APPROACHING CULTURAL DIVERSITY THROUGH THE LENSES OF SYSTEMS THINKING AND COMPLEXITY THEORY

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ABSTRACT

Interest in systems thinking and complexity theory has continued to grow during recent decades. This paper offers an outline and assessment of the contribution of systems thinking and complexity theory to understanding the management of cultural diversity in the context of today's global business environment. While culture has become a topic of growing interest and significance in an era of globalization, it is argued here that the central concept is largely misunderstood. Discourse on culture in both academic and business communities suffers from the resulting confusion while the potentials inherent in cultural diversity remain largely untapped. The research reported herein presents a holistic and transdisciplinary perspective to understanding the impact and management of cultural diversity in global business encounters. The conceptual work behind the paper aims to link the concepts of culture, systems thinking and complexity theory. Given the holistic, flux-like and complex nature of the concept of culture, it seems apparent that any meaningful study of culture will require multiple approaches to recognizing its multiple characteristics. It seems clear that systems thinking and complexity theory help us see and appreciate the multi-faceted nature of culture.

Keywords: Culture, diversity, appreciation, complexity theory, systems thinking

INTRODUCTION

The concept of culture has gained much interest during recent decades. This can partly be traced back to the unprecedented growth in the amount of international trade and exchange since the end of World War II. Earlier periods in human history witnessed internationalization, but never with as rapid a development as during the 20th century. Today, the lives of people in all corners of the world are influenced by a global business environment.

This era of globalization has created many opportunities for companies as they work to respond for a need to incorporate international expansion. But these opportunities have not come without problems. Attracted to the perception of accessible markets and facilitated by widely available communication technologies, companies sought to gain the benefits offered in building and maintaining a worldwide presence. This took place during a very brief time frame. In the background of this optimism there is a growing concern that the change has taken place so rapidly that companies were not able to change their structures or mindsets to "truly" appreciate what it means to be global. Many firms simply

transported their home-based values and processes to other locations in an effort to internationalize. The change was primarily one way. Now there is growing evidence that companies were not effectively transformed into global organizations and that they are in many respects unable to manage their global operations. There is strong evidence that they have been unable to understand the values, perspectives and mindsets of their "foreign" counterparts and as such have failed to effectively operate across borders. The evidence for this is seen in the growing costs of international operations. International sales and operations are widely accepted in each country to be more cumbersome and "inefficient" than those of domestic ones. Even where sales have flourished, the reality beneath the surface reveals that there have been significant misunderstandings on the inter-organizational and interpersonal level. Inter-cultural encounters provide an additional level of challenge to the already difficult area of interpersonal communication. Cultural differences show up in styles of negotiation, communication, expectations, structure and communication. Cross border difficulties can be seen throughout inter-organizational events and encounters, including alliances, joint ventures, mergers and acquisitions, where the numbers point to a dismal success rate of 50%. Further, global organizations find difficulty in managing global, diverse teams. It is clear that the potentials inherent in weaving together diverse values, outlooks and workforces remain largely untapped.

The scientific community has been addressing aspects of this problem, although to date their efforts have largely been indirect. As with other areas, science offers important knowledge on the workings of culture. Looking at the proliferation of research on the topic of culture in both social and management sciences, one could be mistakenly led to the conclusion that the topic has been well studied and understood. A closer look contradicts such thoughts.

There is a large gap and little interdisciplinary work between social and management scientists on the broad subject of culture. Social scientists have tried to provide for an understanding of the underlying theories of culture, while management scientists seem to rush for applying simplifications of these in managerial settings. Each group has its own audiences yet a useful overview of culture is lacking in research to date. This becomes a serious problem for researchers and for non-scientists working in the area. Social scientists have a longer tradition in the study of culture than do scientists in the younger field of management research; yet even social sciences have problems with their methods, theories, and findings. Forming and framing a more interdisciplinarity approach is critical. As it has helped with other fragmented subject areas, a systems perspective could help in the understanding of culture.

The prevailing worldview in developed Western societies is mechanistic. This viewpoint sees the universe and its parts as a clockworks. In this setting, a prerequisite to examination is to seek the exactness of scientific knowledge by analyzing the unfolding parts and therein the truths of the universe. In addition, those issues that seem to lie beyond the grasp of objective scientific quest are presumed to be unworthy of serious scientific consideration. To date culture appears to squarely fall into the non-objective category. It is seen as "of too subjective a nature to warrant the effort of study". Further, the science of culture does not result in clear causal connections between "parts of culture". Yet, given the rising societal and business importance of culture, even the skeptics have been forced to accept its existence over the past decades. Research into culture has flourished even though it has continued to carry the baggage of reductionistism. Many approaches to researching culture have tried to objectify culture, thereby bypassing its intrinsically subjective nature. To deepen this weakness these researchers have tended to focus on a single aspect of culture, e.g. communication, while ignoring the greater system of which culture is a part.

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The roots of modern science lie mainly in Western philosophy and the search for rationalism that characterized the 17th century. This prevailing Newtonian view regards science as providing objective, rational results with universal validity. This view is shared in some of the human sciences and most of management sciences. This is exemplified in the work of management scientists, where management fads developed in the United States are transferred with no discrimination to other parts of the world, e.g. Hong Kong or Kenya. Cross-cultural management handbooks recount local practices as deviations from the "norm" of "universal management behavior". No wonder that Western managers with a Western worldview, education and management handbook are taken by surprise in their first negotiations with their Chinese counterparts. This situation is our current reality and just now offers little promise to truly address and understand the complex and multicultural nature of today's global working environment.

Finally, the concept of culture itself can be seen as revealing contradictions. Each stream of cultural research reserves the right to define it in its own terms to meet its own needs. Therefore we find sociologists, anthropologists, social or cross-cultural psychologists adhering each to their definitions, and then see management scientists even further afield distinguishing between concepts of organizational culture, national culture, team culture and so on. Books on culture, depending on the theoretical affiliation of the author, might just as well treat the kinship patterns in Western Samoa, differences between negotiation styles of the French and the Namibians, or the symbolism in corporate culture. This seems not to offer a very sound basis for transdisciplinary discussion about culture, or to the building of common definitions.

An example of the failures of the reductionist perspective to the study of culture can be found in research on acquisitions. As with most management literature, research on acquisitions and their integration has focused on "culture-in-general" approaches. Such approaches do not specify the applicability of the results in case of cultural diversity, but assume universal validity of findings across cultural settings. Some research has looked specifically at culture and acquisitions. However, it has not only failed to establish a culture – performance link but has also failed to provide an overview of the challenges and management of cultural diversity throughout the acquisition process. As a result, an understanding of how culture impacts acquisitions is lacking.

The purpose behind this paper is to confront this situation and seek a solution to understanding and appreciating the concept of culture. The contents begin with a description of culture in a way that allows appreciation of its nature and of the challenge facing any one who researches it. The second stage of the paper addresses the role of a historical overview of the development of human thinking. This enables us to see how the currently prevailing Western view of science can only accept a fraction of the history embedded in the complexity and diversity of cultures. Systems thinking and complexity theory will be used to revise that history. Finally, systems thinking and complexity theory will be jointly presented and criticized prior to applying them to the study of culture.

WHAT IS CULTURE?

Globalization occurs via international exchange and is essentially based on intercultural encounters. Globalization can thus be defined as the result of encounters of people with different cultural backgrounds. Culture represents a worldview, a means of communication and behavior shared by the members of that culture. Working across cultures implies an ability to bridge different worldviews.

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This means that a person becomes able to shift his/her viewpoint so as to appreciate and perhaps even understand the other's viewpoint. Failure in this is underlined as frustration and misunderstanding and often results in trying to blame the other for not being understandable, without even realizing that nothing of what happened was really wrong. Each simply saw and approached the problem differently. This is the gist of culture. In the current situation, most of what we call cultural difficulties stem from an inability of people to shift their mindsets. Instead, they rely on pessimism, and complain about the other's behavior. The recent upsurge in literature, training programs and readings on the subject of cross-cultural management is perhaps more a mirror of the frustration level than the search for improvement. The ability of general management theories and practices to provide the right framework for managing across cultures needs to be questioned. People first need exposure to other cultures and understanding of what cultural difference means in order to improve their cross-cultural skills. Most of the training programs mentioned above do not help in these needs.

The difficulty with culture is that while it obviously exists, it in fact also does not exist. We talk about it, we name something as "culture", but we cannot point to what it actually is. This difficulty can be traced to the fact that cultures are made up of people's feelings and beliefs, and as such are part of the greatest mysteries of life. If it is difficult for anyone to try to understand anyone else, and perhaps even to understand him or herself, the mixture of many people living together in what we call social systems presents even more challenging questions. Given that culture is formed by and of people, it is a highly subjective phenomenon. The prevailing Newtonian paradigm in science, with the search for ultimate causality, shuns all forms of subjectivity associated with issues like culture.

Any group of people who spend a considerable amount of time together end up forming social habits and societal ways of behaving that shape their culture. Depending on the nature of the group, its members, and the environment in which they act, their culture will develop in certain ways. For example, the weather component can help explain why people born and raised in warmer environments tend to be more relaxed and merrier than those born and raised in colder environments. Research has shown that values, norms and assumptions about life underlie each culture, and that these are co-determined by environmental conditions. These, in turn, go on to affect the behavioral and communication patterns shared by the members of that culture in a given environment. Looking at societies and their cultures, we find that each group has organized its society according to certain different patterns that show up as differences in kinship, hierarchy, decision-making, religion, power and politics, law, economic systems and social structure. For example, tribal people form matrimonial societies, as compared with the prevailing pattern of patrimonial lineage found in most non-tribal parts of the world.

Culture also represents change. Few if any of the cultures found on earth today existed at the outset of human socialization. Thus, at any moment in the history of mankind we are likely to find different cultures inhabiting the earth. At any moment in time, each of these cultures continues its development and evolution. Interestingly, the concept of nations only came into being in the 19th century through a wave of romantic and nationalistic thinking in Europe, and e.g. Italy and Germany came to be formed as early nation states. New forms of culture continue to emerge. Different industries in industrial society exhibited different industrial cultures, whilst sharing similar attributes within the group. Likewise, organizations exhibit a corporate culture. Today's world represents great cultural diversity, perhaps greater than at any preceding time.

A HISTORICAL PERSPECTIVE OF WORLDVIEWS

The Eternal Question and Worldview Diversity

Despite societal and technological development throughout history, it can be argued that modern man is as lost as was his predecessor in the Stone Age. This is especially so with regard to the anxiety-arousing metaphysical question "Why am I living? What is the reason for my existence?" Religions, philosophies and approaches to science have all proposed solutions to this problem. Each sets out to explain the reason for the existence of mankind, although each does so in its own particular way.

Early religions provided the foundation for tribal peoples' views of the world, e.g. linking bad weather with bad omens and claiming that rituals (e.g. dancing) could help calm the gods of nature. All religions seem to exhibit some form of reliance on a god(s), whose fury should not be roused lest man should wish to live in harmony. We may look at religions found in African tribes or in the American-Indians as examples of this. Today's scientific community would call the early tribal beliefs "highly subjective" by nature, and lacking in "objective realism". Anthropologists explained that each society develops structures to support its worldview. Thus in tribal societies, religion is intertwined within the societal structure, forming an integral part of everyday life. Interestingly though, despite the seemingly disparate modes of believing and living found in early tribal societies, each human society consists of similar basic building blocks such as hierarchy, societal structures, importance of kinship, etc. The forms that these basic building blocks take vary in each tribal society, yet they are always present. They also resemble the structures found in modern societies.

As humankind developed, its societies moved from tribal societies to village-based, then city-like societies, and finally humans emerged and organized themselves around 19th century nation states. This evolution was partially associated with the propagation of a religion with greater geographical outreach as well as societal structures more prone to expanded settlement settings. As such tribal religions were replaced by expanded religious systems such as Christianity in its many forms, along with the macro religions of Islam, Buddhism and Hinduism. Differing worldviews are found in each religion, with the Western and Middle-Eastern countries taken a more monotheist stance while Asian religions take a more philosophical search that raises questions of human harmony and unity with the world.

Early Systems Thinkers In The West And In The East

Western philosophy originated in Greece with the early individual thinkers asking themselves and their society difficult questions on life, ethics, morality and humankind. We discover here the emergence of patterns of thinking with no linkage to a religious belief system. Instead, these patterns of thinking were based on an actor's capability for reasoning. Philosophy thus emerged as a search for metaphysical questions and answers arising from an objective perspective. Despite the fact that most of Greek philosophy is today remembered only as a foundation for rational thinking, elements of systems thinking were present in the philosophers' perspectives and work.

At the same time, the Chinese, living largely autonomously in their kingdoms, related to the sayings of Confucius and LaoZi, the two great Chinese thinkers having respectively inspired Confucianism and Taoism. Both provide the building blocks of Chinese culture. They are regarded more as philosophies than as religions. They provide food for thought and inspire appropriate behavior patterns. Whilst order and discipline can be regarded the realm of Confucianism, unity and harmony with the surrounding

nature define Taoism. The Eastern worldview was close to systems thinking. They thought it natural to regard matters in a holistic perspective, embedded in their environment with which they should seek harmony. Interestingly, both the Chinese and the Europeans lived happily without knowledge of one another's existence. They provide two examples of human societies with differing belief systems and well-functioning societal structures functioning at the same moment in time.

Toward A Westernized Worldview

The development of Western philosophy laid the ground for modern scientific progress from the 17th century onward. This development can be traced back to its Greek origins. The origins of Western philosophy provide a cue to understanding the rationality of Western thought, as well as its concern for the game of "zero or one", meaning that there is no in-between. This is important to note. It remains as a prevailing assumption behind Western thinking today. We rarely see it let alone question it, but to understand the strengths and also limits of our thinking, we need to go back to our basic assumptions and understand how they guide our thought patterns.

The curiosities and developments of the Greek philosophers came to be buried in a subsequent millennium under the Roman Empire and under the propagation of the Christian religion, which intended to establish a uniform belief system throughout the Empire. These twin forces unified Europe for the first time, developing both communication and societal infrastructures to manage so large an Empire. The oldest European roads, bridges and aqueducts date from the Roman period. The "Western world" was born via the Roman Europe and the Christian religion, with the ghost of Greek philosophy providing its founding stones. As the Roman Empire started to loose ground, Europe had already plunged into the Middle Ages, where little development took place and the worldview was a prevalently religious one.

At the end of the Middle Ages, while Europe was living under the auspices of the Christian religion, innovations in several fields began to abound. They were characterized by a critical attitude toward written knowledge, which at the time was mainly of a religious nature. We can take the example of the well-read Erasmus. It came to be thought that development of thinking was being hindered by the dogma of religion, which could be replaced by a rational-minded man. The Greek philosophers' writings were rediscovered and their underlying philosophy was remade as an objective help to understanding the world. Given the thirst for a rational understanding of the world and the subsequent rational inspiration prevailing at the time, the Greek philosophers came to be re-read with an emphasis only on their rational side. The more systemic side of their writings was widely neglected. Similar thinking patterns invaded the realm of natural sciences where the most famous scientific discovery was that of Galileo Galilei (1564-1642), who observed the falling of an apple from a tower, and explained it by the gravitational force of the Earth. Modern scientific thinking and method was thus born, and according to it man should ask nature specific questions via use of experimental method:

"Philosophy is written in the big book, the universe. But one cannot understand the book unless one first learns the language and the signs in which it is written. It is written in the language of mathematics, and the signs in which it is written are: triangles, circles and …; without knowledge of these, a person cannot understand anything about the universe; without knowledge of these, one wanders lost, as in a dark maze." (Galileo Galilei, 1623)

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The shift was becoming obvious: science was to provide the new worldview, replacing the Christian one. Science was to become "a new religion." Man wanted to look for truth and certainty using rational thinking and via a more objective, more scientific-based method. This thinking came to be concretized in the later Enlightenment period in the phrase *"I think, therefore I am."*

The purely rational viewpoint provided by Newton's dynamics was welcomed as a foundation of physics and sciences. Newton studied solids with regular motion and claimed that once the initial positions and velocities of a system were known, all its future and past positions and velocities could be determined. Any small change or perturbation was likened to a small error, without great significance. Examples that did not fit into his model were assumed to be "rare exceptions to the rule". The new, scientific, worldview was based on ideas from Newton's dynamics. It relied on linearity, determinism, time-reversibility and the connection between cause and consequence. It was assumed that parts of a system could be studied separately so the objects of study could be further reduced in to parts. These assumptions for analysis came to be the basis on which subsequent scientific development took place. During the 19th and 20th centuries the same presumptions found their way into the development of most of the human and management sciences. Both relied on the Newtonian paradigm in order to gain respect as sciences given that they were using the proper scientific method. In the case of management sciences, the work of FW Taylor sought to show the scientific nature of management through the use of an objective paradigm, or at least from the same direction as the models used in the natural sciences. This grew into wide spread application as the prevailing scientific paradigm in management, and reached out to impact both the preferred philosophy of science, and the choice of method.

Science became the new truth, the new philosophy, the new religion, the word by which all would swear and expect to reach truth. The word of a scientific researcher came to be taken as a fact by society at large. Scientists came to be seen as representing knowledge and truth. What was forgotten over time was that this new truth system, named science, also had a history and assumptions. One day, these assumptions would be under scrutiny. This was helped with the introduction of new scientific notions such as systems, chaos and complexity.

Western thinking has influenced all areas of human life since the days of the Greeks. It has influenced the development of scientific thought, including the scientific revolution and the philosophy of science. Science itself has become embedded in Western thinking as a means of reaching truth. We also see how our management philosophies and practices are influenced by the same pattern of thought. This is what current management thinkers mean when they talk about the prevailing Newtonian and later Taylorian paradigms in management thinking. We realize that there is a prevailing mental model in the world that influences all fields of human experience.

Can The Western Worldview Hold? Two Dilemmas

Two dilemmas arise from the historical overview of the development of human thought as presented before. The dilemmas stem from a currently prevailing paradigm that relies on the notion of European science as developed in the 17th century, and which has been successfully adopted in most Western countries, and gradually in other parts of the world.

Complexity is an ever-present component in human lives, as manifested by the still unsolved metaphysical question as well as the growing interconnections in societal life, especially since the 18th

century. Moreover, aspects of systems thinking have been present throughout human history, as seen in the writings of Eastern and Greek philosophers. When thinking about the notions of systems and complexity, we do not have to be limited to thinking that they are "new concepts". They are not. A historical perspective on the development of Western science since the 17th century brings us to the conclusion that both systems thinking and complexity are concepts with a rich historical background.

Diversity of cultures is another ever-present feature of human development. From early times to the present day, a number of cultures have inhabited this world. Some have died off, some still exist but might be changing, while others are emerging. As cultures change and adapt to new situations, the main constant seems to be the presence of cultural diversity itself. Today, management scientists talk about diversity, as it has become an imperative in people management in a global setting. The major concern has become how to manage a diverse workforce? Globalization has brought the potentials and challenges of diversity to the attention of many. For the first time in human history people from across the world meet and work with each other and face the challenges of being effective in a setting with a high degree of informational complexity and contextual uncertainty. We are in a world embracing diversity in complex settings while our thinking pattern remains fixed in a "mono-cultural" view based on traditional boundaries and rational thinking. This is the reality with which today's businesses have to deal with. This is the background for understanding why our established paradigms might require additional flavor if not total revolution in order for humankind to thrive under the current conditions. It seems that the problem is not in the novelty of diversity, but rather in the methods being used to understand and respond to diversity. Cultural diversity, as approached by Western science and especially its reductionistic branch, suffers from over simplification and discipline-specific views that are considered universal.

SYSTEMS THINKING AND COMPLEXITY THEORY

Systems thinking and complexity theory offer important visions for scientific discovery. They share a similar history and common concepts. The aim herein is to cover parts of this and yet arrive at some general principles where both systems thinking and complexity theory can be used to improve the understanding of cultural diversity.

Systems thinking and complexity theory share common roots. Aspects of both are found in early writings of Eastern and Western philosophers. Only at the end of the 19th century and the beginning of 20th century did they receive greater attention. Both approaches offered a scientific worldview that stood in contrast to the prevailing Newtonian paradigm. Both questioned the assumptions of Newton that are based on linearity, determinism and the connectedness between cause and consequences. Both found Newtonian visions to be too simplistic and reductionistic to solve or even conceptualize contemporary problems.

Systems thinking has evolved in response to a concern in natural sciences, including physics and especially biology, that the Newtonian scientific paradigm did not provide sufficient means for understanding living phenomena. Problems in living systems tended to be holistic, and not open to previous reductionistic ways. The early Greek dream of finding the ultimate parts, e.g. cells or atoms, of living reality and matter were difficult to overcome. Systems that would combine into greater systems and not be reduced into parts gradually became an idea that emerged in the natural sciences and then leaked from natural sciences into other applications. This approach gained large currency in

facing the problems of the Second World War. It has since gradually emerged in social sciences as well.

The key perspective of systems thinking is how best to view a system as a whole that is interacting with its environment, and consists of a set of complex, interrelated parts and subsystems. Coupled to this is the need to avoid seeing a system as an additive relationship, where the whole is greater than the sum of its parts, but as a whole where the parts are richly connected. Systems research has needed to be interdisciplinarity in order to gain this perspective.

An early finding in complexity theory was made by Poincaré at the end of the 19th century. He showed that systems comprising of three or more interrelated astronomical bodies did not behave according to the Newtonian assumption. He pointed out that even minor changes in initial conditions would result in widely differing trajectories. This finding became known as "dynamical instability" or "sensitivity to initial conditions", or later as simply "chaos". These thoughts were rediscovered during the late 1960s. Those studying chaotic behavior in systems looked into many fields of science, including biology, meteorology and physics. These newer developments of complexity theories made use of systems theories as well as theories of chaos, catastrophe and complex adaptive systems. Complex adaptive systems, which is popular today, focuses on the complex interactions of a number of interrelated agents, where interactions at a lower level form the emergent result at a higher level. Interrelated agents, self-organization, evolution toward the edge of chaos and constant evolution are further characteristics of complex adaptive systems. The key difference, as compared with the perspective in traditional scientific literature, is an assumption that complex systems cannot be controlled but on occasion can be managed as they evolve toward the edge of chaos where they naturally emerge and self-organize into other states. Using this approach to chaotic systems, it has been seen that such systems can exhibit surprisingly structured behavior under conditions where they are closest to chaos. In this way chaotic systems have been distinguished from random behavior. They also stand in stark contrast with the Western thinking pattern where man believes he can control the environment and his destiny using rational means. Today it is easier to acknowledge that contrary to what was believed under the Newtonian paradigm, most systems behave in a non-linear way and should not be reduced to study within the setting of "ideal conditions".

Complexity theory states that all systems consisting of more than two parts exhibit surprising, non-linear behavior, and can evolve into strange structures at the edge of chaos. Key to complexity theory is a dependence of a system on its initial conditions. As such, even a minor change in the initial conditions of a system will result in great varieties in system behavior. Complex systems can exhibit multilevel, feedback-seeking behavior. The essential feature of complex systems is that they cannot be controlled in the Newtonian sense, and should be seen as naturally self-organizing into structured behavior at the edge of chaos.

What is the commonality between systems thinking and complexity theory? First, they both seek to see a whole system, and to see it within its environment. Holism and expansionism are thus two strong commonalities. Second, they both view the system as a set of interrelated parts, where the whole exhibits behavior not explainable by the behavior of the parts. Third, they view systems as multi-level structures that can exhibit feedback-seeking behavior. From this basis the two perspectives each move into many varied directions of development. While systems thinking keeps its focus on systems, and looks for the elementary constituents throughout science, it also looks for ways to synthesize them. Complexity theory invests more energy in studying the context of its subjects, as well as events that

seem to govern change. Each works towards scientific discoveries that are wide ranging. Reviews of their discoveries provide fruitful doorways for scientists from other disciplines to rethink work in their own fields. When we give any reference to complex systems herein it will be to those exhibiting systemic and complex behavior.

There is hope and deception within concepts of systems thinking and complexity. It has long been easy for scientists to find rays of hope in these concepts yet successful applications of either are difficult to find. There is considerable lack of conceptual clarity regarding their definitions relative to the sciences studying them. For example, looking at literature on complexity and chaos, it is striking to note how many readings cultivate erroneous and complicated definitions and then give unhelpful applications of these notions. Reading through some of the articles, it would seem that complexity equals self-organization, emergence, and simple patterns, while it also has a link to fractals and complex adaptive systems. Any overview of these concepts remains vague to the professional and lay reader. What is most striking to note is how little in-depth knowledge on complexity theory individual authors hold. Perhaps this is understandable, given the substantial amount of scientific literature available today, yet it makes scientific advances difficult.

The trouble is that concepts such as chaos and complexity seem appealing and apt to provide a home for all the non-answerable problems in management that give an appearance of being chaotic. Further, writers on chaos and complexity seem to accept them as providing a means to explain how current society is in a state of "revolution" and "firms at the edge of chaos". Such writers use chaos theory to suggest that firms should continuously strive for being at the edge of chaos, whilst avoiding structure. Reading such thoughts, one wonders: how does one reach a state of continuous chaos? Have we lost our human need for stability? What does it mean for firms to try to stay at the edge of chaos at a time when they have significant trouble in coping with a changing environment? Judging from high rates of burnout of firms and employees alike, it seems likely that living in a state of continuous chaos is expensive. Perhaps we should avoid using chaos as an idealistic trap that is worth aiming for.

A possible reason for the confusion about complexity in organizations arises from the concepts of complexity and chaos themselves. The way in which they are used helps suggest that complex situations are intrinsically chaotic. Thus, when using complexity theory, management scientists tend to seek out the most complex situations; those at the edge of chaos, which are thought to be highly appropriate for applying complexity theory. Stacey (1996) argued that physical and human systems are complex adaptive systems by their nature. Thus, thinking of human systems, we can follow the path from neurons in the brain, to an individual's behavior, to a group's behavior, to a firm's behavior, to a society, and to the ecosystem at large. Following Stacey, we don't need to "seek" behavior at the edge of chaos. This is because our environments and human systems are very chaotic by nature and typically exhibit the behavior of chaotic systems. Stacey's logic provides a powerful and inclusive view of complexity theory. Instead of viewing it as the theory "for some complex systems at the edge of chaos" we could instead accept it as a description of our world. This may provide a way to answer the existential questions posed by all men. Compared to the Newtonian scientific paradigm, it has two major advantages.

First, it corresponds with the intuitive appeal that people have of the world. In everyday lives, people view the world as "difficult to grasp", "unpredictable", and understand that as compared with simple systems, e.g. a table, complex systems cannot be decomposed into parts and recomposed again, e.g. a living human. Still, people seem to believe in some sort of fate, or pattern in the world, e.g. good times follow bad times, each person takes his/her own path in life. Also, certain behaviors or attitudes seem

to portray universality of mankind, e.g. the feeling of love, hate, friendship, and anger. This is in contrast with the Newtonian paradigm that views people and organizations as machines. No wonder, then, that today people seem alienated from science and see it as the world of reductionist people studying problems with limited focus.

Second, it correlates well with the Asian philosophies and tribal religions emphasizing wholeness and unity with nature. The Newtonian paradigm stands in stark contrast to these. It would seem that complexity theory has considerable potential to surpass Newtonian theory as a prevailing scientific paradigm. What makes this difficult, though, is its very label as "complexity theory". If we accept that all living organisms are complex by nature, and complexity is the norm rather than the exception in nature, then another name could be more helpful. Using the term "complexity theory" makes an explicit assumption of complexity, and thus steers people into thinking that its applications must exhibit complex nature, and in the process of doing so, they forget that most living systems do so by nature. Thus one need not seek for the "conditions at the edge of chaos, where complex systems reveal their true nature", but just look around oneself and try to understand the world where we are. Complexity and chaos can address issues of daily challenges.

From this perspective, complexity theory becomes a paradigm that can accept the inherent nature of living systems. It poses again the existential question of humankind, but instead of reducing it to simple terms, as Newtonian thinking does, or of transferring the attention to some religious aspect, as religions do, it boldly asserts what we already know by intuition. The world, its people and societies are unpredictable, complex systems. Complexity theory provides a scientific grounding for these thoughts. It helps us find appropriate methods for the study of complex systems. By doing so, it unites science and everyday life, it brings together East and West, traditional and modern societies through a worldview that they all embrace and accept.

CULTURE AND DIVERSITY AS COMPLEX SYSTEMS

In this subchapter, we examine how culture and diversity can be linked to complex systems. We begin by examining what systems thinking and complexity theory can bring to problems in management thinking. We then will proceed to study culture as a complex system.

The prevailing Newtonian paradigm used in organizations views people as rational actors who work in organizations that can be controlled for the best purpose. Tasks are supposedly enumerated and can be distinguished as separate from one another. All irrationality in behavior and unpredictability in strategy are regarded as somewhat irrelevant by management scientists as they seek linear truths about the organizations that they study. This stands in stark contrast to the experience of managers and staff in organizations, who all stand behind the unpredictable and chaos-like nature of organizations where holistic thinking is needed in order to act successfully. In this light, systems thinking and complexity theory could open a window for seeing the real challenges of management instead of reducing these to chapters in a management textbook that retain a theoretical character yet shun implementation-related issues. Systems thinking and complexity theory could provide a means for searching management solutions that resonate with reality.

In Stacey's terms, this would mean accepting both formal and informal organizations as being of importance to a firm. It would mean accepting both covert and overt behavior in groups, and accepting

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conscious and unconscious minds of an individual employee. In this light, science can draw a parallel to other fields such as practitioner psychology or intuition. As an example of the previous, a Finnish psychotherapist Tommy Hellstén (2000) argued that people can only become brave if they dare to take a step forward in the most difficult of all conditions. In such situations, he claims, the real nature of mankind is revealed as supernatural forces support him. Being brave is accepting one's inner weakness and moving on toward the unknown. Other literatures would call this the creative process, wherein a person tunes in to listen to one's inner voice and acts accordingly. People in creative jobs, such as artists or musicians, are said to have this talent. Creativity is working at the edge of chaos, yet producing the most beautiful results. Here we can draw a simplistic parallel with child education and development. Children's upbringing can result in a child's being a perfect citizen, adapting to the existing overt structures, whilst avoiding one's inner voice. Likewise, some children will grow up with a better ability to listen to one's intuition. According to the logic sought herein, the child with the greater intuitive capability would be able to more fully interact with his environment, grasp underlying meanings, and move forward. One can claim that societies require independent thinkers for their development. As an example, most philosophers have caused havoc in their times with their though-provoking ideas, being independent thinkers instead of rational actors. Some of them produced a revolution with their ideas. It would thus seem that the natural flow of events in individual lives, firm's lives and societal development, follows the laws of complexity theory.

It could also mean accepting that organizations consist of a complex set of actors that interact with each other and their environments. All too often, in an effort to simplify, the contextual factors both within and beyond the firm are neglected, and the organization is seen as consisting in rational robots operating in laboratory-like conditions in a stable setting.

In this light, we begin to find connections with culture. Our paper began by voicing the concern that the true nature of culture was left unnoticed by research lacking interdisciplinarity and taking a simplistic and reductionistic view to the study of culture. We saw how difficult and abstract the concept culture is to grasp. The historical background that supports the prevailing Newtonian paradigm also reveals how the concepts of systems, complexity and diversity have a long tradition in the history of human thought.

Culture can be regarded as a system, even a complex system. It is comprised of more than two actors that are interrelated and interacting together. Together they form a culture, whereas if kept separate they would only be personalities. Culture is a chief characteristic of a human system. Therefore more light and understanding of its operations is imperative.

Given that each culture evolves differently depending on the nature of its members and its environment, culture seems to adhere to the key condition of any complex system: sensitivity to initial conditions. Depending on the initial conditions in which the culture is developed, it will grow into a different type of culture.

Despite the overwhelming diversity of cultures, all of them seem to portray some common elements. A culture is based on values and assumptions that are displayed in the communication and behavior patterns of its members. Research has shown that cultures differ along certain shared dimensions. For example, all cultures use the concepts of hierarchy and power structures, although they may apply them in different ways. Also, all cultures organize their societies into structures. Further, culture influences the societal and religious belief systems that its members embrace. These aspects of culture seem to

liken culture to systemic thinking in that such aspects are more aligned with the relations than the "parts" of culture. As with complexity theory, cultures converge toward unknown structures. These are imagined as fractals in complexity theory.

Cultures are formed of different subcultures. Starting with a global culture, we find regional and national cultures. National cultures exhibit local migrant cultures, tribal cultures, city cultures, area cultures etc. Further, within nations we will find industry cultures and corporate cultures. Within corporations we will find unit cultures and team cultures. Taking another way, for any one person in his/her life, s/he will be confronted with an educational culture, a social culture, and depending on the social background of the parents, a hobby culture (e.g. embracing the values of playing tennis). In addition s/he will come to adapt to a university cultures, a friend culture, and many others. These subcultures are rarely discussed in the literature. Even where they arise, their links to other cultures seem difficult to prove. For example, in his famous and comprehensive pyramid of cultures, Hofstede (1980) refers to the pyramid of human mental programming as consisting of personality, culture and human nature. Culture is here taken to represent national culture. Where are the other cultures? Systems and complexity thinking seem to provide a fresh avenue to explain and understand the existence of a multitude of cultures as part of natural complexity and the system of society and culture.

Cultures are dynamic, not static. They change over time from within and without depending on the conditions to which they are subjected. Cultures represented today are not the same as they were 50 or 1500 years ago, or will be in 10 years! This character of culture is rarely mentioned in literature on culture. Culture is normally taken as a given, as a "set of behaviors." This view deprives us of the multi-faceted nature of culture. Yet being multi-faceted is just how culture manages to adapt to environmental conditions like a chameleon. Adopting a systemic view of culture enables us to see, appreciate and study the more dynamic aspects of culture.

Systems thinking and complexity theory open the window to viewing both formal and informal, objective and subjective aspects of the organization. Shunning the soft side is a key inhibitor to understanding culture. As long as all soft aspects of the firm are avoided "until their significance can be stated in financial figures," it appears that they will not receive the attention they deserve. Their current absence from the interest of managers could be calculated through the rising costs of burnouts to the organization. Holistic management regards the firm as a whole, comprising of its employees and their concerns, the firm's environment and the firm's interests. In such a setting, cross-cultural management and appreciation of individual diversity become of interest. The firm notices how challenging cross-cultural settings can be especially for the uninitiated staff.

Finally, let us have a look at cultural diversity on the individual level. Given the complexity of the current global context, where people from across the world can interact, systems thinking and complexity theory can provide viable solutions to approaching diversity and tapping the opportunities that it provides. Diversity resides in people. It is people who are different. Diversity can refer to cultural, but also social, personal or genetic diversity. The concept of diversity thus expands beyond that of culture at the individual level. In the light of systems thinking and complexity theory, diversity is a natural state of the firm and also a means of competitive advantage. Instead of the traditional focus on tangible aspects of competitive advantage, both theories argue for giving significance to the "softer signals in the organization". People are the carriers of holism and complexity, who will perform at their best when let to do so. Diversity enables enriching the interrelationships that are key to complex systems.

To conclude, the added value of systems thinking and complexity theory is to provide the background assumptions that can support an appreciation of the roles of cultural diversity. By seeing the organization as a set of interrelationships that are let to evolve, the opportunities and potentials in cultural diversity are given more credibility. Without this, valuing and utilizing cultural diversity only sounds "nice," but easily becomes likened to a short-termed management fad. Cultural diversity sounds interesting but seems rely too much on soft concepts. In reality though, it refers to a complex goal encompassing all people-related aspects in an organizational setting and finding ways of enhancing the joint effectiveness of people in an organization within the environmental context in which it operates. This involves creating a setting that can be appreciated. What is culture, what is diversity, how can they be managed and ultimately made use of? These are the challenges. This is where both systems thinking and complexity theory can come together to provide a theoretical framework through which to approach cultural diversity.

CONCLUSIONS

This paper began with the concern that an important parameter in society and organizational life, namely cultural diversity, is misunderstood. In approaching and studying culture, social and management sciences both tend to restrict themselves to the pathways of Newtonian paradigms. Both take reductionist and simplistic views to understanding the workings of culture. Culture thus becomes studied from a Western, simplistic and reductionistic perspective, and is viewed from only one vantage point. Use of interdisplinarity approaches remains scarce. Culture, as it was defined in the second chapter of this paper, is multi-faceted. Many of its faces are left uncovered by the current means of scientific discovery.

Notions of systems, complexity and diversity were shown to be constants in much of human history. Systems approaches have existed for a long time in both the East and the West. Complexity has accompanied most of the eternal struggle of humankind understanding itself and its environment. Diversity has been a key component throughout human history. The scientific revolution has enabled today's global interconnectedness between people from all over the world. In sum, it seems clear that current management paradigms that rely on Western rational approaches to philosophy and science are inappropriate to grasping the complexity of the contemporary world. It is equally clear that restricting oneself to a mono-cultural viewpoint with strict rationality will not help to understand the diversity in the human experience in a complex world.

Systems thinking and complexity theory argue for alternative approaches, being able to see systems in the complex settings in which they operate. Complexity theory points to the need for new ways of scientific discovery. First, it shows how important it is to accept that science is just as natural as the world around us, not more complicated, not simpler. Second, it reminds us that we need to be skeptical and remember to question our assumptions. Many scientists currently seem to blindly follow a set of Newtonian assumptions without having ever questioned them. Given the amount of cultural diversity on this planet, we must have access to a variety of assumptions to inspire us to better see and understand our world. Assumptions beneath our viewpoints should not be quietly accepted, and none should be seen as universally correct. Culture is too interesting for that presumption to hold. Third, the barriers between science and the real world need to be reduced, if we accept the notion that chaos is a natural state of the living world. The traditional distinction between basic and applied science makes

less sense as we study living systems, such as culture. Science must also become more accessible and transparent.

Systems thinking and complexity theory provide a means of getting past the current dilemmas of studying and understanding culture. The continued reliance on the Newtonian paradigm to study managerial and social science approaches to culture seems counter-intuitive. The systems-complexity models seem better able to reconnect to the essential nature of culture and the human diversity that it houses. We need to improve our means to appreciate the holistic, interrelated, multi-leveled, subjective, complex and dynamic character of culture. The systems and complexity approach will help in the study of cultural and individual diversity. It will enable today's firms better understand how best to tap the potential inherent in cultural diversity, for example as they utilize mergers and acquisitions to acquire the material for diversity.

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