From Knowledge Cybernetics to Feng Shui

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Abstract

Feng Shui is a Chinese Taoist methodology that explores the harmony and balance of landscapes, and there is no equivalent to it in the West. Its metaphors are quite impenetrable for scientists, and this paper attempts to explore the principles of Taoism within the context of the science of cybernetics, and in particular knowledge cybernetics. The synergy that develops enables the metaphors of Tao to be expressed in terms that may be understood through Western metaphors.

Key Words: Viable Systems, Taoism, Feng Shui, Metaphor

1. Introduction

Knowledge cybernetics is a new frame of reference that, like the notion of the system at its inception, should be thought of as an abstract metaphor. As such, the ontological constructions that appear here should not be seen in positivist terms, as might be the case if we were attempting to create literal causative models. They operate at least to assist the formation of explanations about social community structures, processes and pathologies, and evaluation.

The abstract metaphor that we are using is a development of philosophical questions that asks "what is the nature of reality and knowledge". Systems concepts are normally framed in an epistemological frame of reference. Thus, it may be asked, "how can we improve a given complex situation for a social community", where the notion of improvement implies the acquisition of knowledge such that this can happen. It is a rarity for systems concepts to be defined in ontological terms. The reason is that reality is usually taken for granted because it cannot apparently provide a route, through epistemology, for improvement. However, one of the reasons that our social communities are pathological is that we each individually have our own realities, and when we form into bounded groups these too ascribe to new normative bounded realities. These realities form with the development of local paradigms that are the concern of epistemology. In this sense epistemology and ontology can only be divorced analytically, not practically or pragmatically. However, the analytic and pragmatic approaches are different sides of the same coin, especially if the analytic approach is explicitly intended for use to satisfy the needs of the pragmatic one.

The development of the approach we use here implicitly defines "knowledge cybernetics" within the broad context of complex systems. Complexity has been explored, for instance, by Nicolis and Prigogine (1989) and Cohen and Stewart (1994). It is also implicit to the theory of autonomous viable systems as explored by Beer (1959, 1985) and by Schwarz (1997). Just as the system is normally seen as a metaphor, knowledge cybernetics is metaphorical in that it:

(a) explores knowledge formation and its relationship to information;
(b) provides a critical view of individual and social knowledge, and their processes of communication and associated meanings,

(c) seeks to create an understanding of the relationship between people and their social communities for the improvement of social collective viability, and an appreciation of the role of knowledge in this.

In a coherent autonomous human activity system knowledge occurs in structured patterns. This provides the structure that enables the system to recognise its existence, maintain itself, and change, and its manifestations constitute systemic content. While the notion of system (attributed to Bertalanffy, 1951 through his notion of the "general system") is used to explain behavioural phenomena, its cybernetic exploration derives from the work of Rosenblueth, Wiener and Bigelow (1943) who were interested in its teleogical properties that relate to its identity, degree of autonomy and coherence.

In this paper out interest will be to adopt the principles that have developed in knowledge cybernetics, and in particular its central Social Viable System Model, and redesign its use to allow it to be used within the context of Taoist feng shui.

The Situation

Western philosophical learning for Chinese use has been prevalent in modern history, but there is now a movement for Chinese learning for Western use. Just as science developed its own philosophical approach and its own metaphors that took meaning from experience and created a base for knowledge (Brown, 2003), so this too happened in China. As far as science was concerned, the philosophically distinct paradigms[i] that arose resulted in unfathomable constructs (for Westerners) that had no conceptual commonalities and little ability to provide mutual comprehension. Despite the philosophical distinction between traditional Chinese and Western approaches there is recognition that both have a role in the inquiry and improvement of human and social situations. While there have been three hundred years of illustration (since the onset of the Western industrial revolution) that practical science can offer some utility here, and it has only been recently that some researchers exclusively supporting science have been able to recognise that traditional Chinese approaches are also of value. Thus for instance, acupuncture has developed as a paradigm within Taoism that has provided evidenced treatments for both anaesthesia (Streitberger, 2002) and pain release (Lundeberg, 2002).

It has always been the case that synergy between distinct but relatable paradigms has enriched our understanding of, and ability to deal with nature. This therefore points to a need to explore ways of expressing the principles that Chinese paradigms create in ways that scientists might understand. Since knowledge that each approach has is codified through its own metaphors, this makes it very difficult to find intermediaries to practically translate knowledge from one philosophically distinct paradigm to another. The problem of connecting them is referred to as paradigm incommensurability (Yolles, 1999). One result of this problem is that scientists sometimes unjustly paint Taoist approaches as superstition, so that the utility of its approach becomes lost.

This research paper develops from a new field of study called Knowledge Cybernetics (Yolles, 2005), from which the new Oriental Viable Systems (OVS) theory is derived. OVS provides a new synergy between modern day systems theory and the Tao. One of its application areas is feng shui, which appears to have a growing interest in the West in respect of urban developments with the globalisation and greater a mobility of Chinese.

In the West there is a field of study called urban landscape theory, which is connected with urban landscape design and its: social and behavioural processes, aesthetic theory, and critical planning practice. The critical planning design process that feng shui is concerned with explores urban landscapes by examining dynamic "object" relationships to which relative position and processes of change in space and time are important, a feature that Western urban landscape theory does not have. As a consequence, feng shui is able to seek harmony and balance in the design development process in a way inaccessible to the Western approach.

Feng Shui is a Chinese approach to explore landscape design. It adopts the proposition that urban landscapes need to be harmonically balanced with the natural landscape, and without that balance social problems can be more likely. While this paper will be used to explore some aspects of the urban landscape, it will more generally create a generic model that is able to connect Chinese Taoism with science. The theory that it will use to do this comes from management cybernetics as formulated by Yolles (2005) and Yolles and Frieden (2005).

The Implicit Synergy between Taoism and Science

Over the last 3 millennia China has developed ways of making inquiry to understand the situations it sees around it, and where these situations are problematic it has sought intervention strategies to enable the engineering of improvement. These approaches have a proprietary philosophical orientation that originates from three distinct philosophies: Taoism, Buddhism and Confucianism. All share the same source (Needham, 1962) as understood through the term San Jiao Tong Yuan (三教同源). While they exist through three separate paradigms, these are synergistic and defined within a common context that relates to the social and human condition. Historically[ii], it was the introduction into China of Buddhism that eventually resulted in a harmonisation with the earlier Chinese traditions of Taoism and Confucianism. It resulted in a blend of the Three Teachings, in which Confucianism was applied to education and ethics, Taoism to personal enlightenment or for illness or bad fortune, and Buddhism to death and the afterlife. This complementarily can also be illustrated through the synergistic relationship between the Taoism and Confucianism, where the former emphasises the free and easy original nature of the individual unconstrained by social convention, while the latter points to social forms and ethical norms. Like yin-yang, the two traditions coexist in a balance and complement each other. Hence a Confucian statesman could retire to the country and find joy in the natural aesthetic fostered by Taoism. In this section our interest will be restricted to a Confucian and Taoist approach and their relationship. They have grown together and influenced each other.

Just as science developed its own philosophical approach and developed its own metaphors that took meaning from experience and created a base for knowledge (Brown, 2003), so this too happened in China. As far as science was concerned, the philosophically distinct paradigms that arose resulted in unfathomable constructs (for Westerners) that had no conceptual commonalities and little ability to provide mutual comprehension.

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Paradigms are created through cognitive models that involve beliefs, values, attitudes, norms, ideology, meanings, and define mission. They use concepts that weave into a theoretical base able to be formulated as practical approaches to inquiry and intervention. When two paradigms are *commensurable*, they are coextensive in that: (a) the conceptual base that underpins the theory of each enables them to be connected while expressing distinct areas of interest, and they are (b) qualitatively similar in that they can be related to each other meaningfully. Even if two paradigms are coextensive, they may still be incommensurable if their concepts cannot be measured on the same scale of values, and where they are therefore qualitatively dissimilar.

Paradigms are generators of knowledge that derives from the propositions that make them up. We have said that in philosophically distinct paradigms this knowledge is expressed locally in terms of its embedded metaphors, and so cannot be understood by those who support the other paradigm. If we are trying to provide ways of connecting philosophically distinct paradigms, it will be useful to note Kuhn's (1979, p.149) view that "new paradigms are born from old ones", which occurs through a process of transition from competing incommensurable propositions, standards, norms, tools and techniques. This means that in philosophically relatable paradigms these elements can either (a) be in conflict, or (b) differences in language force misunderstanding; or in philosophically distinct paradigms no mutual connections are possible.

However, we are driven to seek a way of connecting two philosophically distinct paradigms, and this cannot be done from inside either paradigm unless they converge to a single paradigm (Yolles, 1996). This suggests that we need to develop a new paradigm that is capable of generating a new language that subsumes the others and is capable of in some way connecting the distinct metaphors. However, such a paradigm may not exist except in the conceptual eye of an inquirer wishing to create mutual understandings. Now a paradigm is a group affair that requires norms and conceptual expressions, and this may take time as either the conceptual base of the group develops. The transition stage, therefore, is not the creation of an existent paradigm, but rather the creation of a new virtual paradigm (Yolles, 1999) that can be seen as a temporary working paradigm that has been created for a specific purpose. This has virtually all of the elements of a paradigm, and it may become still born or it may develop into a healthy vibrant new paradigm. If it survives, then like all natural organic gestations, the final form of the paradigm that develops will be a function of the complexities that impinge on its development.

The creation of a virtual paradigm that can cut across two philosophically distinct paradigms may be expressed in terms of paradigmatic alliances. Such work has been

discussed, for instance, in management, and in particular in alliance theory (Iles and Yolles, 2002 and 2003), for instance within the context of international joint alliances, where culturally distinct organisations that maintain philosophically distinct paradigms attempt to create common allegiances. The purpose of such alliances is to enable the paradigms to be in some way coordinated, therefore permitting the organisations holding them to work together in some meaningful way. The failure rate for such alliances is not known, but it is higher than the 75% failure rate quoted (Kelly and Parker, 1997) for alliances formed between organisations that have philosophically similar paradigms.

It is clear then, that at least one way forward to enable those who are bedded in science paradigms to understand traditional Chinese paradigms is to create an appropriate virtual paradigm. This is the intention of this paper. The intermediary that we shall use to explore traditional Chinese paradigms in terms of science is Viable Systems theory (e.g., Beer, 1979), and in particular a variety of this called Social Viable Systems (SVS) theory as developed by Yolles (2005), which has been explored previously by Yolles and Ye (2005). While the approaches are philosophically distinct, they do maintain at least one central commonality, they both adopt holism in their own way as a central feature, and both entertain the principle of recursion. We shall call the new virtual paradigm that develops Oriental Viable Systems (OVS) theory, and in developing it we shall begin with the exploration of Chinese philosophical approaches.

To complete the work of this paper we shall briefly explore the nature of Feng Shui, and explain how the metaphors embedded within it can be understood in systemic terms.

2. The Metaphysics of Chinese Philosophy

The Chinese metaphysics is based on a systemic or embedded hierarchical framework that is used to explain all aspects of Taoism. It operates as an ontology that defines what is often called the “cosmology” of Taoism. The purpose of this framework is to distinguish epistemological contexts in which different situations are susceptible to different forms of description and analysis. This framework is of the form shown in figure 1, in which the embedded ontology’s express sequentially increasing degrees of archetypal complexity from the singular to the extended plurality. The nature of the origin (Wu Chi) is connected to the *one* beginning that precedes the identifiable being that has been called “the edge of emptiness” or the “no limit”. The Tai Chi is the “song” of the Wu Chi that provides reference for space and time. Chi is the essence that enables the start of creation in space-time. The dyad is a yin-yang dichotomy that defines the “first substance” of the universe consistent with the dualism of Kant and Hegel’s dialectic, and is represented for instance by the Tian-Di relationship that defines the dichotomous distinction between heaven and earth. The triad enables ontological distinctions between types of reality. It enables realities to be formulated in the human consciousness. Three triads have been identified: WSR is the Wuli-Shili-Renli relationship, and JSQ is the Jing-Chi-Shen which seperates between the types of energy available to human and material systems. The tetrad given in figure 1 is exemplified by the four seasons, but it should be noted that this has effectively been abandoned to a large extent because it could be otherwise subsumed into the five elements. Finally, the pentad exemplified by the five elements is a metaphor that originates from the five organs of the human being, and creates a frame of reference that enables practical situations to be explained and analysed. We could introduce yet another component: the future plurality, which allows for new opportunities of

discovery and understanding. It must be realised that the environments for each embedded ontological level defines its context.

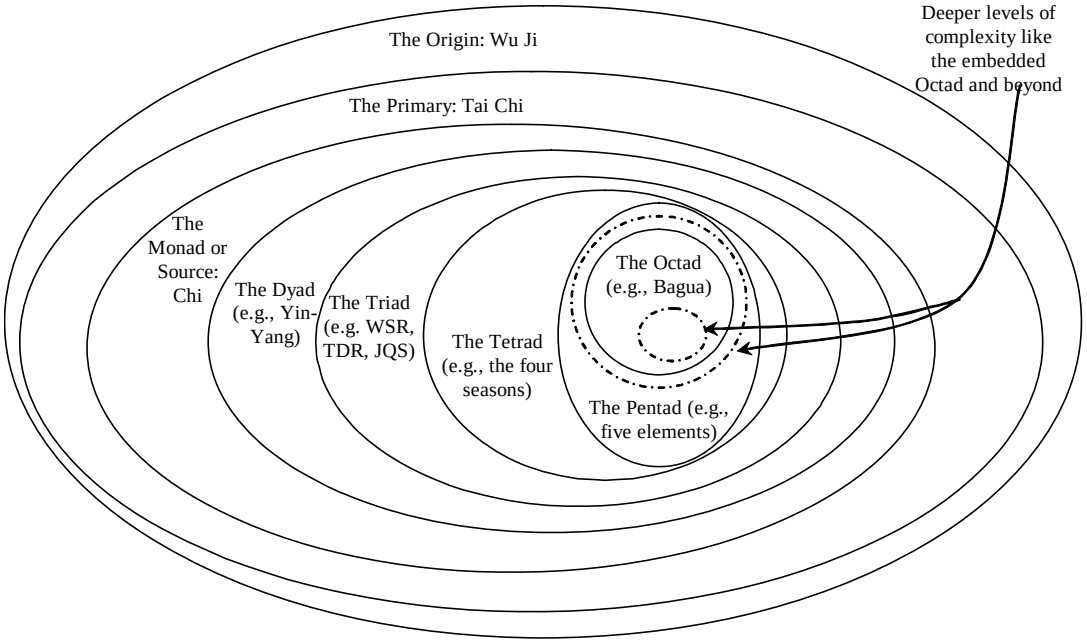

Figure 1: The Embedded Hierarchy of Chinese Metaphysics

Our interest in this paper is to discuss the domain of the triad, because we wish to connect it to another holistic approach of systems theory. In particular words figure 1 illustrates a "cosmic" evolutionary basis for OSA, from above to below within the ontological hierarchy, permitting a variety of methodologies to materialise including sociocultural paradigms. This provide the opportunity of expressing in more familiar Western systemic terms the notions embedded in Taoism that are used practically to explore human, social and cultural processes.

3. The Triadic Oriental Systems Approach

The triad ontological level is defined within a context provided by the higher dyadic level which, incidentally, subsumes all the deeper ontological levels of increasing conceptual complexity that are deemed to exist. Hence discussion of the triad will imply that its very nature is conditioned by the dyad: for instance the dichotomous yin-yang.

An Oriental Systems Approach (OSA) has been defined by Gu and Zhu (1996), Zhu (1996) and Midgley et al (2000) in the triadic domain using the WSR model which we differentiate ontologically into three distinct domains. The model is directed towards the exploration of how some concepts of neo-Confucianism can be explained within a scientific context. In this they use the concept of Li, meaning: essence, patterns, principles, reasoning. The base notion is that there are three ontological distinctions that can be used to define OSA. Briefly, these are Wuli, which refers to knowledge about objective phenomena, Shili that refers to ways of seeing, modelling and doing, while Renli is concerned with human relations, at the level of conceptual knowledge. It follows, Zhu indicates, that for such a model there are different Lis governing different phenomena, engagement, and relations, one of which cannot be properly understood or tackled in terms of others, therefore we have to seek different ways to deal with different Lis.

For Midgley et al OSA can be constituted as a methodology to enable holistic processes of enquiry and social improvement to be explored. They explain that Renli is a very important concept having been developed from Confucian philosophy to clarify to Chinese researchers the need to deal with human relations systemically. The Renli approach calls on methods and skills of facilitation. Within social action environment, facilitation skills can, it is argued, be enhanced if researchers can gain both theoretical and practical knowledge of group dynamics. They must also engage in activities of self-reflection to look at, and alter, their own roles in these dynamics and the wider social environment.

Elaborating on the ontological distinction between the three WSR domains of interest and their epistemological definition as already considered above, we recognise that the word Li (理) means[iii] reason, logic, science, inner principle or structure, and clearly refers knowledge. The terms of WSR are also well defined: Wu (物) is a thing, object, or matter, so that Wuli (物理) can be taken as physics or physical, i.e. the knowledge underpinning phenomena; Shi (事) is matter, thing, item, work, or affair, while Shi Li (事理) refers to human relationship, or the knowledge that underpins logical or relational associations; Ren (人) is man, person or people, while Ren Li (人理) can be taken as the basis for human thought or resource. Zhu (1996), drawing on the work of Gu and Zhu (1995, 1996), explores OSA in terms of WSR, and as above, argues that Wuli denotes to knowledge about objective phenomena, Shili means the ways of our seeing, modelling and (according to Gu and Zhu) doing, through we se the latter rather as engagement with doing, and finally Renli is concerned with human relations. None of these terms have immediate and inflexible definitions in English, and their meaning must be gleamed from contextual use. Within an epistemological context, Renli may be associated with the knowledge that underpins human relationships, and this can occur through the paradigms that people develop, adhere to and maintain. Shili is connected with the knowledge that enables seeing, modelling and engaging with phenomena, and Wuli is related to the knowledge of phenomena. The different Lis each govern different attributes that, for us are constituted as *phenomena* (Wu), *noumenal engagement* (Shi), and *existential relations* (Ren), one of which cannot be properly understood or tackled unless expressed in terms of the others. Therefore there is a need to seek different ways to address different Lis.

The three types of Li are differentiable yet inseparable. Their inseparableness comes from the notion (formulated by Confucius) that the meaning of one Li cannot be apprehended without that of the other. In effect, the analytical process of differentiating between Wu, Shi and Ren realities constitutes the formation of three ontological domains. These are all intimately linked with human decision, and each have their own inherent Li which are “different and distinct from each other, changeable in themselves, and influence each other in every concrete circumstance.”

4. Social Viable Systems

Philosophic perspectives operate at the bottom of all paradigms, and are best explored through an examination of ontology and epistemology. In the philosophy of science there is a concern with questions of how scientific research should be conducted, given an understanding of the nature of knowledge. As such those involved in philosophical tasks and issues seek to explore the relation between ontology, epistemology and methodology. Ontology is the study of being or existence that according to Weber (2003) (who appears to be referring to Cocchiarella (1991)) may also be defined as a matter of argumented systematisation about the nature of reality.

There is another way of seeing ontology (inferred from Roberto Poli, 2001), as a form of geometry, rather after the notions developed by Reiman. Here we consider that one function of ontology is to define a frame of reference that topologically distinguishes between arbitrarily defined distinct modes of being through the creation of a referencing system. This can provide for the creation of a geometry through which component properties and relationships can be relatively simply expressed through the creation of a common referencing system. As such geometry can arise through which component properties and relationships can be expressed.

In contrast, epistemology[1] is the branch of philosophy that is concerned with the nature, structure, origin, limitations of knowledge. It deals with a number of related problems, like sense perception, the relation between the knower and the object known, the possible kinds of knowledge and the degrees of certainty for each kind of knowledge, the nature of truth, and the nature of and justification for inferences. It also refers to the assumptions about knowledge and how it can be obtained (Hirschheim, 1992). Knowledge is intimately connected with meaning, and so epistemology can also cover considerations of the semantic fields that result from patterns of knowledge. Methodology is concerned with ways by which reality and knowledge in given situations can be studied, and it is interactive with ontology and epistemology. This is because the assumptions that underpin ontology and epistemology determine assumptions about methodology[2].

It is therefore useful to explore both the ontology and epistemology of any inquiry approach, and this is particularly the case where philosophically distinct paradigms ae to be related. Our approach is to adopt viable systems as one cornerstone approach in doing this. A viable system is a notion identified by Beer (1979) as one that can be seen to be self-dependent, and thus take on an independent existence. For him a system can be viewed as a set of hierarchies that together form a complex whole. The viability of such a whole can be defined in terms of the viability of each hierarchical focus within it that constitutes the system as a whole. These hierarchies may be most aptly seen as subsidiary wholes that are embedded recursively or fractally (using the notion of complexity theory - see Yolles, 1999) within the whole. The notion is consistent with the idea of the Russian doll with its reducing inner duplicates, or the Chinese notion of the magic box-within-box. (Yu, 1994)

Viable Systems Theory as proposed originally by Eric Schwarz (1997) is an ontological approach that proposes that adaptive autonomous systems have associated with them not only a phenomenal domain in which structures and behaviours occur, but also a virtual and existential domain. An example of the formal cybernetic ontological relationship between the three domains is provided in figure 2 (based on Yolles, 2005). Its metaphor differentiates between three domains of reality, that of phonomena (the thing), noumena (the mind) and exitence (being), and we shall come back to these notions shortly. The idea of operative management derives from Schwaninger (2001). It is also a form of operative politics, and can be directly related to the autopoietic processes. Autopoiesis enables images held in the virtual domain by an autonomous actor to phenomenally self-produce, i.e., give their images a

[1] According to the Grolier encyclopaedia

[2] According to Joseph (1946) method is any set of rules for dealing with inquiry that instructs how to set about the task of discovering knowledge. The consideration of such rules, as distinct from the use of them, is methodology. Methodology however, appears to be used in two ways: (i) in the abstract as the study of the rules within method that enable the discovery of knowledge, and (ii) in generalised practical terms of logic applied to a given situation. Myers (1999) is interested in ontology and epistemology in association with types of method. By method he means a strategy of inquiry which moves from the underlying philosophical assumptions to research design and data collection.

structured related behavioural status. Autogenesis is a second order form of autopoiesis, and gives the latter guidance through the creation of principles. These ideas are explored more deeply in Yolles (1999) and Yolles and Guo (2004).

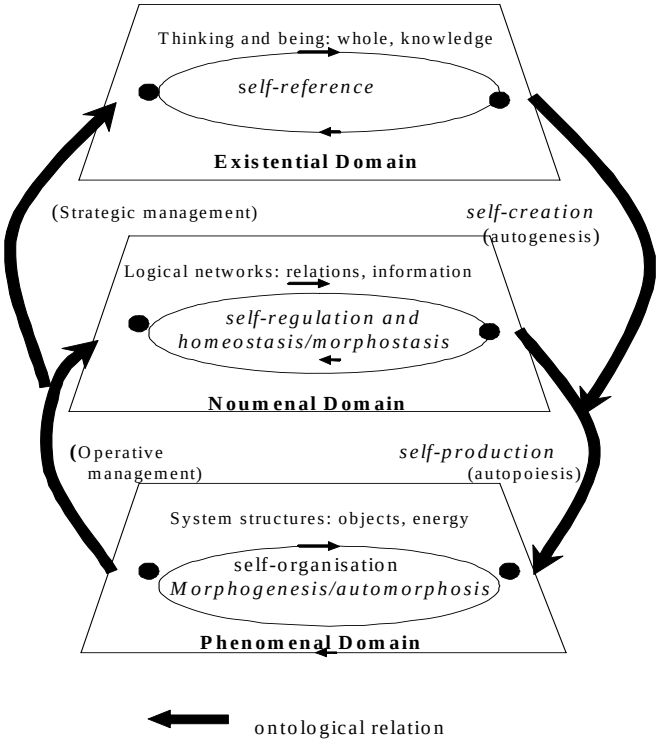

Figure 2: Symbolic Ontological Relationship between the three Domains of Viable System Theory (Yolles, 1999)

Schwarz (2001) provides a modelling approach that can explain why chaotic events should not just be seen as temporary accidental fluctuations that occur in our complex social systems, but are rather caused by the inadequacy of our worldview and our methods to manage complex situations. He argues that explicative frameworks like religious or political ideologies are not pertinent tools to understand these developments, and mono-disciplines like economic science, sociology, psychology, anthropology, etc., are unable to apprehend hybrid systems. A linguistic framework that comes from a suitable coherent model is needed that is able to describe and interpret complex situations that are part of more or less autonomous complex systems. He argues that various theoretical developments have occurred to address such approaches, including general systems theory, non-linear dynamics (chaos theory), complex adaptive systems research, cellular autonomata, recursive and hyperincursive systems, and artificial life. The frame of reference developed by Schwarz is intended to interpret complex systems with more or less autonomy or operational closure (like self-organisation), and possessed of other related facets as self-regulation, self-production, and self-reference.

The approach adopted here is one that comes out of the “complexity systems” stable for which cybernetic principles, as discussed for instance by Beer (1959, 1966), are important. In complex systems there is a special feature that Beer uses centrally to his work: recursion. Following Espejo (1997) autonomous organisations handle the

complexity they create by establishing a social space within which social subsystems exist autonomously and thrive. He refers to this as recursion, where an autonomous organisation may be expressed in terms of recursively embedded autonomous organisations. However, this may equivalently[iv] be expressed in terms of fractal patterns: where a self-similar system looks approximately like itself at different levels of inspection (Mandelbrot, 1982). The organisation then has the potential to fulfil the purposes of the whole system through those of its fractal parts, and this contributes to the development of cohesion. Espejo goes on to explain that organisational complexity cannot be managed by assuming there is a unitary purpose. Language and methodology are required that enable people to understand how cohesion can be produced around the very different purposes existing among individuals and groups within the organisation. These need to offer a means of creating structures within which organisational actors can self-construct behavioural processes that allow them to perform their own actions, while at the same time creating cohesion between autonomous units in working towards an agreed purpose for the larger organisation.

Recursion is a fundamental feature of both of the two formal theories that we shall introduce here. SVS theory is an approach that is able to graphically explain how systems survive and change. It is based on the theory of self-determining autonomous systems devised by Schwarz (1997). This form of Viable Systems Theory explored the mechanisms and opportunities by which autonomous systems were able to survive and change. The metaphor of this approach not only distinguishes between being (existence), mind (noumenon) and thing (phenomenon), but it also considered that the thing has a particular nature that is fundamentally systemic. The system is an idea that enables a collection of related things to be seen as an integrated assembly, as a whole, that is more than the separate things that compose the phenomenal domain of interest.

The autonomous system that we are talking about can be more simply depicted as in figure 3, referred to as the Social Viable Systems (SVS) model. We can briefly explore the three domains that can be related to ontological contexts. Normally, people talk only of *existential* and *phenomenal* context. A historical view of the existent comes from Kant, for whom knowledge was seen to arise through a dualism that derives from the interrelationship between a knower and an object. While these are separated from each other, a partial *fusion* or *synthesis* develops between them. When it arrived, the supporters of *phenomenology* dropped the notion of knowledge fusion or synthesis. Rather, it was seen that the parts of knowledge come together through *intentionality*[v] to create a *whole*. The whole is constituted within the field of shared human *existence* or *Dasein*[vi]. It is also maintained in phenomenology that access to reality is mediated through consciousness and its attendant capacity for understanding. For many, understanding comes from knowledge, and knowledge is acquired from the experience of phenomenal reality. There is an inferred relationship between the existent and the phenomenal that has importance to modern systems. Consider that a global phenomenon is defined by a set of local objects of attention in durable interaction, and perceived through an existent conscious conceptualisation. If the assembly can be assigned an existential *identity* that can also be associated with a global intentionality, and that makes it distinct from the *local* objects that compose it, then the *global* phenomenon has been identified as an emergent *whole*.

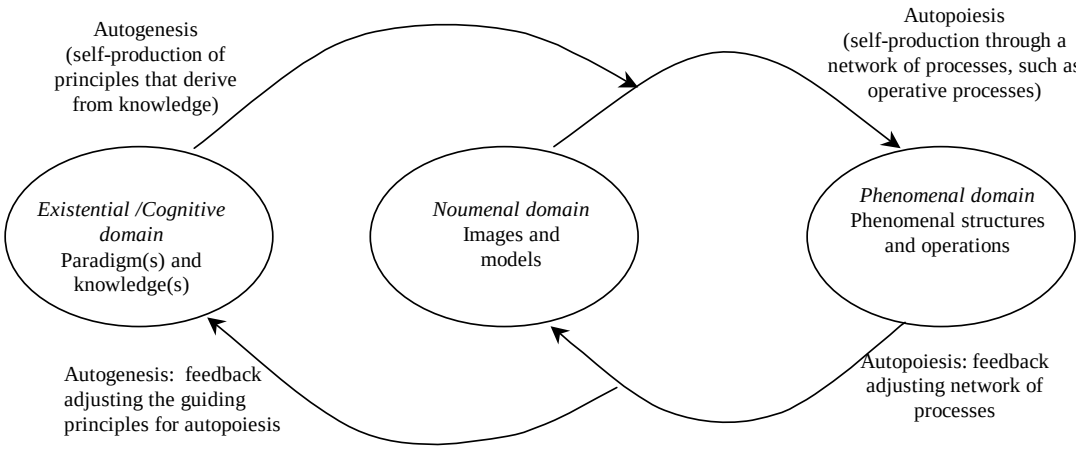

Figure 3: An Autonomous Holon expressed as the SVS Model.

In addition to the existential and phenomenal contexts that we have referred to, we can identify another, the *noumenal*. Its antecedent is the notion that truth about reality can be deduced with absolute certainty from our innate ideas, a notion prevalent in the 17th Century through thinkers like Frances Bacon and Réne Descartes. Kant in the 18th Century considered that these innate ideas were constructed by minds in what he called the *noumenal* realm. Within these contexts, the notion of the noumenon can seen as a consummate universal visualization of reality. Such absolute idealism provided entry into the constructivist frame of reference, and enables us here to propose the notion of *global* (or as a logical subset of this, *local*) *noumena*. *Global noumena* are constituted by virtual *ideates*. An ideate is constituted as a system of thought expressible as logical or rational structures that may be formulated as, or associated with, sets of often relatable but not necessarily coordinated images. Ideates are formulated demiurgically by social collectives, which construct them with intention over time and through the influence of social factors (like culture, politics, ideology, ethics, social structures and economics), in an attempt to "overcome chaos" and create conceptual order. Since each social collective produces its own global noumenon which, like the collectives with their relatively distinct cultures and ways of thinking, they are necessarily inconsummate relative to each other.

Each domain may host a singular system or plurality of related type system. Behavioural systems are hosted in the phenomenal domain, virtual systems in the noumenal domain, and metasystems in the existential domain. The three domains in their pattern of interaction are together referred to as an autonomous holon that metaphorically describe social agents (Yolles, and Guo, 2004). The holon is recursive in nature, and where the phenomenal domain applies to individual and social behaviour, the three domains can be assigned properties. Autopoiesis fundamentally enables images of a virtual domain to be manifested phenomenally through self-producing networks of processes. Autogenesis enables principles to be generated that guide the development of the system.

The formulation in figure 3 constitutes the ontological basis for Social Viable Systems (SVS) theory, and it can be used recursively. An illustration of this plurality can be created if we explore a constructivist approach to scientific enquiry (though there is no space to show this here), using Frieden's (1998, 2004) idea of the creative observer, the inquirer whose worldview influences the way that information is acquired. It can also be related to the notion of structural coupling that occurs for structure-determined/determining engagement in an interactive family of systems. According to

Maturana and Varela (1987, p. 75) the engagement creates a history of recurrent interactions that leads to the structural congruence between the systems, and leads to a spatio-temporal coincidence between the changes that occur (Maturana, 1975, p. 321).

5. Oriental Viable Systems

The three types of Li are differentiable yet inseparable. Their inseparableness comes from the notion (formulated by Confucius) that the meaning of one Li cannot be apprehended without that of the other. In effect, the analytical process of differentiating between Wu, Shi and Ren realities constitutes the formation of three ontological domains. These are all intimately linked with human decision, and each have their own inherent Li which are "different and distinct from each other, changeable in themselves, and influence each other in every concrete circumstance."

It is now possible to express the WSR model in terms of the cybernetic ontology that underpins SVS, as shown in figure 4.

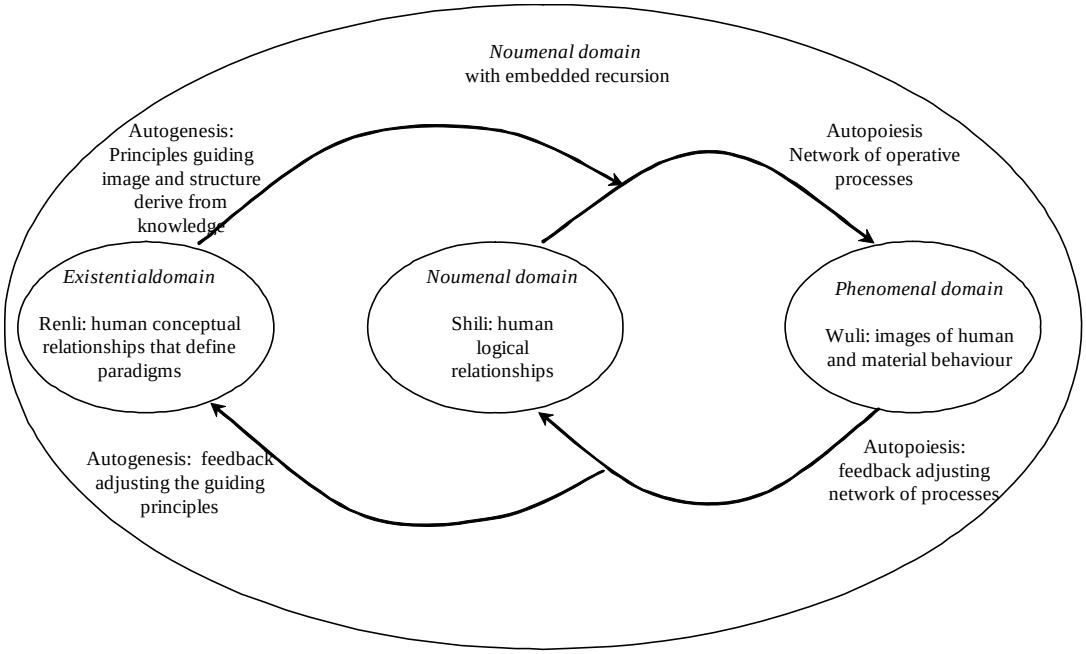

Figure 4: The Ontological Nature of the Oriental Viable System

It is possible to extend the WSR paradigm within the context of OVS. In the 11th Century *Zhang Dai* talks of the "three treasures" (San Bao) of Taoism. While it is possible to refer to the Wuli-Shili-Renli triad, the very nature of these ontological states requires energy to drive them. Such energy is an essential ingredient for the "internal arts" of healing, and for instance Sunshine and Wang (2003) note that there are three expressions of Chi (or Qi) energy exist that, in respect of their interest in acupuncture, are measurable. For them, these three energies can be associated with matter, energy, and information.

Energy facilitation is an integral part of Taoism, and three ontologically distinct forms of energy can be identified through the ancient idea of the three treasures. According to (Liang and Wu, 2001) these treasures are the Jiang-Chi-Shen energies[vii] that theorize and explain the human physiological system and the fundamentals for all facets of life and its many variations. Jing (精) is the essence of material-life is a

coarse physical energy, Chi (氣) is an energy that we may see as psycho-physical in nature, and Shen (神) is the spiritual life force energy. As such the Jing, Chi and Shen are inseparably linked with each another. The nature of this relationship is that Jing is manifested as Chi that is in turn manifested as Shen. Shen may also ultimately be manifested as Tao - a process of achieving ever-higher levels of integration. These energies underpin and enable the WSR connections. In table 2 we show the connection between WSR and San Bao (the three treasures in Taoist alchemy), and in figure 5 we show the relationship between the WSR and JQS, illustrating that they are intimately connected in what Maturana might refer to as a structural coupling in which each energy state intimately responds to and enables each of the ontological knowledge conditions.

6. Developing the Dragon Metaphors in Feng Shui

The dragon metaphors are widely used in OSA throughout the Chinese history. In this case situation we focus on Feng Shui dragon metaphors that are used of exploring a location and the relationship with its environmental landscape. As we introduce to OVS model structure as an embedded multi-hierarchy with different ontological levels (figure 1). At the dyadic ontological level for instance, this permits us to express landscapes in terms of a logical metaphorical relationship between two "dragons", the mountain and water dragons that together interact to create a landscape dragon. These dragons are code for conceptual forces that emerge logically from the urban landscape structure.

	Generic Ontology		
Paradigm Epistemology	**Existential**	**Noumenal**	**Phenomenal**
Neo-Confucianist WSR	Renli	Shili	Wuli
	Existential human relationships through paradigmatic knowledge	Knowledge about seeing, modelling and engaging with phenomena.	Knowledge about phenomena
San Bao as a triadic neo-Taoist and neo-Confucian Energy	Shen	Chi	Jing
	A directed ordered existential process, defined in terms of a spiritual or dynamic driver of life force through meaning beyond the physical, sexual and animalistic	Psycho-cognitive, linked to Jing and Shen and that drive the virtual imagination.	Known as the treasure of physical energy, and often seen in terms of male or female sexual energy.
Mutual Linkage	Renli-Shen	Shiki-Chi	Wuli-Jing
	Shen energy drives paradigmatic relationships based on asthmatically and worldview	Chi energy drives psycho-physical processes in two aspects: exhibitions in physical ability and intellective ability	Jing energy drives phenomenal behaviour as human creative resources, and can also be considered as a condensed seed of information.

Table 2: Posited Relationship between WSR and San Bao, through the commensurability of neo-Confucianism and Taoism

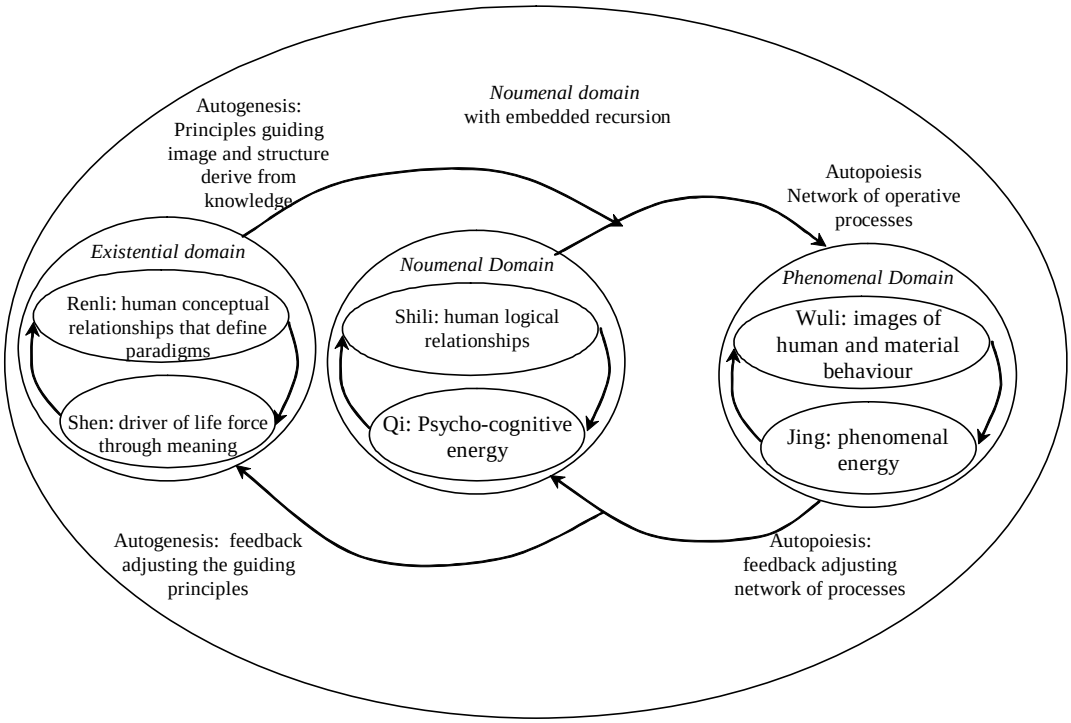

Figure 5: Relationship between WSR knowledge states and SQJ energy states

The dyadic relationship between the dragons is also represented as a yin-yang relationship. The nature of dichotomy that this creates is that the existence of one force does not make sense without other. Therefore, when defining yin dragon and yang dragon we have to know the comparative pairs, however a formal definition to yin-yang dragons can be made as *In Feng Shui metaphysics the yin and yang dragons are each part of the dichotomous duality metaphor that can each be assigned to two types of landscapes.*

Thus we may have mountain dragons and water dragons that each represents two basic material elements of landscapes spiritualities. Yin-yang processes are not connected to positivist Kantian metaphysics, but rather to constructivism (Yolles and Frieden, 2005; Yolles, 2004). That means the nature of yin-yang and their very relationships are dependent upon the interest of the inquirer.

Another example is the Feng Shui ritual within the measuring process is the flat plane lands. A Feng Shui classic was written by Yang in the Tang dynasty that told us how we can deal with the mountain and water dragons anywhere, even in a plane landscape through the use of ritual formulation: *one inch higher is mountain dragon and one inch lower is water dragon.* Those semantic dragon metaphors are adopted in ancient gardening design as we come to the Beijing Royal Palace City in the front of main entry there is an artificial water flow and a roads system that induces Chi flow into the gate. We may also find a man-made stone hill in a specific direction that indicates that there needs to be a mountain dragon Chi to reinforce the Feng Shui situation. These can be viewed as ancient landscapes and environmental designs that link a built road system with its surrounding. Within the context of the Chinese dragon metaphor, this has brought a comprehensive imagery to represent and analyse the Feng Shui situation of human life and death.

Analysis of the relationship between Man and the different dragons can occur through the use of WSR. We can take man as the Ren dragon, the mountains and waters are Wu dragons, and the connection between those are Shi dragon. There are many

examples that show us that the dragon as metaphor has long history of usage in the oriental metaphysics and it still guides Chinese culture.

The WSR model can be used to simplify all of the complex aspects of Feng Shui metaphysics, whose systems where formed in the Tang dynasty by Yang Yusong who wrote his Tian Yu Jing (天 玉 经) and Qing Nang (青 囊) series (see Ye, 1997).

7. The Dragon Metaphor as an OVS model

Dragons in Feng Shui are a virtual logical or rational ideate construction that exist as a result of spirit that results from understanding and knowledge. The relationship between mountain and water dragon can be expressed in terms of another related metaphor. Following Yolles (2005) we can refer to two dichotomous elaborator forces that operate in a yin-yang relationship as ideate or imaging components. These are equivalent to patterning and dramatizing forces. These are defined as follows in table 3, and the graphical relationship between the mountain and water dragon is represented in figure 6.

What is significant here is that by the principle of recursion, and we can recursively embed the whole virtual domain for figure 5 into the (virtual) patterning domain, making some slight adjustments to the interpretation of each regressed domain due to the new context. The consequence of this is that the mountain dragon has within it both itself and the water dragon from which it arises. A similar argument applies to the water dragon. In the classic Feng Shui tradition, in fact, these principles have been universally practiced since the time of the Tang Dynasty. There is another manifestation for this. The existence of a planes dragon (metaphorically connected to flat lands like savannas) is such that the mountain dragon arises out of the water dragon or vice versa. This paradigm has shifted since the time of Yang who wrote at the end of the 9th Century, who argued that for balance and harmony in the landscape a good location must have both water and mountain. This is a prerequisite condition. However, it is not the only condition. The sounds of the great plane area have greater anticipation that does the mountain area in that there is little resistance to flow, as would occur in the mountain composed of restricting structure or in water that flows in its own trajectories. Master Jian Dahung also supported such an idea in his famous book known as the Classic Water Dragons published in the 17th Century.

Polity **T**he creation of direction and potential outcomes	**Elaborator forces** Involved in the creation of directed impulse	**Patterning Mountain Dragon**	**Dramatising Water Dragon**
Through the acquisition of symbolic representation of affective knowledge (called elaboration knowledge) this operates through virtual knowledge that operates through information that comes from measures of variety.	Supports both elaborators (who understand how to deal with the relationships between cultural attributes) and planners (who through their understanding of cultural attributes and its patterns of knowledge are able to determine possible trajectories for action).	This is connected to problems of symmetry, pattern, balance, and the dynamics of physical relationships between entities. It defines patterns of long term change, embeds principles of organisation, is associated with mass and inertia, is able to change metamorphically, and maintains an implicit record of its own history.	This is associated with purpose and direction, and embeds direction, flow and narrative in its ever-changing story.

Table 3: Relationship between Water and Mountain Dragons of the Oriental Metaphor.

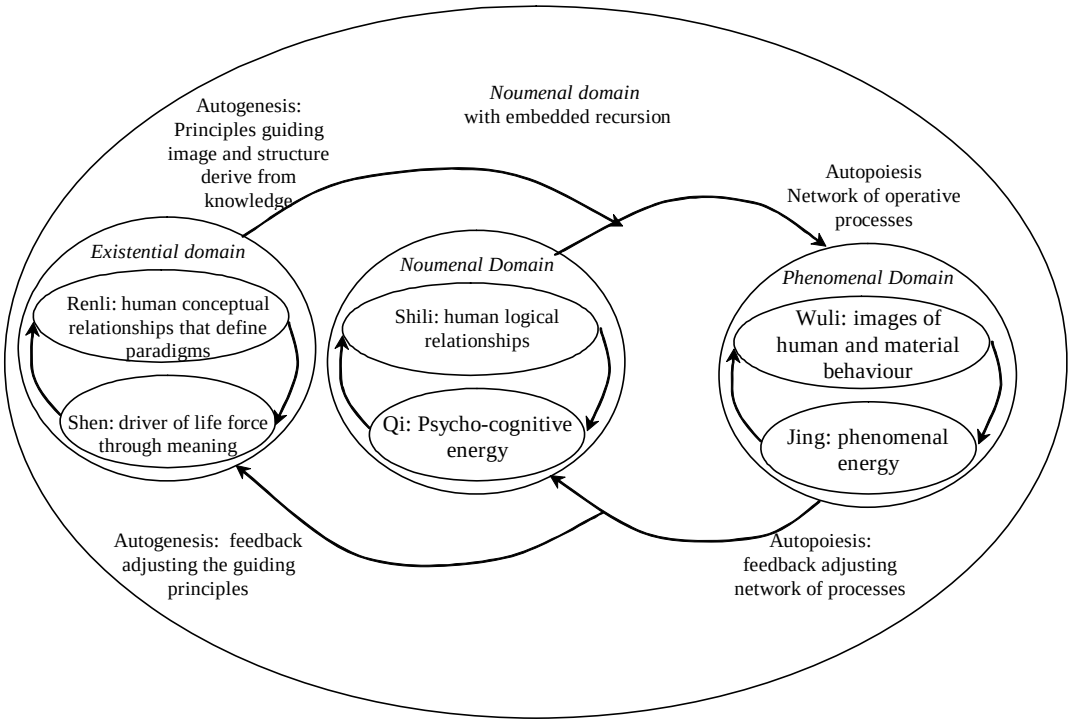

Figure 5: Relationship between WSR knowledge states and SQJ energy states

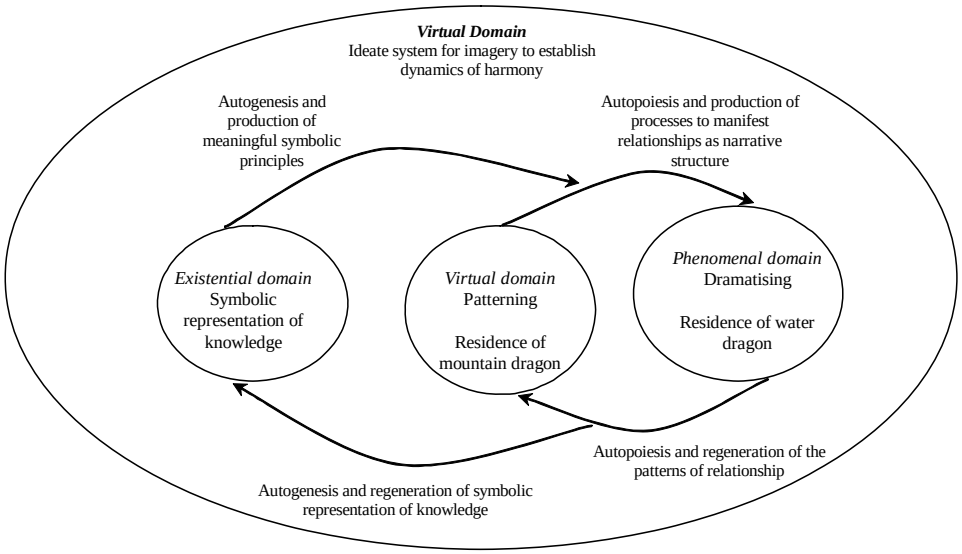

Figure 6: Relationship between Mountain and Water Dragon

While the mountain and water dragons can each be envisaged as virtual entities that operate in the virtual domain, they may each be considered to exist as autonomous systems with their own proprietary virtual and existential domains. Here they interact, this resulting in a balance that is manifested in the phenomenal domain. This interaction can be expressed in terms of OVS as shown in figure 7. Here, when referring to the local domains of each metaphorical dragon, we use the terms traditional to managerial cybernetics. Considering each phenomenal dragon as a system of structure with its associated behavior, each system has associated with it a metasystem (an existential component) and a virtual system (a noumenal component).

According to the theory of SVS, the mountain and water dragons can become one when they find harmony together, and when this occurs they are spontaneously manifested into the planes dragon. This relationship can be explained within the context of SVS as illustrated in figure 8.

While we can easily demonstrate the relationship between the distinct dragons, the question now is how can measurements be made for an urban landscape that affect the balance between the mountain and water dragons? The base relationship is expressed in figures 9 and 10. In figure 9 we illustrate that the inquirer into the urban landscape affects the nature of the observations or measurements being undertaken. Figure 10 is an elaboration of figure 9, in which it is shown how the logical dynamic of the urban system can be identified in terms of dragon relationships.

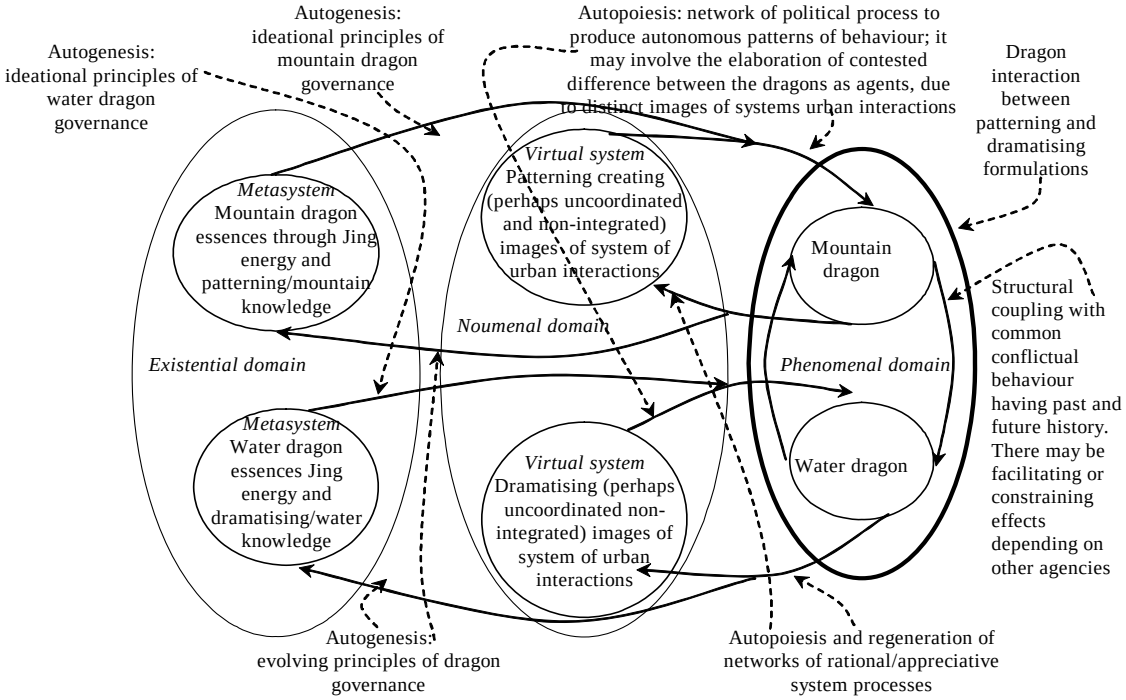

Figure 7: Interactive Relationship between Water and Mountain Dragons

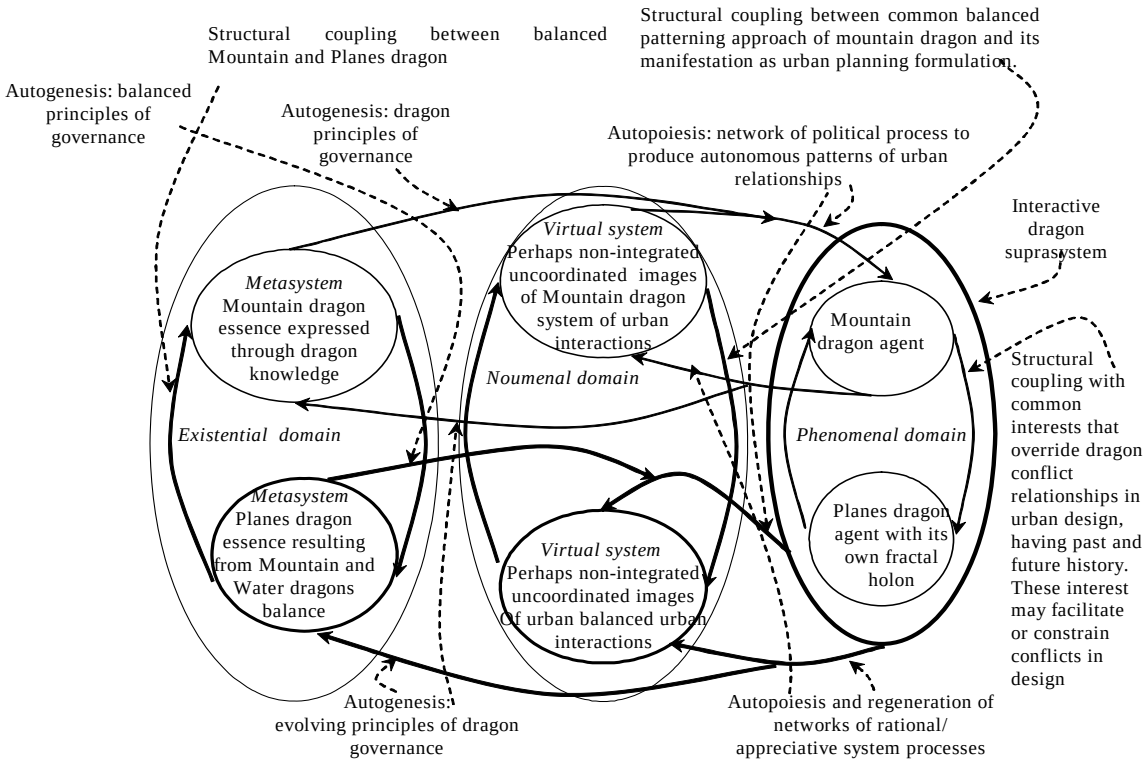

Figure 8: Balanced relationship between Mountain and Water Dragons resulting in the Planes Dragon as a Balanced Alliance

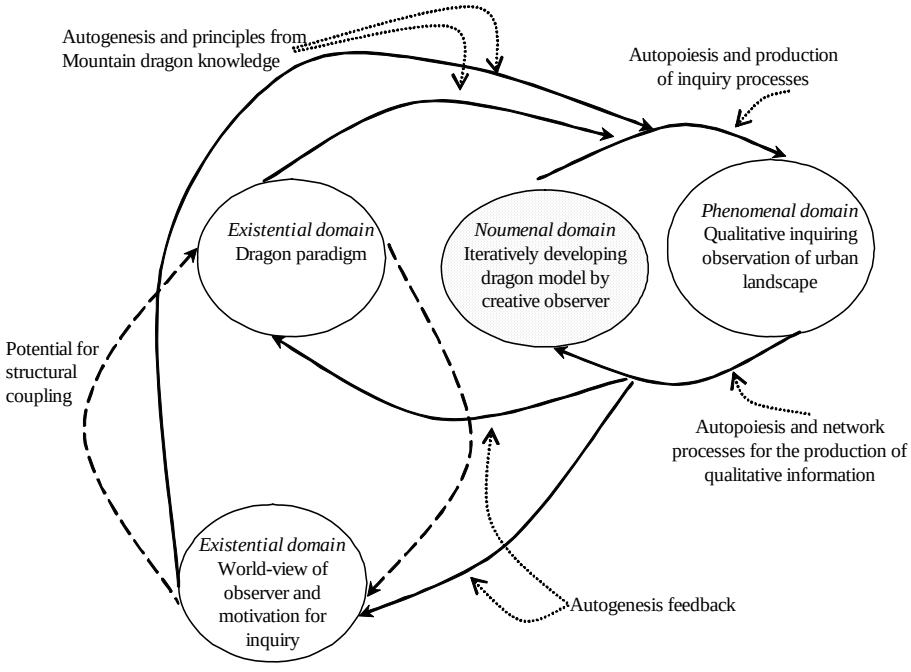

Figure 9: Relationship between Dragon Model of Inquirer and the Observation/Measuring Process

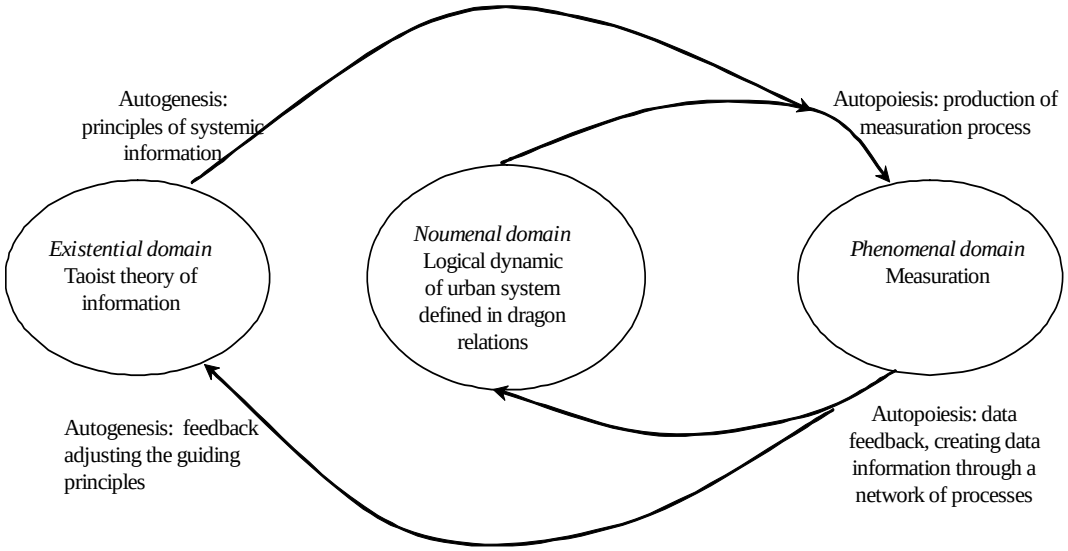

Figure 10: Relationship between Dragon Imagery and Measuration

8. Measurement in Feng Shui

We have no space in this paper to explore to any great depth the techniques involved in Feng Shui measurement. The purpose in this section is simply to indicate the feasibility of adopting the OVS approach to create measurements that can result in a Feng Shui evaluation to bring harmony in the relationship between the urban and natural landscapes.

We have developed a simple model to understand how Feng Shui measures an urban landscape. To measure the balance between the yin and yang dragons we have to extended our focus down to lower ontological levels that include the triadic WSR, the pentadic 5 element, or even more deeply than we have indicated in figure 1, through the octadic trigram called Bagua[3] that creates a set of dimension that enable Feng Shui calculations to be related immediately to landscape orientations. The dimensions of the octal are fundamentally the 8 symmetric points of the compass to define a landscape in terms of space-time energy changes. This octal can also be related to the five elements which now creates a context for which the following metaphorical representations are made: wealth, fame, love, family/health, education, career, and three types of luck. All of these approaches come together to contribute to the overall measuring process in Feng Shui, and this can therefore be used as a means by which landscapes can be related to personal fortune.

It is not only Feng Shui that has access to the Chinese cosmological hierarchy. All forms of Tao practice involve a variety of ontological levels, for instance acupuncture involves the pentadic level, while the social measuration involves the triadic and perhaps also the pentadic ontological levels depending upon what degree of detail is required. Here we shall simply be concerned with measurement through the triadic ontology as discussed earlier through WSR.

We have said that our frame of reference for measurement will be defined in terms of the dyadic and triadic ontological levels. The dyadic level, through the notions of Tian

[3]There are many explorations of this, for instance
http://www.fengshuibestbuy.com/eightaspirations.html

(heaven) and Di (earth) provides a context for the frame of reference, and the triadic level WSR provides for the detailed analysis.

A good Feng Shui location indicates that the urban landscape can harmonise with the natural landscape. In the Fung Shui tradition principles of measurement for the degree of harmony that exists follows one of two main academic schools of thought. These are the Form School which focuses on the formative structure of the landscape. An example of this comes through the work of Yu (1994) who has developed fractal form of Feng Shui of this type. The other school is the Li School, which involves the creation of a virtual dragon as a measurement of the phenomenal mountain and water dragons that are constituted as the front and back of a building. These dragons and their interaction can be defined as part of the Wuli domain as illustrated in figure 7. The virtual dragon is the mountain and water dragon in change throughout space-time.

In traditional classical Xuan Kong Fung Shui a river map is used to evaluate the landscape. A "magic square" is used to perform Feng Shui calculations. This consists of a 3x3 matrix on which the Taoist metaphysics develops. Its distribution of 9 numbers constitutes a reflection of the overall landscape, and this distribution needs to be ordered to reflect landscape harmony and balance in the landscape design. The numerical shape of the matrix is a result of the Feng Shui measuring process that used a set of algorithms that is beyond the scope of this paper. To measure the change processes reference should be made to the Book of the Burial written by Guo of the Jing dynasty 1400 years ago.

9. Conclusion

Oriental philosophy hinges on a systemic ontology referred to as its cosmology, which defines how levels of greater detail can be accessed through different types of modelling process. It is consistent with modern notions of complexity in that it permits higher simple ontological levels to define contexts within which lower levels and their more complex details are expressed. The very interaction between these different ontological levels is important to any conceptual modelling that occurs within Taoism. The ontology that derives from Social Viable Systems theory is different. It relates rather to the idea that autonomous systems exist with their proprietary ontology’s. In the context of Tao, the dragons are conceived as virtual autonomous organisms that have a spiritual origin, and otherwise interact with other dragons in ways that enable predictable outcomes to develop. The ingenuity of Tao conceptualisations as it has developed over the last three millennia is only appreciated when one sets the models up within a scientific context. The capacity to create sophisticated models that deal with a variety of levels of complexity (only some of which have been explored in this paper) is also impressive.

We began this paper by discussing the problem that the Oriental philosophical paradigms are quite distinct from those in Science. In particular they use different metaphors to underpin their knowledge processes. The consequence of this is that the paradigms are incommensurable. The approach that we have adopted is intended to overcome the problem of this incommensurability, thereby enabling some degree of metaphor transparency to occur as far as science is concerned. To do this we have used the social cybernetic viable systems theory and in particular Social Viable Systems theory.

We have set up SVS within its complex cybernetic capacities, and shown that they can easily reflect the metaphors of Taoism. Indeed, doing this provides some significant degree of transparency for the whole Taoist process if explored from the more familiar scientific perspective of SVS. The cybernetic principles that are well embedded in science provide very powerful explanations of the whole Taoist process. From this base, we have discovered that the dragon metaphor of the Tao is reflective of dichotomous interactive forces rather like the work of Pitrim Sorokin (see Yolles and Frieden, 2005) in his exploration of socio-cultural change, or Jung's (see Yolles, 2005) ground breaking work on personality.

This paper has should be seen as an introduction to the OVS paradigm, rather than providing a full exploration of the practical aspects of Feng Shui. The development of a complete Oriental Viable Systems theory that can encompass not only the principles and practices of Feng Sgui, but also other of the practical arts of Taoism, is a long and extensive process.

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[i] A paradigm may be defined as an expressed shared worldview that is built on a cultural belief system, maintains a pattern of knowledge that provides particular ways of understanding situations, and directs the behaviour of its membership.
[ii] A comparative Anthology of Ancient Texts, in http://origin.org/ucs/ws/wsintr4.cfm, accessed, April 2005
[iii] Chinese-English on line dictionary at http://www.tigernt.com/cgi-bin/cedict.cgi
[iv] By this we are recognising that the concepts of recursion and fractal structures are closely related.
[v] Husserl is responsible for this. See for instance http://www.husserlpage.com/
[vi] This is Heidegger philosophy. See for instance http://www.webcom.com/paf/ereignis.html,
[vii] For a definition of these terms see for instance the The Tai Chi Chuan Lun (Discourse) at the website http://www.taichichuan.co.uk/information/classics_lun_commentary.html, or the the Toowoomba Buddhist Centre, T'ai Chi, http://www.fwbo.org.au/toowoomba/tai_chi_chuan.html, accessed June 2005.