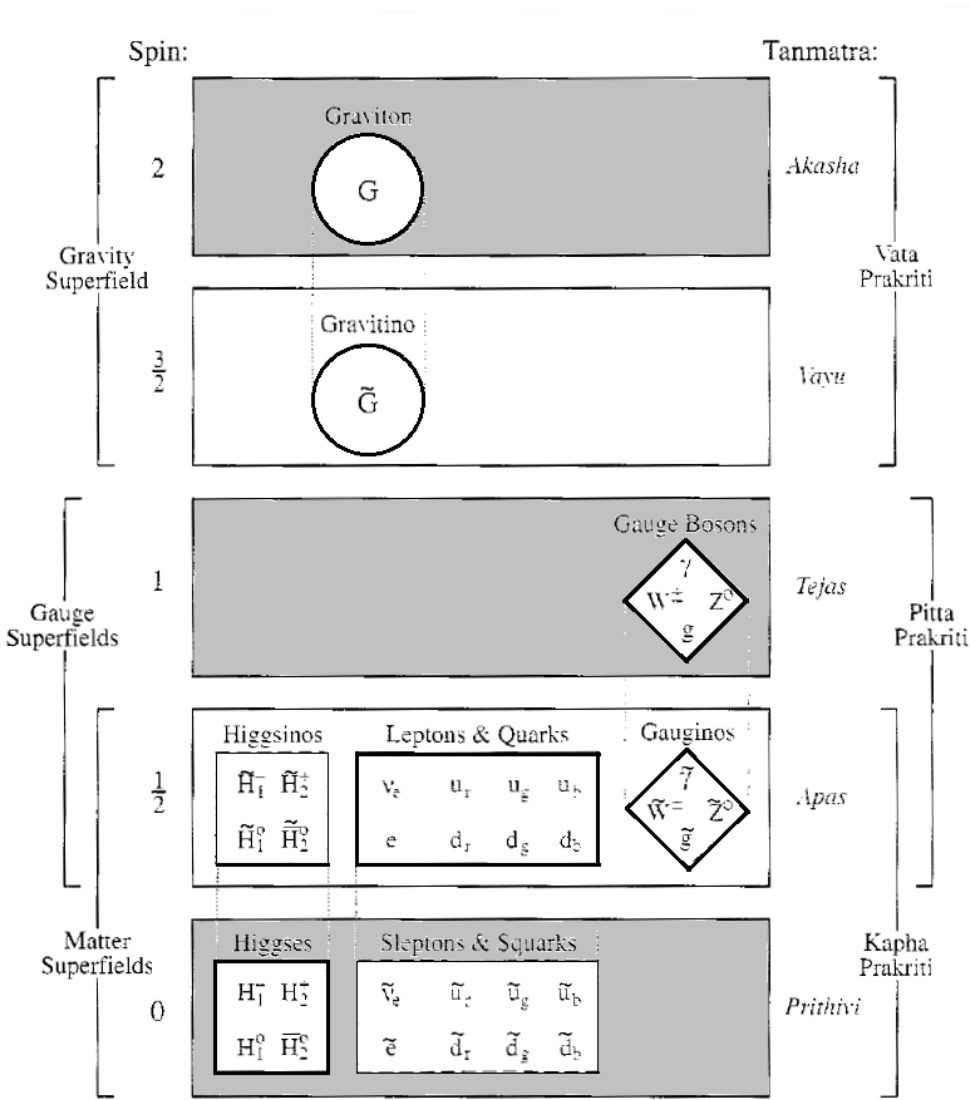
And so the stage seems to be set for a perfect storm of mis-associations, assumptions and confusion. How did the Chinese arrive at five *wuxing* from eight *bagua*? How did the Indians arrive at their five elemental (*mahabhuta*) associations for *tridosha* and why the confusion over the water component for *pitta*? And why did John Hagelin make the

seemingly astonishing assertion (cited earlier) that the *prakriti* elements of *manas* (mind), *buddhi* (intellect), and *ahamkara* (ego) “correspond to subjective realities that have little to do with physics below the Planck scale”, (Hagelin 1983, p.31)?

The elemental assignment in the ROD theoretical framework appears able to resolve all these issues and tie them firmly together. There are nonetheless a couple of anomalies remaining that future research might be able to clear up. In the traditional *xian tian bagua*, there are two watery zones: i) ROD sphere #3, which is called Lake and was assigned the water element ; and ii) ROD sphere #7 is also usually called Water in modern times, but was assigned *yin* Fire in ROD. It will be recalled that the Water location was associated with the Moon and mind, and that it signified difficulty or danger (as rushing water in a deep declivity). The original Yijing imagery was actually that of a double pit. In the Vedic literature, the “Lunar Fire” is one aspect of the three-fold *Agni* called, in the *Chhandyogya Upanishad, Dakshina*. It is the Fire of the moon or mind, and symbolizes intuitive thought (Gupta, 2012, p.20).

Hagelin finds five spin values (0, $\frac{1}{2}$, 1, $\frac{3}{2}$, and 2) and feels compelled to equate them with the five *tanmatras*. Integer spin values are associated with bosonic elements, and the half-spin values correlate with fermionic quantities. These are shown in Figure 6.1a (taken from Hagelin, 1998, p.59) where they are coupled with the five elements and their *tridosha* correlates (*tejas* is taken as a synonym for *agni*, fire, and *apas* as a synonym for *jala*, water).

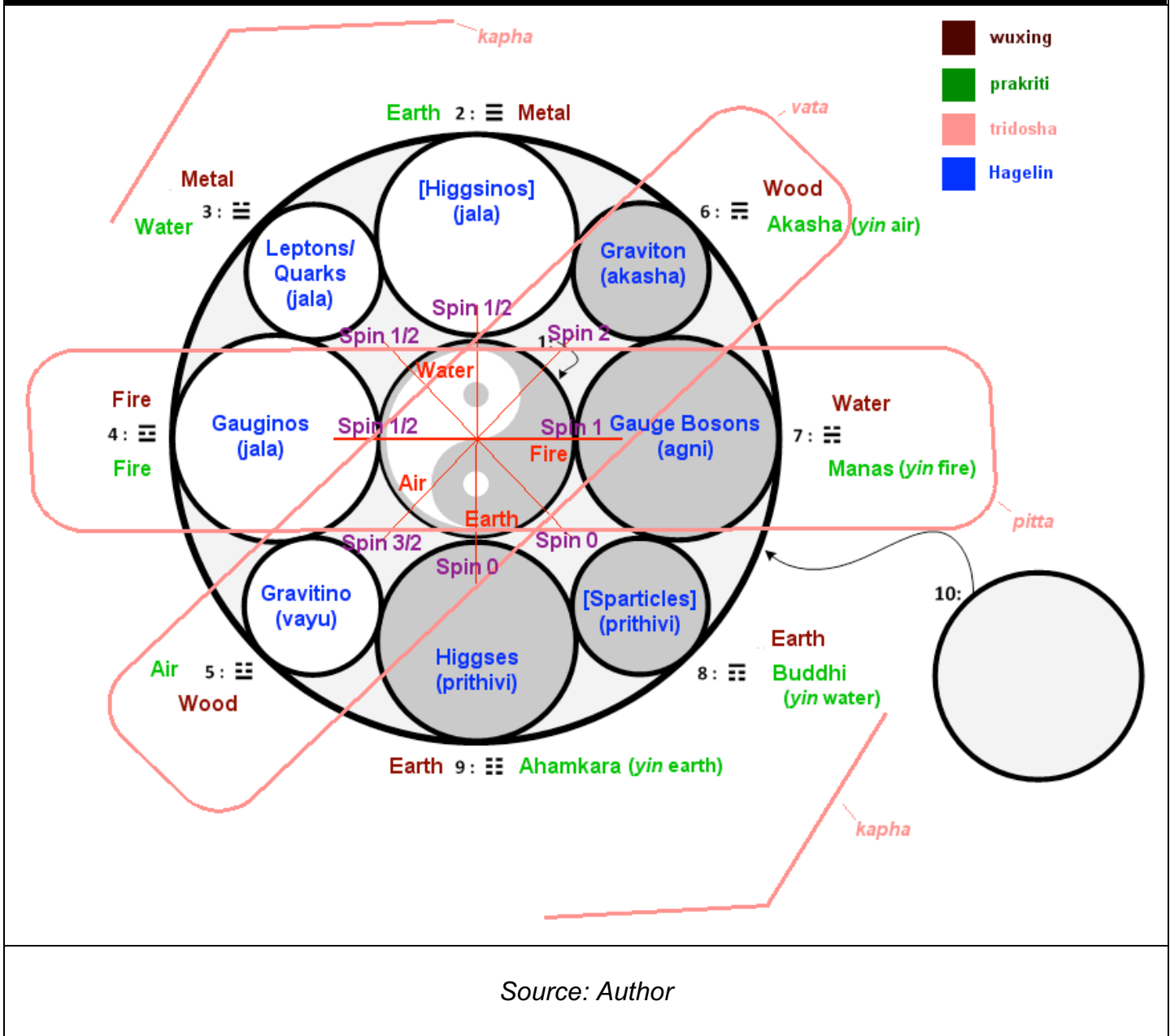
Figure 6.1a – Quantum Spin Assignments



Source: Hagelin, *Manual for a Perfect Government* (1998)

The ROD interpretation is shown next. It is highly surprising, and presumably quite fortuitous, that the darker shaded areas in Hagelin’s diagram correspond precisely with the darker *yin* elements in the equivalent ROD diagram in Figure 6.1b.

Figure 6.1b – ROD Correlation of Tridosha, Wuxing and Quantum Spin



The following are the areas of tight congruence between all four approaches as signified by the color-coding in the Figure 6b diagram key:

- i. The *vata* axis corresponds to the air (*vayu*) and space (*akasha* or *yin* air) elements, and both are 'wood' in the Chinese *wuxing* system. The remapping of Hagelin's quantum spins puts the postulated carriers of gravity with space, which is interesting in and of itself and lays the groundwork for a following suggestion for additional research.
- ii. *Kapha* is earth and water, thus occupying a wider axis than the other two *tridosha*, but nonetheless, still supersymmetrical between *yin* and *yang*, bosonic and symmetric fermionic counterparts. The recently confirmed Higgs, the *carrier* of mass finds itself, most appropriately, in the *yin* earth position. Whereas Higgsinos, which are thought to *comprise*, or at least significantly compose, the dark matter representing 85% of the physical mass of the universe, find themselves in the fully expressed *yang* earth position at the top! However, Hagelin has attributed Higgsinos to *jala* (water, although *kapha* is a combination of earth and water). Interestingly, the Chinese also associate this position with water (which they distinguish from the sphere#7 version by calling it metal). All systems are agreed on the water element in sphere#3 where Hagelin locates leptons and quarks with spin value $\frac{1}{2}$. Again Hagelin and the Chinese have allocated earth to the supersymmetric position of sphere#8. Therefore, overall the *kapha* allocations are valid, but it is

- tantalizing that both Hagelin and the Chinese appear to get earth and water interchanged at exactly the same places.
- iii. Finally there is the *pitta* axis, which is the ROD fire axis. ROD has already resolved the issue of the Chinese Water sphere#7 actually being *yin* fire, being associated with the Moon, mind and mental fire. Here Hagelin places, after the ROD realignment, the Gauge fields. *Pitta* is primarily fire, but also associated with the element of water. Perhaps the subtlety of water here (*yin* fire) explains the lack of clear agreement amongst *Ayurvedic* sources as to whether *pitta* contains water or not. Surprisingly, Hagelin's spins are also associated with fire and water except that he has them reversed once again. Thus they find themselves on the correct supersymmetric axis but with their elemental assignments reversed. However, his association of Gauge bosons with *agni* (fire) in the *yin* fire position again suggests a fascinatingly improbable case against chance and recalls the Upanishadic *Dakshina*.

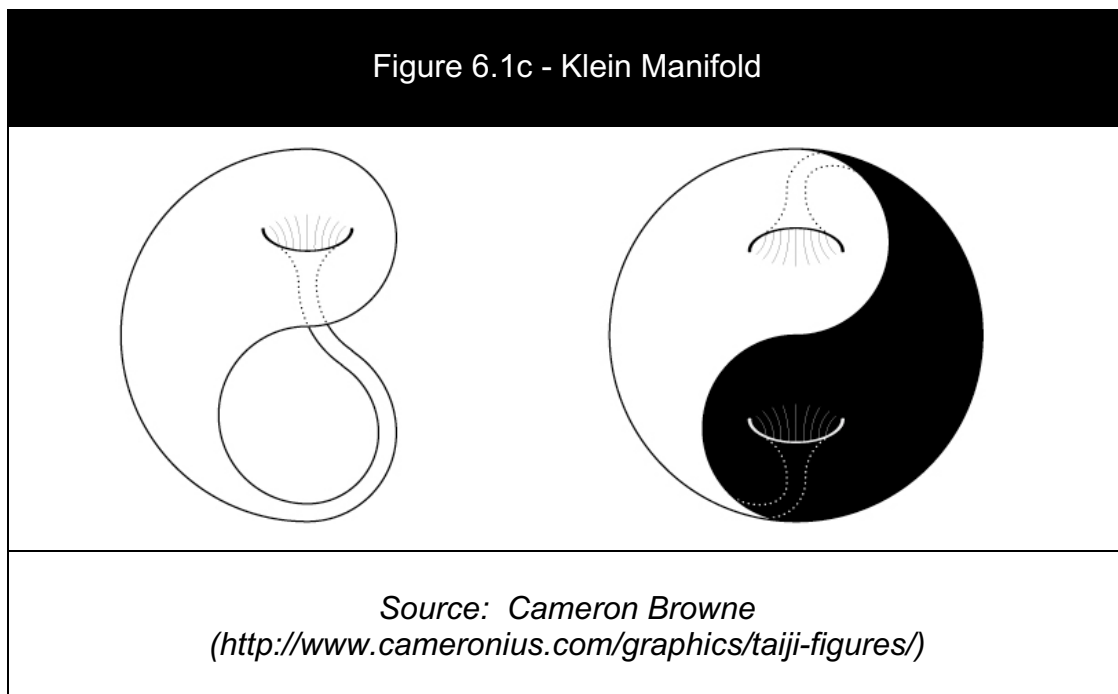
This then is the culmination of the Recursive Organizational Dynamics argued answer to the question: Are there four elements, or five? Or are there eight? In accord with the earliest philosophies, ROD states that there are just four elements, but that each has an objective aspect plus a supersymmetric subjective twin. Four *yang* versions and four polar *yin* versions. In this way, the symmetry is maintained and there are no awkward gyrations trying to correlate five elements with the eight mathematically demanded nodal spheres (or natures) from which they sprang. The conclusion of this research is that the addition of space as a fifth element and the removal of the remaining three

subjective items, mind, intellect and ego, was a mistake or at least simply a perspective that was not part of the thinking of the original framers of the philosophies and perhaps subsequently got out of control. This is especially so when we consider that the philosophical traditions that later spawned the fifth element concept are also those that espouse the material creation as being mind stuff, a figment of divine imagination. Also, it was shown earlier how difficulties arose when one of those elements, space or *akasha*, was not only promoted from the *yin* phase to the *yang* side of the equation, but that it was promoted to chief position as the root basis of the other four (earth, water, fire and air). Worse still, taking his cue from Vedanta, the great 19th century teacher Vivekananda, and by extension Ervin Laszlo, presented the underlying duality as *prana* (energy) and *akasha* (primal matter). This is a valid perspective. But this is *akasha* in terms of something akin to the quantum foam itself, and not simply a quality of space as the non-manifest container of dimensionality. This conflation by more recent commentators added to the confusion even more. It was noted that using terms like matter/energy or *prana/akasha* as the primal duality also begs the question of where they too came from.

Instead, by adopting Maharishi's profound epistemology of the self-referral dynamics of consciousness itself, by going back to the ultimate subjective abstraction of pure existence and intelligence, these problems of nomenclature simply fall away within the ROD framework. Then using the relationship-based self-referral dimensions of subject, process and object (knower, process of knowing, and known), in conjunction with that abstract duality as primal strange attractors, the mathematical bifurcation into eight

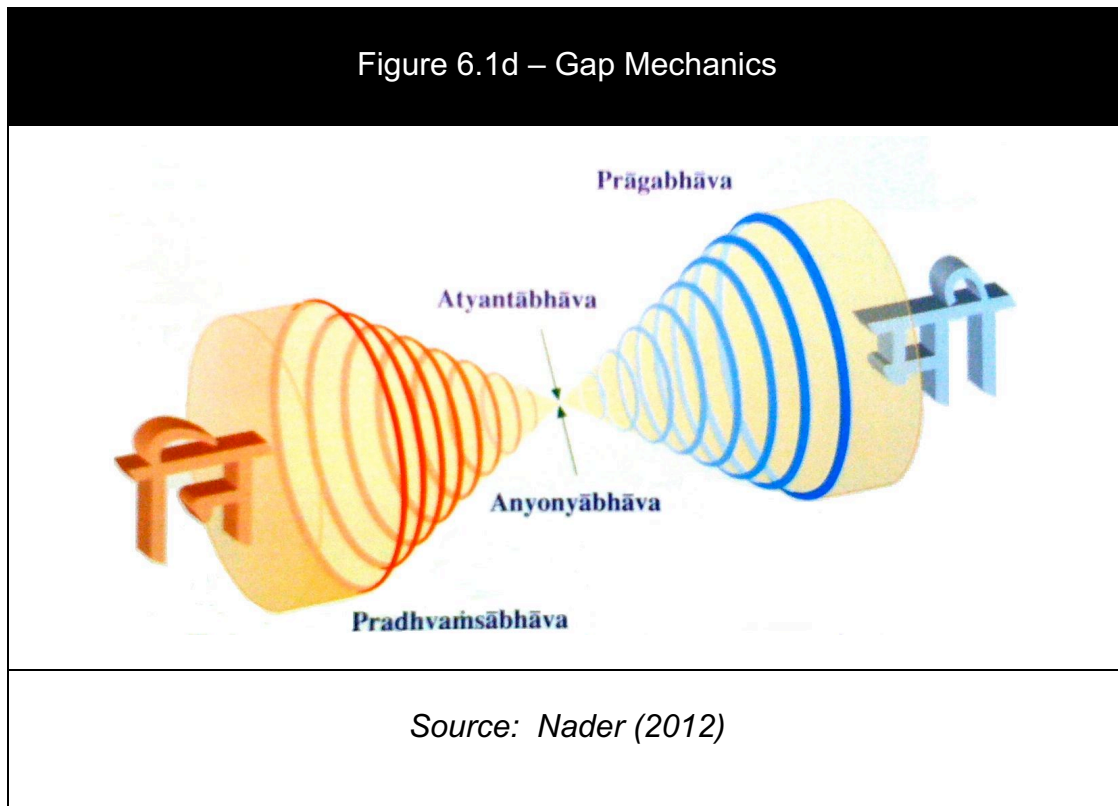
causative nodal qualities, the *prakriti* of Veda and *bagua* of Taoism, and by extension, spheres of influence in ROD, emerge without any difficulty while preserving the unchanging dignity of the underlying basis in pure consciousness.

For the present research, an emphasis was laid on the “value-add” transitions between the Fire and Lake points, and conversely between the Water and Mountain locations. This seemed most relevant in a business or organizational context. However these are not the most mysterious points in the evolutionary cycle. The famous *yin-yang* fishes symbol (☯) contains “eyes” that present as passageways from the *yang* side to the *yin* side. How that mechanism of transition happens is the subject of some debate. Some view the process as a simple Klein manifold (or Klein Bottle).



Based upon all the arguments set forth in the research, this seems unlikely. The theory has been discussing the ontological basis of Recursive Organizational Dynamics as the self-referral collapse of infinity onto its point value (MVU, 1986, p.497).

There is additionally the notion of time that was introduced within the case studies as a purely subjective and variable dilation of the cyclic process described by the ROD diagram and model. This engendered the idea of the process spiraling into the Gap and then emerging forth in a sequential cycle of expression and evolution. Nader describes four stages in the collapse of infinity onto its point values within the Gap, and offers the following example of that process between the syllables 'ni' and 'mi' in "Agnimile," the first expression of Rig Veda (Nader, 2012, p.15).



The whole thing is about the Self – which is why the subject line is primary in place and consideration. It doesn't make any logical sense to have a system based upon process or object. Therefore, the *yang* side is characterized by an emphasized subject line (the Self as Presence), and the *yin* side has subject withdrawn (the Self as Witness). This is a powerful way to look at the duality aspect of existence/*yang* and intelligence/*yin*, viz. the eyes of intention winking on and off. According to the ROD line change calculus, it's not natural for *bagua* to go through the center, so one doesn't expect to see Thunder turn to Wind, or Mountain into Lake, for example. It is at the locations where the Heaven sphere transmutes into Wind, and conversely, where the Earth sphere resolves into Thunder, that the Gap-transition mechanics occur, where the *yang* folds into the *yin* and *yin* gives birth to *yang*. It has been explained how the four *yang* values submerge into the Gap and the four *yin* values emerge, and vice versa. Maharishi said that the quality coming out of the Gap is dependent on the values collapsing into it. In other words, although the basic *bagua* sequence is the same, every cycle and situation is different. Like a Lorenzian bifurcation, the process is deterministic and is yet totally sensitive and bound to initial conditions (Clark, 2009). It is a very complex cascade of sequential symmetry breaking to arrive at any specific condensation of reality. Arising from this comes the suggestion for investigating the mechanism of memory that allows for the spiraling evolution through the ROD cycle. The future research topic in this instance involves elucidating the preservation of data across the Gap. This is what systems theorist, Ervin Laszlo and others have referred to as programming the "holoverse" or the writing and reading the "*akashic* record." One could imagine the Gap

like a radio receiver that simply strips the acquired modulation off the carrier (the fundamental *bagua* wave) and then imprints it upon the nascent emerging phase. In the process it creates the *akashic* record and is used to modulate the new cycle. Laszlo sees it as the universal mechanism for the preservation of information (Laszlo, 2007, p.13), and serves a purpose parallel to Sheldrake's morphogenetic field and Bohm's implicate order.

Based on *taiji* practice, it appears to be energetic momentum that carries the process across the Gap. It is a kind of springy recoil back into itself, a folding in the *taiji* form that could be likened to the enfoldment at the end of travel of a yo-yo or the slinky toy invented by Richard and Betty James in 1945. The subjective experience is that the *yang* transition at Heaven is a true energetic collapse, sometimes also experienced as a congealing or resolution. It is like a heavy stone dropping resounding into a pond or vessel. Out of the resulting ripples emerges the next cycle. On the other hand, at the *yin* Earth point, the transition to Thunder and the impulse of intention that initiates a new phase is like a turning of the tide, an upwelling in consciousness, or an overwhelming urge to expression.

Michael Talbot sees a commonality between the views of the late theoretical physicist, David Bohm and PEAR founders Robert Jahn and Brenda Dunne. He writes that “the concepts we use to describe reality—electron, wavelength, consciousness, time, frequency—are useful only as “information-organizing categories” and possess no

independent status (Talbot, 2011, p.125). Some exciting correlations jump out when one combines the Gap-collapse information with the ROD notion of time, and the ROD rearrangement of Hagelin's quantum spins mentioned earlier in this chapter. At the all-important end of the *yang* phase, where Heaven collapses through the Gap into the start of the *yin* phase at Wind, we find the energy that drives evolution forward, and discover the following concurrent components:

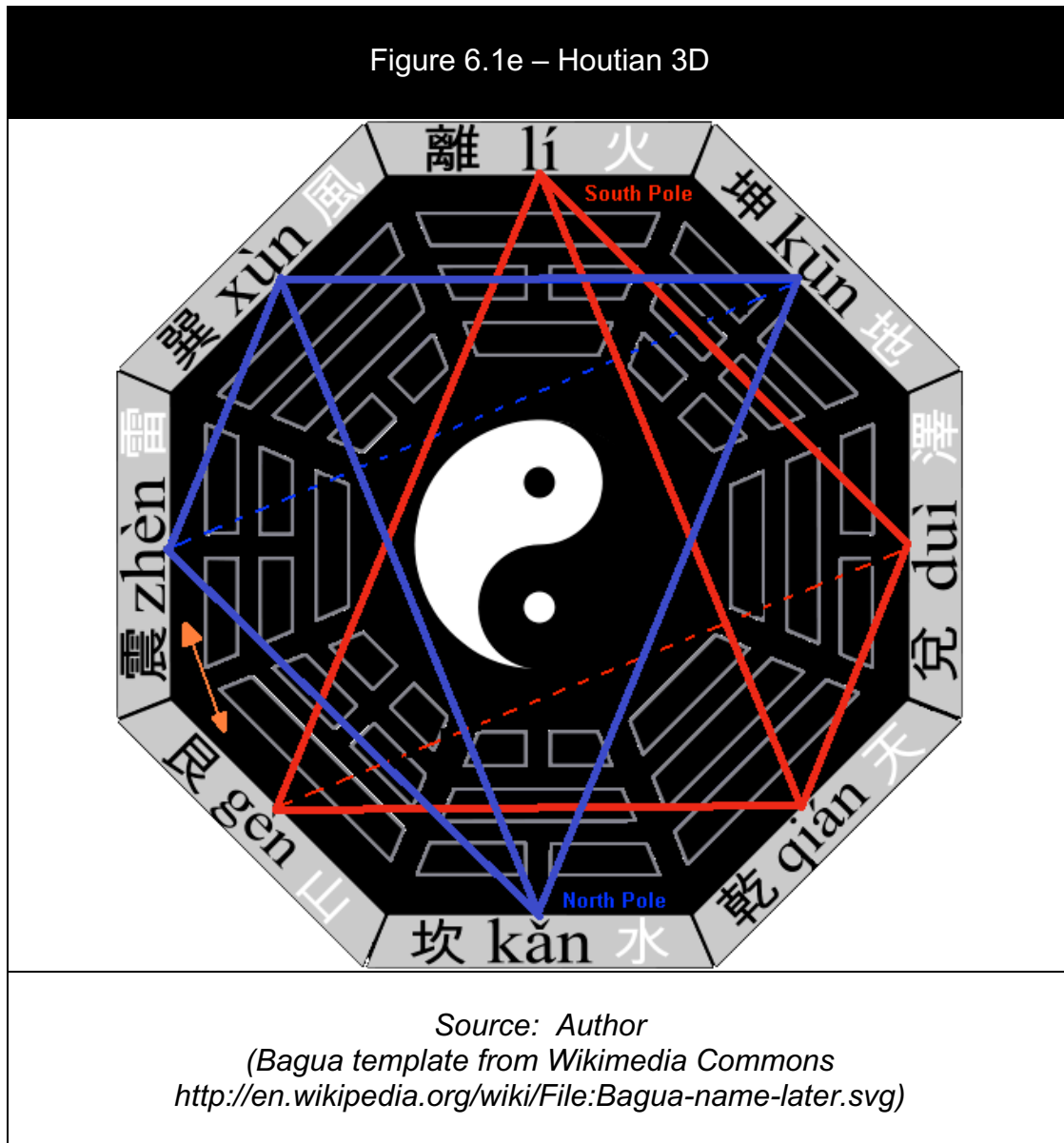
- i. When observed, the sequential collapse around the *bagua* happens in time.
- ii. The collapsing entity, Heaven, which is the most expressed *yang* element, corresponds to the Higgsino particle, which is a strong candidate for dark matter making up about 85% of the mass of the universe (see Blum et al, 2012 and Hall & Nomura, 2011). Higgsinos are the predicted supersymmetric partners of the Higgs boson, which was very recently confirmed by the LHC in Switzerland.
- iii. The other cohort in the Gap-level dance in the realm of the quantum foam is the Wind sphere which is the proposed home to the graviton. "The graviton is a hypothetical elementary particle that mediates the force of gravitation in the framework of quantum field theory", (Princeton, 2013). It will be recalled that the ROD elemental assignment for Wind is space (*akasha*).

Mass is considered to be the source of gravity. According to Frederic Brunner, "the Higgs particle plays a role in creating this source, while the graviton plays a role in explaining the mechanism of gravity", (Brunner, 2013). Whatever the mechanism turns out to be should the graviton be confirmed, the ROD model hints at a strong relationship

between the graviton and the Higgs' particle counterpart, the Higgsino. The reason for mentioning these interactions in the context of future research is that at the most energetic part of the ROD framework, where the relative manifestations at the level of the *bagua* are directly and forcefully connected to their common Planck-scale source, we find the coexistent entities of space, time, mass and gravity. This in turn loudly suggests a possible connection to relativity theories.

The projection of the ROD diagram as a 3-D process was introduced in the theoretical framework chapter (Figure 3.1e). In addition to the 8 nodes obvious in the ROD diagram, a 3-D surface introduces 12 connecting sides which might be a launching point for tying physical processes into other esoteric traditions. Thus it might be useful to build out the 3D model and investigate any implications for other physical disciplines. Using the 3-D model as a reference, it is possible to posit a novel derivation for King Wen's *houtian bagua* layout used in such common practices as *Feng Shui*, and thus solve an age-old dilemma concerning the rationale for its development. An understanding of the dynamics of the *bagua* cycle in action is required, and the *houtian* layout purports to provide this. Most interestingly, if the 3D *xiantian* representation in Figure 3.1e is flattened, as though one was looking at it from the side with *Kan* (Water) as the top pole, the trigrams are laid out almost identically to the *houtian bagua*. The only difference is that *Zhen* (Thunder) and *Gen* (Mountain) are interchanged. Mesker even observes that the only inexplicable fault in the symmetry of the *houtian* format is that *Zhen/Gen* reversal (Mesker, 2005). The traditional term for trigrams that are the vertical

mirror image of one another is *fangua* (Marshall). *Zhen* 震 [zhen4] and *Gen* 艮 [gen4] are quite similar sounding, they are *fangua*, and they are next to each other in the layout. And they are the only adjacent *fangua* in the layout. It would be so easy to transpose them, especially when using a radial layout. All it would take is for a scribe to look from a different angle when copying a document. Could this be what happened?



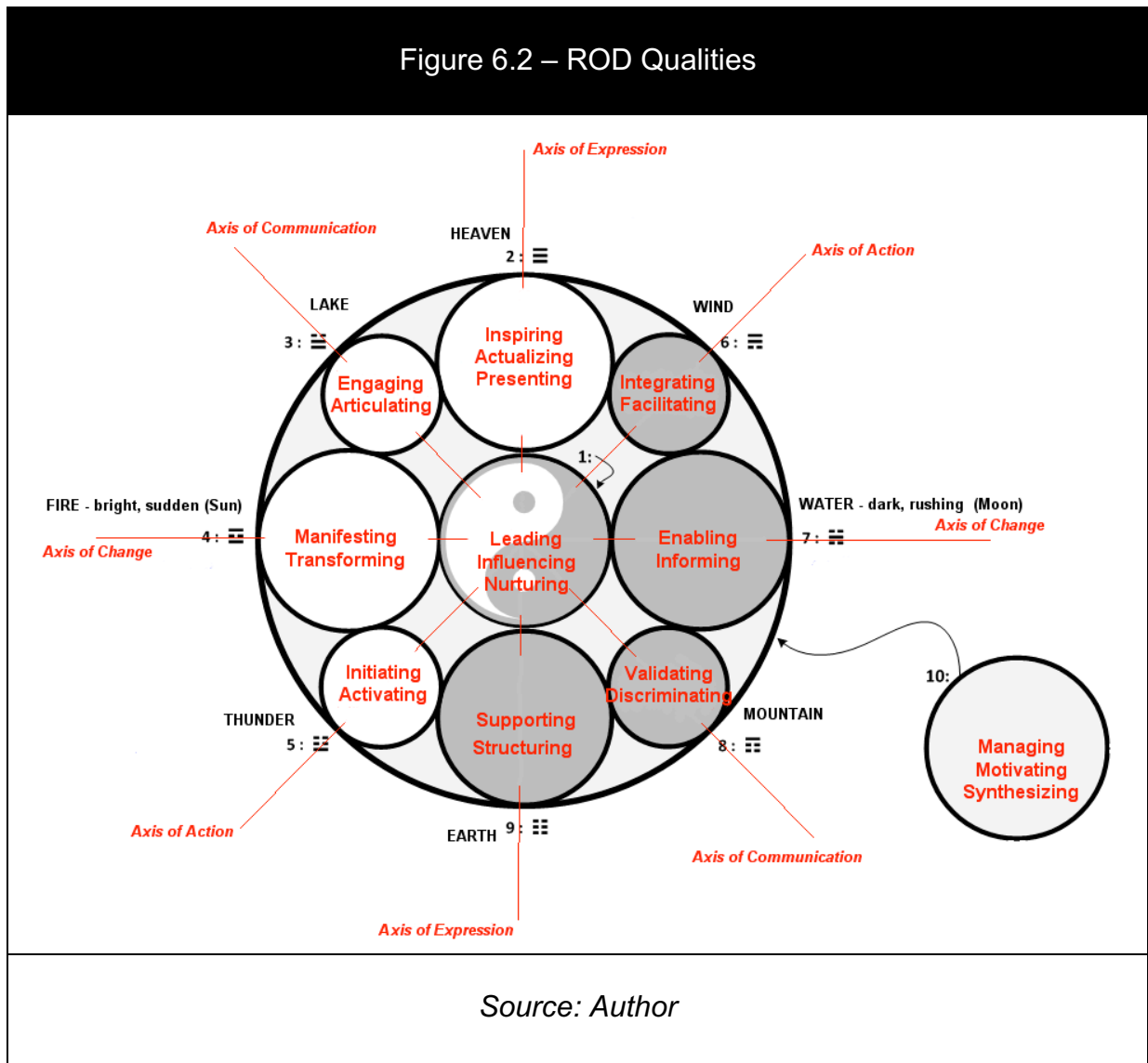
Finally, when taken from all the foregoing vantage points, can Recursive Organizational Dynamics be considered a novel framework for a valid integral Theory of Everything? Should it be deemed to meet those iTOE criteria, it could be applied to research in any discipline or as a discipline in its own right. Ervin Laszlo describes such a theory thusly:

A genuine TOE can be *created*. Although it is beyond the string and superstring theories in the framework of which physicists attempt to formulate their own super-theory, it is well within the scope of science itself. Indeed, the enterprise of creating a genuine TOE—an I-TOE is simpler than the attempt to create a physical TOE... Physical TOEs endeavor to relate together all the laws of physics in a single formula—laws that govern interactions among particles and atoms, stars and galaxies: many already complex entities with complex interrelations. It is simpler, and more sensible, to look for the basic laws and processes that give rise to these entities, and to their interrelations (Laszlo, 2007, p.11).

6.2 Summary and Conclusion

The Recursive Organizational Dynamics model delineates ten nodes or configurations of relationship that describe all matter and energy organization, and at all levels of complexity, throughout the universe. Eight of those configurations describe the fundamental qualities of the manifest aspects of reality, while the other two describe the system in terms of wholeness. In a human organizational context, such as a business, institution, military unit, or association, the eight relative spheres refer to conceptual divisions of process and the two inner and outer spheres are supervisory levels.

Each sphere has been assigned, based on the underlying ontological principles, certain overarching characteristics that aid the user in correlating each sphere with a corresponding process (or set of processes) within the organizational group being considered. The addition of axis lines linking each sphere to its polar complement describes the primary focus of the position in relation to the whole, and has an additional benefit in underscoring the fourfold supersymmetry expressed in the diagram.



It is intended that the ROD model and associated staffing analysis be used either on its own or as an adjunct to any existing system of organization design. The ROD diagram seeks to map the unfoldment of order from out of the chaotic raw ingredients of the quantum foam. Those mechanics are reflected recursively at every level of subsequent manifestation. Whether or not the underlying tendencies and intrinsic energy pathways operating from below the Planck scale and up through the most complex and large scale macroscopic processes are actually taken into consideration, they nonetheless are working behind the scenes in any living or self-organizing system. Therefore, designing and staffing a structure while ignoring the innate mechanics operating under the covers could likely result in a fragmented or incomplete solution. The results could be inefficient communication channels, unnecessary interpersonal conflicts, and an awkward process implementation. Most organizations have learned to solve such problems empirically and without conscious reference. However, introducing ROD into the design mix takes all of those background evolutionary forces into consideration, by definition, and produces an organization design that co-opts the power of nature, rather than possibly working unwittingly against it. The big benefit-in-passing is that a detailed ROD analysis forces the designer, and participating senior management also, to think through the vital distinguishing corporate processes and information flows inside the organization within the same framework mandated by natural law.

Once the unique characteristics of the organization at hand have been categorized in terms of the eightfold ROD spheres of influence, management arguably has a blueprint

of all that fundamentally matters as it relates to process within the group or department being designed. All the inter- and intra-group inputs, outputs and transactions will be well understood. The relationship of each part will be understood in terms of each other part and in terms of the whole. Only after a ROD analysis has so clarified the processes and communication pathways within the candidate unit can staffing be considered. The problem of designing the “impossible job” is completely obviated. Even if a position is specifically created to accommodate a particularly gifted or experienced individual, at least any potential negative impact could be proactively mitigated. Both the skills requirements that have been sharply outlined as a result of clarifying processes and the essential personality parameters indicated by the specific sphere characteristics provide definitive job requirements detail plus job interview success criteria. The ROD model also provides a solid framework that can be applied consistently across any organizational division and coupled with any admixture of traditional design methods. Conflict problem solving could also be provided a consistent platform across the enterprise. In other words, should it be apposite for different departments to have different design protocols (in addition to ROD), or different designers, at least there would be a unified architecture for troubleshooting or gaining a global process view.

Another important point is that any specific sphere in the diagram could consist of a whole team of people. In that case, the team would be a recursively nested entity in itself that may or may not be complex enough to warrant its own analysis. Conversely a small group might require that a single individual be incumbent in several spheres. Each

of us holds all the qualities within us to some extent, but in a many-hats situation it will be vital to guard against conflicting role personality traits (Drucker's "impossible job").

A recurring theme of this work has been the supposition, supported by modern physics and recent living systems theory, that we live in a world where inter-relationship is primary and that "things" are just transitory nodes of quantum interference. If this is not the general experience, then it is a case of the popular expression of not being able to see the forest for the trees. Not only does Recursive Organizational Dynamics offer a model for designing and staffing an organization, but it also suggests ways in which a deployed design could be better managed in the field by mapping relationship dynamics and even suggesting ways to proactively engineer interpersonal transaction outcomes.

An understanding by operational managers of the ROD model as it relates to intrinsic relational tendencies might engender greater empathy and communication skills. But even at the level of the functional spheres of the folks "in the trenches," suggestions were made for engineering desired outcomes based upon applied intention. It was noted in the future research section that quantitative field trials will be required to ascertain what level of self-development training is needed to obtain consistent success with intentional manipulation of energetic pathways. It must be emphasized that ROD is not implying any sort of mind control or surreptitious manipulation of other coworkers, cynical or otherwise. The techniques discussed are purely concerned with enhancing

the subject of a relationship, i.e. **self**-alignment in facilitating smooth and effective interpersonal transactions in a business context.

The overall structure and component meanings are derived from a re-evaluation and synthesis of proto-historic Chinese and Indian cosmologies and were found to resonate well with practical experience and modern scientific constructs. All arcane language from the original texts has been laundered out, resulting in a model that is easy to understand and is culturally neutral. English versions of the original trigram (sphere) names are maintained since the author believes them to be useful mnemonics for the underlying characteristics. Using the traditional ones seemed more valuable than inventing new ones along with associated imagery. The sphere numbering is a carry-over from the Vedic heritage, being the chapter numbers of the Rig Veda that were correlated with each of the primal elemental configurations. The numbers for the eight operational spheres (2 through 9) were laid down in the traditional Taoist *bagua* order – which follows the sequential binary bifurcation of the *yin* and *yang* abstract foundation. The reason for keeping this convention is that it is as straight forward as any other and without it the theory would be divorced from its philosophical underpinning. In addition, the *yin/yang* fishes symbol heritage is maintained in the diagram in watermark form. This seems unobtrusive and yet makes very clear the important distinction between the polarities that is a core consideration in any ROD analysis. Finally, the actual trigram glyphs were preserved as the most elegant and useful depiction of the 3-in-1 nature of each sphere that the researcher has ever seen. Since they are simply graphic

depictions of a binary system cast across three dimensions, they only have cultural associations if one happens to be well-versed in the knowledge of their genesis, which in turn would only be an added advantage in understanding the model. Therefore it is felt that the model has been oriented towards a Western business application as much as possible while still keeping the philosophical basis intact.

The relevance of this research to modern Western management practice has been demonstrated throughout the manuscript. Moreover, the author believes that the foregoing summary indicates that the research questions established at the beginning of this work have been adequately discharged. To reiterate, the primary question was:

Can proto-historic Vedic and Taoist cosmologies be reconciled and productively co-opted, in conjunction with existing paradigms of western business practice, to develop an organization design model that clarifies inter- and intra-group relationships while providing a framework for proactively optimized communication?

In answering this question, it was hoped that a solid bridge would be developed between existing models of organization structure and design, and the underlying dynamics of nature passed down from time immemorial and preserved in the Eastern philosophical traditions. The litmus test for success was defined by several sub-questions that have been answered in the order they were stated, thusly:

- i. The ROD model's effectiveness and utility in managing functional and interpersonal transactions is demonstrated by its capability to faithfully map all process-related relationships both within and without the target group and in relation to its supervisory elements.
- ii. In addition, by clearly understanding the innate relational dynamics in play within a ROD-analyzed structure, it is possible to staff the group for optimal deployment of skills and talents whilst simultaneously providing a practical template for minimizing areas of potential conflict, unworkable role requirements and combinations, and job-related miscommunication.
- iii. Model diagrams and techniques were offered that were derived from ancient Eastern philosophies that can be used as field templates to faithfully map dynamical structures within the modern workplace.
- iv. The methodology provides a framework for managers to better understand communication and process dynamics – and thus could facilitate better decision making. Even on a peer-to-peer level, the ROD model offers several means, based upon modern intention experiments and ancient Gap engineering techniques, to proactively intervene in a predetermined manner in order to favorably influence the outcome of any specific transaction.

- v. As summarized above, the deployed methodology has been couched in an easy-to-use framework as devoid as possible of arcane philosophical jargon while still retaining a workable correlation with the source texts in order to foster future research and aid deeper study in the field.

Finally, as the research progressed it became apparent that the theory and model behind Recursive Organizational Dynamics had much wider applicability than purely organization design. The suggestions for future research indicate that perhaps the model is tantamount to a fresh, or at least uniquely synthesized and formulated, Integral Theory of Everything (iTOE). It is surely for this reason that it can be so easily and consistently applied to any organizational structure. It is the author's great hope that Recursive Organization Dynamics can provide real assistance in moving our present greed ridden corporate paradigm into a new echelon of effectiveness, global sustainability, and humane employee community.

APPENDIX A – Case Study Tools

The list of functional departments proffered to the retail sales chain case study participants:

- Sales & Marketing
 - i. Sales
 - ii. Marketing
 - iii. Advertising
 - iv. Merchandizing
 - v. Media
 - vi. CRM
 - vii. Call Center
 - viii. Customer Service
 - ix. Strategy
 - x. Needs Assessment
 - xi. Product Design
- IT
 - i. Information Systems
 - ii. Transactional Systems
 - iii. Business Intelligence
 - iv. Data Center
 - v. Network
 - vi. Support
 - vii. Communications
- Administration
 - i. C-level
 - ii. HR
 - iii. Legal
 - iv. Record Keeping
 - v. Contracts
 - vi. Facilities
- Infrastructure
 - i. Facilities
 - ii. Maintenance
 - iii. Fleet
- Supply Chain
 - i. Procurement

- ii. Purchasing
- iii. Inventory Management
- iv. Distribution
- v. R&D
- Finance
 - i. Management Accounting
 - ii. Accounting
 - iii. Funding
 - iv. Payable
 - v. Receivables
 - vi. Taxation
- Fulfillment
 - i. Order Processing
 - ii. Invoicing
 - iii. Shipping
 - iv. Returns

The 3rd-party marketing analysis tool used by Baker in the case study assignments:

Hierarchy of Consumer Promotion Planning

Business Objectives	Marketing Objectives	Marketing Strategies	Promotion Objectives	Promotion Strategies	Promotion Tactics	Delivery Vehicles
<ul style="list-style-type: none"> • Volume (Units/\$) • Share • Profit 	<ul style="list-style-type: none"> • Awareness • Penetration • Consumption • Brand Equity • Growth • Maintenance • Spending Maximization 	<ul style="list-style-type: none"> • Advertising • Promotion • Public Relations • Direct Marketing • Point-of-Purchase • Packaging • Personal Selling • Customer Service • Sponsorships • Licensing • Specialties 	<ul style="list-style-type: none"> • Trial • Re-Trial • Repeat Purchase • Multiple Purchase • Purchase Frequency • Trade-Up (Size) • Usage • Loyalty 	<ul style="list-style-type: none"> • Alternate Use • Continuity • Economic Incentive • Image/Equity Building • Integration • Loading • Merchandising • Partnering • Price Reduction • Value-Added Incentive 	<ul style="list-style-type: none"> • Couponing • Sampling • Sweepstakes • Games • Contests • Refunds • Rebates • Special Packs • Premiums • Recipes • Special Events <ul style="list-style-type: none"> - Tie-Ins - Sponsorships 	<ul style="list-style-type: none"> • FSI • Newspaper (ROP) • Magazine • Direct Mail • Package • Electronic (In-Store) • Internet • Event Venues • Point-of-Sale • Radio • TV • Retailer <ul style="list-style-type: none"> - Circulars (In Ads/Features) - Displays

APPENDIX B – Computer Language Analogy

There are different classifications of computer software generations. MacLennan defines the various generations in terms of sophistication of coding structures (Tuttle, 2011). However, a more useful derivation looks at increasing levels of abstraction from actual machine operations (Frederic P. Miller, 2010). In this approach, First Generation usually refers to machine language, or the numerical codes that constitute instructions applied directly to the CPU. With machine code, the programmer works in lock-step with the processing engine. By definition, there is a one-to-one correspondence between the code entered and the resultant operation on the data.

Assembly languages make up the Second Generation, use mnemonic instructions to translate machine code sequences, and therefore represent the first beginnings of structure. They are still very low-level, hardware specific and cryptic, and most of the coding effort is spent in telling the machine how to perform the various operations rather than clearly expressing the application logic of the program. Higher level languages are often compiled into assembler for faster execution. However, whether compiled or interpretive, all higher level languages are in the final essence translated into machine code in order to access the hosting hardware.

Third Generation languages, such as COBOL or BASIC, are focused around facilitating the coding of the desired output. There is still effort required in setting up internal arrays,

controlling disk operations, and formatting page layouts for printing, etc, but the process is more abstract and more emphasis is given to telling the machine what to do, rather than how to do it. It is the responsibility of the compiler or interpreter to convert the structured programming commands into machine-ready instructions.

Fourth Generation languages (or 4GLs) speed up application development even further and greatly reduce coding errors by removing all procedural elements from the programming effort. PC Magazine defines a fourth generation language in the following terms:

A non-procedural programming language that requires less coding than lower-level languages... Any language with English-like commands that does not require traditional input-process-output logic falls into this category. (The Computer Language Company, Inc, 2013)

Finally Fifth Generation and higher languages deal with artificial intelligence (AI), such as interpreting spoken or written language from the user directly and using translation and inference to turn those statements into a database query without the need for programming intervention at all.

The purpose of this brief history of the evolution of computer programming languages is to show that each new generation has moved the programmer further from the nuts-and-bolts of machine operation and closer and more in tune with the business

application. Higher-level languages tend to be machine independent. They thus allow the application programmer to focus on the unique solution-specific logic required to solve a particular business problem and then in principle be able to run the application on any hardware platform. The converse is also true in that the same machine can be used to solve myriad problems in different companies and different corporate cultures. The computer works the same way and with the identical instruction set into whatever environment it is placed. It is up to the creators of the machine-specific compilers, interpreters, and operating systems (and the manner that the hardware and software are subsequently configured in the field) as to how efficiently the application code runs. An important point is that although higher generation computer languages remove most of the mundane machine-level tasks, an understanding of, and sympathy with, the underlying computer architecture and processing capabilities informs the application architecture choices and can lead to much faster and efficient deployed applications. An overall high-level procedural understanding of the environment for the programmer/developer – rather than being a dedicated systems or assembler specialist – also helps in communicating with and making recommendations to the technicians and engineers who configure the system software, network topography and other hardware settings and considerations. In this way, the finished application design works purposefully in harmony with machine characteristics and features. The selected hardware works in a fixed and predictable fashion whether or not the application programmer is aware of it, or takes account of it.

The programming language issues are completely analogous to the formulation of an organization design. Creating a design at the level of the business allows the designer to focus on the specifics of the business process and political and cultural considerations unique to the environment at hand. The organization architect is not concerned with the realm of the quantum physicist, even though that field is the ultimate physical substrate of the deployed design. Even if the designer was interested in the microscopic level of quantum process pathways, the detail would be overwhelming. Nonetheless, it behooves the designer to be informed by the underlying natural process mechanics in principle when building the organizational structure. In this way, the design can be in accord with intrinsic potentialities rather than unintentionally interfering with or obstructing them. *Ignorantia juris non excusat* - **ignorance of the law** is not an excuse.

To finish this comparative illustration with programming languages, it might be interesting to look at the case of the Wang 2200. In the late 70s and through the 80s, Wang Laboratories was a major player in the minicomputer space. However, the exponential rise in power of the personal computer was the death knell of minicomputers as a processing class. Like the Microdata Reality, Prime Computer, and Digital Equipment Corporation, Wang eventually succumbed and filed for bankruptcy in 1992 (Battle, 2008). The 2200 model was Wang's first commercially important offering and they sold about 65,000 machines all told, a few of which were still working in production as late as 2006. Most peculiar about the 2200 was the fact that the only

user software interface was a micro-encoded interpretive version of BASIC (a 3rd Generation language). There was no access to the machine code (Battle, Significant Characteristics of Wang BASIC, 2011).

The situation designing applications working with BASIC-2 on the Wang 2200 was very similar to the business of designing organizations without access to knowledge of the mechanics of Recursive Organizational Dynamics. The 2200 computer was a “black box.” You were entirely constrained by the scope of Wang’s dialect of Dartmouth BASIC and were unable to directly access the machine at the level of the hardware. Likewise, without ROD, the dynamical forces and nature’s micro-programming underlying the manifest level of organization design are completely unrecognized and inaccessible.

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