Research Essay

The Role of Consciousness in Organizations (Part I)

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Abstract

The study of consciousness in organisations is still in its early stages and there is immense scope for future research in numerous directions, which may be better directed as our knowledge in this area grows. Analysis using artificial neural networks has revealed patterns in the dataset generated from our sample. The responses received, pertaining to certain axes of the questionnaire, appear to be more coherent, while those pertaining to other axes appear to be fairly de-coherent. This distinction appears to be quite discreet. From available conventional management data, it is apparent that although the organisation appears to deliver good results in terms of operational efficiency, it operates in a demanding environment with stretched resources, shows significant staff turnover and leave utilization, and there are some critical areas of dissatisfaction amongst the staff, namely internal communication, staff cohesion and feeling under-valued by the organisation. This study seems to suggest an association between organisational consciousness and functionality, which should be investigated further in future research.

Part I of this two-part article includes: Introduction; Literature Review; Methodology; and Results.

Keywords: Consciousness, role, organization, coherence, decoherence, artificial neural network.

Introduction

What is it that ultimately drives the activities that determine the functioning of organisations? Any socio-economic organisation, at its most basic level, is in-fact, a biological system, composed of human beings organising themselves in an attempt to perform some sort of function. Organisations form the basic functional units of all socio-economic structures, and interact with and within other organisations to form progressively larger and more complicated organisations that collectively constitute human society.

There is a fundamental organising principle apparent in biological systems (Maturana & Varella, 1984), which bears a remarkable resemblance to the experience of human consciousness, insofar as there being evident, clear intent and purpose, which is strongly suggestive of a sense of awareness. This is widely and clearly seen in nature – individual organisms, animal colonies and entire ecosystems function as organised systems of individual elements and actions. The study of consciousness addresses this central organising principle that is responsible for the coherent

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functioning of these individual agents that interact with each other, and it is therefore central to the study of organisations.

Conventional management practices are largely focussed on increasing shareholder wealth, and as such are mainly geared towards financial performance, through reliance on conventional business and financial indicators (Bloom & Van Reenen, 2006). However, many organisations managed in this way are seen to be unsustainable, and many do not succeed in creating overall value. As a result, it is questionable whether society as a whole will prove to be sustainable, and it is becoming more important to question and explore the driving force behind our managerial decisions, which so profoundly influence the functioning of our organisations, and the development of our society.

Modern society involves the activities and interactions of a myriad of diverse organisations, which are managed by a variety of management practices, constituting a complex system that defines who we as a society are, and that is constantly determining the impact which we have, every day, on our planet. However, we know little about what is actually at the core of this complex system and the mechanisms by which results are being produced. Superficially, we can identify organisations that perform well, but when we compare them to those that perform poorly, and that we consider to be dysfunctional, we are unable to accurately elucidate ultimate cause and effect. Around the world, we have organisations that function in similar environments, utilise similar resources and engage in similar activities and management practices, yet produce different results.

Sustainability, through the long-term creation of value, should be the goal of businesses in our society, because it is through this, that humanity as a whole can prosper, rather than destroy itself (Baets & Oldenboom, 2009). A "healthy" organisation should therefore be one that fits this description, and contributes positively towards a sustainable future. On a managerial level, we find that we are unable to explain precisely what is required to create a functional or "healthy' organisation. As a result, many aspiring, motivated, well-meaning managers take on the task of managing organisations with the best of intentions, and sometimes the best education and experience, only to fail dismally for obscure reasons, and in the process destroy enormous amounts of value.

Apart from there being no consensus in the scientific community regarding the nature of consciousness, we are not clear on the specific role played by consciousness on effecting the outcomes that we observe in organisations, nor are we clear on the mechanisms involved in reaching those outcomes. Furthermore, our current Newtonian ontology does not provide a basis from which we can even begin to explore these fundamental concepts and ask basic questions to help us understand these issues. The problem then, is that organisational health and performance appear to be affected by certain intangible factors within the organisation, which we are unable to quantify, understand or address by conventional methods.

The question that drives this research is "What is the role of consciousness in organisations?" An attempt is made to investigate consciousness, using the level of coherence in the organisation as a proxy, and correlate this with other, more available and commonly used indicators of functionality and performance. The phenomenon of coherence is one that is readily observable in nature and has been described in the academic literature. It refers to the synchronicity which is observed between interacting elements within certain systems, which tend to constitute a situation where elements appear to be carried along harmoniously by nature (Baets, 2008). Coherence has also been successfully used as a proxy for consciousness on an individual physiological level, in previous studies (Lehrer, Vaschillo, Lu, Eckberg, Edelberg, & Hamer, 2003; Lutz, Greischar, Rawlings, Ricard, & Davison, 2004), and the justification for using an approach which involves using coherence as a proxy, is developed further on.

This study was conducted at Groote Schuur Hospital and explores the consciousness of this organisation to the extent that can be determined using 'coherence' as a proxy. It also attempts to determine the functioning and performance of the organisation, to the degree to which conventional indicators, made available by management, allow. Any correlations between these are then explored and discussed, in an attempt to elucidate the effect of consciousness on the functioning and performance of the organisation, and demonstrate the role played by consciousness within the organisation. The aim of this study has been to develop a deeper understanding of consciousness and clarify the links between consciousness and organisational functionality, with the ultimate goal of advancing management science and informing management practice, specifically on how we can manage organisations more holistically.

The importance of this study is that it addresses the root causes of our actions. If we can determine what drives our decision making, we can address issues and design frameworks that will lead to us making better decisions. By understanding the role consciousness plays in organisational functionality and performance, we may be able to see greater relevance in basing our decisions on a holistic view of management. We can also determine where to focus our managerial efforts so as to be more effective managers, and develop our companies into more sustainable, healthy organisations, which can make a positive contribution to our society.

This article goes on to review the relevant literature, before briefly describing the methodology used and presenting the results of the study. This is followed by a discussion of the pertinent findings and the implications thereof.

Literature Review

The Quantum Ontology

The investigation into the nature of the universe on the smallest scale of existence began in the early twentieth century with the birth of quantum physics (Darrigol, 2009). Within this field, there has since then, been numerous theories and interpretations of observed phenomena, but most notably, two primary schools of thought began to emerge. These were the "classical world view," and the "Copenhagen interpretation," whose major difference was on the issue of causality and determinism. (Polkinghorne, 1990). The deterministic hidden-variables theory was introduced by Einstein, Podolsky and Rosen in 1935, in an attempt to rationalise their classical understanding of time, space and causality, and reconcile it with the developments offered by quantum mechanics at that time. In 1965, this was largely disproved by the theorem of John Bell (Percival & Garraway, 2007) and subsequent research has continued to advocate a physically non-causal interpretation of quantum mechanics (Plotnitsky, 2010).

The modern interpretation of quantum mechanics thus accepts that there is inherent indeterminism and a lack of causality in a continuous space time background. It also reveals to us the phenomena of entanglement, synchronicity and non-locality (Bub, 2000; Whitaker, 2000), which, along with a-causality, has been shown to be inconsistent with Newtonian physics (Percival & Garraway, 2007). It also introduces us to the universe in terms of wave-particle duality at the subatomic level and describes the collapse of the wave function upon measurement or observation (Home & Bose, 1996). There have been numerous theories postulated to explain and interpret this phenomenon (Bub & Clifton, 1996; Lewis, 2004), most notably the "mass-density link" and the "fuzzy link" theories (Lewis), but the implications towards a non-Newtonian ontology are there, regardless. Ultimately, the implication of these ideas is that we co-create our reality (via our connection with it at a fundamental level) through our subjective experience of it.

A Newtonian ontology assumes that things exist separately from an observer, and always exist as they do when being observed. Their existence is assumed to be separate from observation. Now obviously, no one has ever observed existence separately from himself/herself, yet this ontology seeks to define existence as such, and is thus subject to high levels of doubt – especially when quantum mechanics suggests otherwise. Is it impossible that existence that is not being observed, is different from existence that is being observed? We have long since know that the shapes and colours we see, and sounds we hear, are concepts in our minds built from end organ perceptions caused by waves (Longstaff, 2000). More recently, however, through quantum mechanics, we have discovered that the act of observation also co-creates the form in which things exist (London & Bauer, 1939; Dirac, 1958; Polkinghorne, 1990; Sommer, 2009; Home & Bose, 1996; Bub & Clifton, 1996; Lewis, 2004). A quantum ontology at the very least, emphasizes the central

role played by mind in influencing our subjective experience of existence, and at most, suggests that existence itself is fundamentally a subjective experience. Stenger (1992) opposes the notion that human consciousness influences the state of existence on the grounds that the deterministic hidden-variables theories put forth by Einstein, Podolsky and Rosen in 1935 contradicts the idea, and that the effects produced by observation would be exactly the same if an inanimate measuring device were in-fact the only observer. But given the recent advances in science, the hidden variables theories are widely accepted to be an unsatisfactory explanation and the argument regarding the effects of a non-conscious observer is an unfounded assertion that can never be tested.

Science eventually reaches a point, at the smallest scales of time and space, where it becomes seemingly impossible to observe and experiment. Bogdanoff & Bogdanoff (2001, 2002) have attempted to explore the nature of the universe, through the language of mathematics, beyond the wall of Plank. Their conclusion is that, at this level, a state exists in which time, space, energy and matter come together. It is described as a "…unification between the topological (Euclidean) and the physical (Lorentzian) states of spacetime" (Bogdanoff & Bogdanoff, 2002, p. 90). This is consistent with the unified field theories (Deshpande, Dutta & Keith, 1996; Cleaver, 2005), and suggests that there is a fundamental, common element of the universe, from which all things proceed and diversify into the various dimensions of time and space, which then give rise to progressively greater states of energy and matter. This is consistent with the current prevailing view of reality from the perspective of quantum physics (Lanza, 1992).

Consciousness

So as we look at the universe in greater and greater detail, down to its most fundamental level, we find that its basic constituent is a fabric of interwoven space and time, of which all forms and elements are comprised (Bogdanoff & Bogdanoff, 2001, 2002). The scientific conceptual descriptions of this 'fifth dimension' are consistent with the long held philosophical and spiritual notions of a universal connectedness, from which all things proceed and by which all things are upheld.

This state described by Bogdanoff & Bogdanoff (2001, 2002), essentially describes what is thought by many to constitute a unified field, and it is presumed that it is this unified field which constitutes consciousness in its pure and native form (Hagelin, 1986, Lanza, 1992). This implies that consciousness is an inherent quality of the universe and present in all things, and the brain is but a mechanism that allows us to access this quintessential quality of the universe. It has been argued that this unified field cannot be interpreted as consciousness on the grounds that there is no convincing evidence for mental telepathy, which should be entirely possible if such were the case (Stenger, 1992). But science has, until recently, been unable to explore consciousness from an appropriate ontological perspective, and therefore been unable to develop appropriate tools and metrics. Consequently, numerous accounts of legitimate psychic phenomena may have been

written off as unfounded or unscientific. Even so, within the reputable field of para-psychology, scientific studies showing convincing evidence of legitimate psychic and mind-matter phenomena have been done (Radin, 2009).

There is a growing body of convincing literature, which suggests that consciousness is the basis of existence (Chalmers, 2004, 2009; Hammerhoff, Kaczniak, & Chalmers, 1996, 1998, 1999; Hammerhoff & Penrose, 1996), and so the material universe as we know it, must be only the condition that consciousness has created for itself, or the form into which it has thrown itself. There is a fundamental organising principle which is seen to be prevalent in biological systems (Maturana & Varela, 1984), which influences performance, but is difficult to describe from a Newtonian ontology. If consciousness is primary and present in all levels of the universe, and individual entities and systems are formed as a result of it, it would be plausible that consciousness exerts some influence over these individuals and systems (and their functioning), that may be responsible for the outcomes that are being produced. These conclusions can be seen to be consistent with numerous eastern and western philosophies and ancient spiritual teachings.

Consciousness has been explored extensively through a physical reductionist approach to brain physiology (Baars 1988, 1997, 1998; Beck & Eccles, 1992, Block, 1995, 2005; Churchland, 2008; Dennett 1987, 1991, 1996, 2003; Forti, 2009; Hohwy, 2009; LaBerge, 2006, Stapp, 1993, 1999, 2006, 2007) and the numerous resulting theories have been accordingly opposed, mainly on the grounds that the physical processes of the brain do not provide adequate explanation for the raw, subjective experiences of consciousness (qualia), nor is there an evolutionary necessity for it in terms of providing a survival advantage (Chalmers, 2004, 2009).

Exploring consciousness from a 'first person' perspective leads to the conclusion that it is non-physical and fundamental to the universe (Chalmers 2004, 2009; Hammerhoff, Kaczniak, & Chalmers, 1996, 1998, 1999). Probably the most prominent theory of the place of consciousness in brain physiology has been proposed by Hammerhoff & Penrose (1996), who have suggested an explanation of consciousness which is consistent with the quantum ontology discussed earlier. They propose that the brain works like a quantum computer and the gravitation-induced reduction of quantum states occur in the microtubules within the cytoskeletons of neurons. They have been able to correlate these quantum state reductions with acts of consciousness, and this theory relates to aspects such as entanglement and a unified mind-matter field. It has been criticised on the grounds that the internal environment of the brain may not be conducive to these processes due to high temperatures (Tegmark, 2000). However, studies by Hagan, Hameroff and Tuszynski (2002) have refuted this.

Consciousness, when approached from a quantum ontology, takes on a different meaning, from when it is investigated through physical reductionism. It is seen to be the foundation of existence

and the fundamental substrate of the universe. It is the primary organising principle of the natural world and is inherent in all individuals and biological systems. We see also that individuals can access this through the use of their brain, albeit in a highly sophisticated manner (Penrose & Hammerhoff, 1996). It would then follow that a natural biological system, through its network of interacting agents, may likewise, function subject to this fundamental organising principal, and produce outcomes under its influence. The same could therefore apply to any socio-economic organisation.

Coherence

Because we are unable to conceptualise consciousness from our classical Newtonian ontology, it is not surprising that we are unable to quantify it using any conventional tools, metrics or third person research methodology. This has, however, been attempted in previous research in numerous fields of study including psychology and neuroscience. The significance of such studies have been, accordingly, difficult to interpret, highly critizised and of dubious significance (Harman, 1993). First person research in this area has involved the use of introspection and then the verbal reporting of subjective experience. These techniques have obvious limitations and as a result have not been integrated into contemporary science (Chalmers, 2004).

Coherence refers to the synchronicity between the systems that make up an entity or organisation, and previous studies have shown a correlation between psycho-physiological coherence and wellbeing (Lutz et. al., 2003; Lehrer et. al., 2004). It is a concept that is measurable using empirical methods within a quantum ontology, and on an individual physiological level, has been successfully used as a proxy for consciousness in previous studies (Baets, 2008). Lehrer et al (2003) and Lutz et al (2004) have done studies on meditating Buddhist monks and were able to show that meditation and awareness were correlated with better individual physiological coherence, which was seen to constitute an optimal psycho-physiological state. Positive psychological, cognitive and emotional states have been shown to correlate with numerous objective physiological benefits and reflect efficient physiological states within the human body (Damasio, 2003; Fredrickson, 2001, 2002; Isen, 1999). Such states of consciousness also seem to be related to enhanced faculties of creativity (Isen, 1999) and intuition (Bolte, Goshke & Kuhl, 2003), as well as better overall health and longevity (Blakeslee & Grossarth-Maticek, 1996). This situation is suggestive of the individual's mind and body systems being in a stable, orderly and synchronous state, functioning efficiently and harmoniously, to produce better performance. Conversely, negative emotions have been shown to be related to increased variability and inconsistency in heart rate (McCraty, Atkinson, Tiller, Rein, & Watkins, 1995; Tiller, McCraty, & Atkinson, 2006).

In this way, we observe coherence within the system that constitutes the individual, and we see that this psycho-physiological coherence relates to physiological and cognitive performance. Coherence has likewise been observed in numerous other biological systems (Frohlich, 1981).

These findings are consistent with the concept of a central organising principle and a unified field from which all things emerge. Hagelin (1986) asserts that consciousness is the fundamental organising principle in nature and the subjective experience of the act of consciousness is seen to drive the activities of the systems derived from it, and ultimately influence the functionality and performance of the whole (in this case, the individual). Quantum mechanics and quantum field theory suggests to us that this is both possible and probable, and this explanation is consistent with the psycho-physiological coherence which scientists have been able to observe on the level of the individual.

Sheldrake (1988) also proposes that a primal, universal field exists, which constitutes the self-organising principle of natural elements, individuals, and biological systems at varying levels of complexity, in nature. He goes on to suggest that fields which arise within it, give rise to the formation of matter and the organised development and maintenance of systems. Sheldrake asserts that matter is not primary in the universe, but these energy fields are, and organisation of matter, individuals and biological systems arise from these 'morphogenetic' fields (Sheldrake & Bohm, 1982). The hypothesis also applies to animals' instinctive behaviours and the functioning of colonies of organisms. The morphogenetic field theory offers one of the most convincing explanations of natural biological phenomena, such as the synchronised movement of a school of fish or flock of birds, and the manner in which a colony of ants work together to build structures (Sheldrake, 1988).

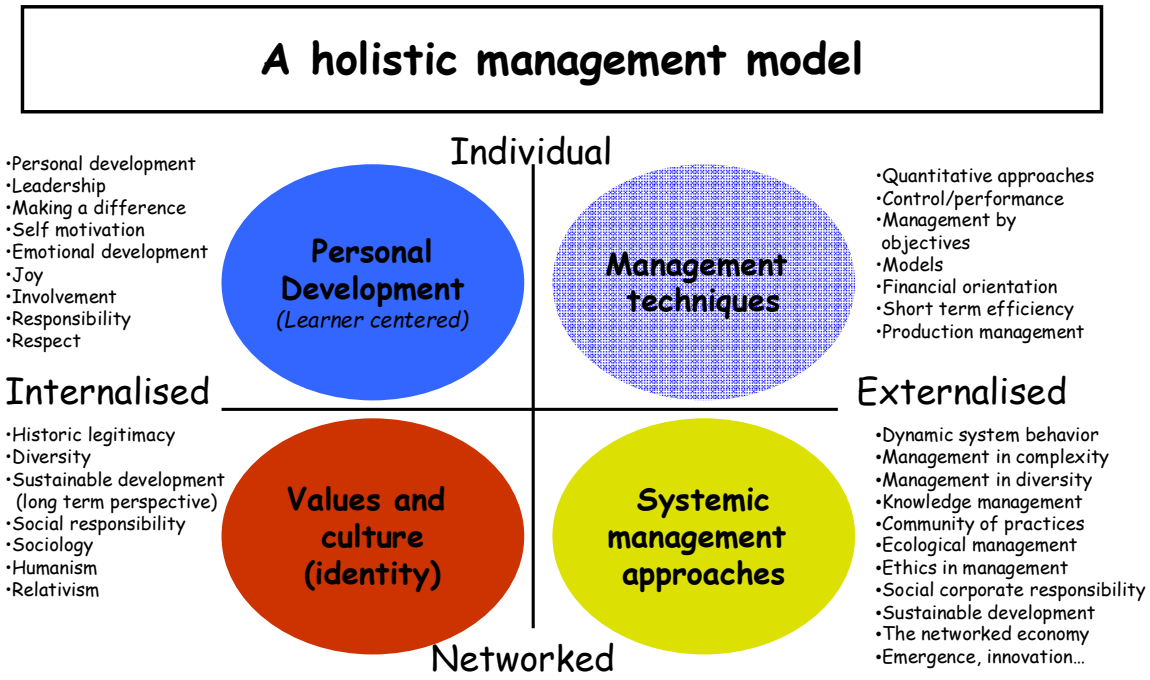
A biological system (such as the human being) comprises numerous interconnected, dynamic, biological agents, systems and processes, and interactions are seen to be on multiple networked levels rather than through hierarchical, cause-effect relationships (Baets, 2008). Since these features are similar to all biological systems, regardless of the scale, it has been suggested that coherence may be applicable in a similar manner to the functioning of human socio-economic organisations (Bischof, 2000; Baets, 2008; Barrios-Choplin, McCraty, Sundram, & Atkinson, 1999). Wilber's (2002) conceptual model of holism in human action describes that there are 4 dimensions to an integrated and holistic view of an organisation, and these may be used to determine the degree of coherence within the organisation.

If the level of coherence can be shown to affect the functionality and performance of an organisation in the same way it does an individual, there are major implications for how we should be managing organisations. If the role of consciousness is primary in the health of organisations, then understanding and influencing consciousness should be the focus of our managerial efforts. In practical terms, this would come through as values based leadership. We might then, begin to change the way in which we understand organisations, manage and grow businesses – for the better. The results of our efforts could be measured and quantified as changes in the overall level of coherence of the organisation, using a tool (discussed further on) designed for that purpose, and we may be able to predict performance based on this.

Conclusion

Consciousness cannot be effectively defined at present, let alone investigated and explored from the perspective of a classical paradigm. Quantum mechanics and quantum field theory constitute the latest scientific thought on the nature of reality and the phenomena of existence. When the subject of consciousness is approached from a quantum ontology, we reach a far more descriptive and meaningful explanation of it, which is consistent with perspectives from within the fields of quantum physics, neuroscience, biology, philosophy and spirituality. In this understanding of consciousness, we may find a better explanation for many observable phenomena, including the functionality, performance and health of socio-economic organisations. We also see that coherence is observable within numerous biological systems and therefore, may also apply to socio-economic organisations, where it may be used as an observable and quantifiable proxy for consciousness.

Methodology



Approach

The research hypothesis is that consciousness drives the health of the organisation, by influencing functionality and performance, and that the level of coherence within an organisation (which we take as a proxy for consciousness) reflects the health of that organisation. A deductive approach and a quantitative research strategy are used to test this hypothesis, and are appropriate

because 'coherence' is observable and measurable using the tool and conceptual framework in question (Baets & Oldenboom, 2009). Wilber's (2000) model of holistic management is consistent with a systemic view of the organisation. It is through this holistic interpretation of an organisation that we can quantify the level of coherence, which we will take as a proxy for consciousness, and then test the hypothesis that this influences organisational functionality and performance, which determines the health of the organisation.

Design

The only suitable instrument that is available to operationalize this conceptual model is a tool that has been developed specifically for this purpose. The Cassandra model (Baets & Oldenboom, 2009) is a questionnaire that involves 68 questions with responses rated on a Likert type scale, that pertain to each of the quadrants of Wilber's (2000) holistic model. It is therefore a holistic tool, which is appropriate to the investigation of the level of coherence within the organisation. It involves a cross-sectional study of an organisation, by surveying employees and analysing the results with the aim of validating the research hypothesis.

Wilber's (2000) model consists of a 2 by 2 matrix with two axes, which constitute 4 quadrants, that represent a systemic view of the organisation (See Appendix A). One axis represents the individual/networked dichotomy and the other represents the internal/external dichotomy. The left hand side of the diagram illustrates the individual (top left quadrant) and collective (bottom left quadrant) dimensions of human interactions within the organisation, which represent individual personal development, and collective values and culture respectively. The top right hand quadrant represents the traditional mechanistic approach to management, with which we are all familiar. The bottom right quadrant represents holistic or systemic management approaches, which constitute the ecology and network in which the organisation operates, and the non-linear, dynamic systems of which it is a part (Baets & Oldenboom, 2009).

Cassandra is based on Wilber's (2000) holistic model, and having been adapted to the managerial context, it serves as a diagnostic for sustainable performance (Baets & Oldenboom, 2009). For the purposes of this research however, it has been used to determine the level of coherence within the organisation, by examining the coherence of the responses elicited. The Cassandra questionnaire comprises multiple items that constitute each quadrant and aims to probe the organisation on the basis of these. The values quadrant is subdivided into a diversity section, in which the questions are based on the work of De Anca & Vazquez (2004) and Kofman (2006), and a complexity section, in which the questions are based on the work of Baets (2006). The personal development quadrant is subdivided into a personal wellbeing section, based on the work of Chopra (1994), and a leadership and teamwork section, based on the work of Nierenberg (1999). Likewise, the mechanistic performance quadrant is based on the work of Stone (2003), which constitutes the financial performance subdivision, and the work of Advanced Practical Thinking Inc. (2001), which constitutes the innovative potential subdivision.

Finally, the systemic performance quadrant is subdivided into a sustainable development and social responsibility section, based on the work of Stacy (2000), and a knowledge and learning subsection, which is based on the work of Baets & van der Linden (2000). The personal version of Cassandra has been construct validated (Pinto Leis & Baets, 2008) and the questions in the personal version are similar to those used in the corporate version. In this study the corporate version of the questionnaire has been used and the questions have been modified to improve the clarity and relevance of the concepts, in this particular context, and be better understood by the sample population. A sample of the questionnaire can be found in Appendix B.

The study was conducted in 2011 at Groote Schuur Hospital in Cape Town, South Africa, and the sample population was the hospital staff, which constitutes its operations. Questionnaires were distributed opportunistically and directed mainly at clinical departments.

Data Analysis

Some basic operational and personnel data, consisting of a few fundamental indicators of operational efficiency and people management have been analysed conventionally and are presented further on. These have then been used to determine correlations with the level of coherence within the organisation. However, in order to investigate the level of coherence and determine any associations with de-coherence within the organisation, the data captured from the sample, using the Cassandra questionnaire, was analysed using artificial neural networking.

Artificial neural networks are computational methodologies that can perform multifactorial analysis and interpretation of data (Dayhoff & DeLeo, 2001). Biological systems and organisations have been compared to neural networks in terms of interconnectedness, information transfer and learning capacity (Maturana & Varella, 1984; Khalfa, 1994; Caverni, Bastien, Mendelsohn, & Tigerghien, 1991; Elrich Tardieu, & Cavazza, 1993). As a methodology, artificial neural networking has been well established, with solid theoretical support and has been conclusively shown to be effective (Dayhoff & DeLeo). Patterns and relationships in data are detected through learning and experience (Agatonovic-Kustrin & Beresford, 2000), in much the same way as in biological systems. This is therefore an appropriate method of data analysis when dealing with socio-economic organisations. In addition, this methodology is well suited to situations where data is indiscreet, highly interconnected and related in a dynamic, non-linear manner, as are the circumstances in this study. Using artificial neural networking, one is capable of visualising coherence in a holistic conceptual model (Baets, 1998). Data captured from the questionnaires, was transferred to an electronic spreadsheet and analysed using this method, in order to develop an understanding of the level of coherence within the organisation.

Results

	Groote Schuur Hospital	Tygerberg Academic Hospital	Likely Industry Average
Beds	920	1320	
Admissions	50805	90747	
Bed Occupancy	89.90%	71.6%	76.7% [1]
Average Length of Stay	5.9 days	6.5 days	7.9 days [2]
Operations	31125	25878	

Table 1. Hospital Operations data, compiled from Groote Schuur Hospital management reports 2010 and Tygerberg Academic Hospital information pamphlet 2010.

1 - In the US, bed occupancy in short term general hospitals was 76.7% in 1974 and has been progressively declining (Chiswick, 1975; Keeler & Yang, 1996)
2 - The estimated average length of stay at a general hospital, based on countrywide, US data (Raffiee & Wendel, 1991)

Operational Efficiency

With regards to both length of stay and bed occupancy levels, Groote Schuur Hospital appears to exhibit greater operational efficiency when compared to industry norms and its closest comparable, Tygerberg Academic Hospital. This trend is strongly confirmed when we consider the number of operations performed at the facilities annually. Groote Schuur Hospital performed 7.1% more operations, despite having 47.5% as many admissions and a bed capacity of 69.7% of that of Tygerberg Academic Hospital (Table 1).

Personnel

While it is difficult to draw conclusions from these facts because of incomplete data and the lack of comparables, it can be noted that the organisation sees significant staff turnover (11.65% appointments and 7.79% terminations in an 11 month period) and incurs significant expense (R60 192 441) through large numbers of staff members (97.93%) going on leave.

The results of the 2010 Staff Satisfaction Survey showed that most of the employees (82%) indicated that they were satisfied to some or the other degree, working at this organisation. All the relevant sections of the survey received responses corresponding to an overall satisfaction rating of over 60%, except the section pertaining to “communication and consultation within the

organisation." The themes of poor communication and feeling under-valued were seen repeatedly in the survey results and were highlighted in other areas of the survey questionnaire.

The results of the 2010 survey showed that while the staff of Groote Schuur Hospital are generally satisfied with working at the organisation, there is a significant proportion who are not. The major issues of dissatisfaction amongst employees appear to be related to poor internal communication and cohesion as well as not being valued as an integral part of the organisation.

Conclusion

The analysis of the data, made available by management, gives some insights into the functionality of the organisation, mainly on the level of performance outcomes. However, such an analysis is incomplete because it fails to consider the organisation holistically. Using the Cassandra tool, the consciousness of the organisation (using the level of coherence as a proxy) is explored, in an attempt to uncover any correlation that might exist between this and the results of the analysis using conventional performance indicators. In so doing, one is able to investigate the research hypothesis stated earlier (that consciousness drives the health of the organisation by influencing its functionality and performance).

(*Continued on Part II*)