
Complexity, Foucault, and History as Evolution

Ken Baskin

*Institute for the Study of Coherence and Emergence,
Mansfield*

ABSTRACT

Applying the principles of complexity thinking to the study of history suggests a methodology very much like Foucault's approach, especially in such works as 'The Order of Things' or 'Birth of the Clinic'. This essay begins to sketch out such a complexity-oriented understanding of history, beginning with a discussion of the world depicted in complexity thinking and the concept of 'storied spaces' as the human equivalent of the complexity principle of 'complex adaptive systems'. Relying on Foucault's work, the essay examines a conception of history as the study of the emergence and evolution of social storied spaces, such as episteme, discourse, and organizational culture, then exploring Axial Age and post-Axial Age China, and Western civilizations to illustrate how this complexity-oriented conception of history plays out. The essay concludes with a brief discussion of some of this theory's implications.

INTRODUCTION

I began exploring chaos and complexity theories in the early 1990s. After reading *Order out of Chaos* (Prigogine and Stengers 1984), a figure came to mind to clarify the concept of the 'attractor' (see Fig. 1).

Think of water. Increase (time/change) the temperature of ice on the left, and it continues in the 'stable state' of ice until it reaches a crisis ('bifurcation') point, at which it enters a turbulent state ('phase transition'), emerging as liquid. As temperature continues to increase, the water remains liquid until it reaches another crisis, goes into another phase transition, and emerges as a gas on

the right. This is the life cycle of an attractor, a mathematical term that describes the limited number of possible behaviors characteristic of a system in a stable state (Kauffman 1995: 78). Water can behave as a solid, liquid or gas, but it can be only one, depending on the attractor conditions drive it to.

This figure continues to fascinate me. Those readers familiar with evolutionary theory may recognize it as 'punctuated equilibrium' (Gould 2002: 745ff.), the pattern by which world ecosystems develop, reach a crisis point, and then develop new ecosystems, dominated by emergent species. In this way, the dinosaur dominated ecosystems 100 million years ago. Those ecosystems would be destroyed 65 million years ago, enter a 'phase transition' in which survivors experimented with new body forms and relationships to discover what worked in the new environment, and then developed into the mammal-dominated ecosystems of the last 60-some million. What most excited me about this figure was the way it suggested the power of complexity theory to illuminate the social sciences. This figure represents any number of phenomena. It can represent the process by which a human fetus coming to term, reaches the crisis point of birth, enters the exploratory phase in which an infant/toddler develops the behaviors by which it will relate to its parents, and finds the behaviors characteristic of its personality. The child will express that personality in its neighborhood and schools, and, finally, reach the crisis point of adolescence, another exploratory phase transition. Similarly, this figure can represent the boom/bust cycle of Western economies or the life cycle of organizations (see Adizes 1988 or Land and Jarman 1992).

Perhaps most strikingly, it suggests Michel Foucault's analysis of the evolution of Western thought. The 600 years of intellectual history he explores in *The Order of Things (OT)*, for instance, reflected three such cycles – the Renaissance, the Classical and the Modern periods. In that book, he sketched the manner in which the Renaissance *episteme* and its accompanying *discourses* on language, nature study and economics reached a crisis point toward the end of the 16th century and transformed into the Classical *episteme*, with its accompanying *discourses*, which again developed until it reached its crisis point toward the end of the 18th century and transformed into the Modern *episteme* and *discourses*.

As I have written elsewhere (Baskin 2007a), Foucault's historical method incorporated the principles of complexity *before they had been formulated*. In this essay, I want to examine a complexity-oriented approach to history, focusing on the dynamics by which the ongoing emergence of social narratives drives the historical equivalent of punctuated equilibrium. To do so, I shall examine: 1) the world depicted in complexity thinking¹ and the survival challenge it presents; 2) human survival through use of nested networks of 'storied spaces'; 3) a complexity-oriented theory of history, with examples in 4) Axial China and 5) Western civilization. Because I am still in the process of developing this theory, I present my argument in the spirit that Foucault (1994b: 223) calls opening 'a space of research'. And if you find it valuable, but only if you do, I invite you to join me in exploring it.

THE WORLD OF COMPLEXITY THINKING

To oversimplify only a little, complexity thinking was born with the availability of desktop computers, which enabled researchers in fields including fluid dynamics, ecology, and economics, to model their subjects with non-linear mathematics. As these researchers began comparing results, they found remarkable similarities in behavior across their disciplines (see Pagels 1988). The world their studies began to describe is a nested network of entities at many levels of scale. My body, for instance, is made up of atoms nested in molecules, molecules in cells, cells in organs, and organs in my body as a whole. The most important of these entities are 'complex adaptive systems' (Gell-Mann 1994: 16–21 or Holland 1995: 10–37)². Every such entity functions as a *whole*, a fish, for instance; an *agent* in a larger entity, the fish in its stream ecosystem; and an *environment* in which its agents, the fish's molecules, cells and organs, operate. Because of this structure, everything in the world is interconnected at many levels.

As the term 'complex adaptive systems' suggests that these entities are continually adapting to each other, often at many levels. Hence, the genome (complex molecules) of the HIV virus (a cell) mutates to change the virus's structures so that it can adapt to its human (organism) host's immune system adaptations. Such multi-level adaptation is the dynamic of 'self-organization' (Jantsch 1980: 8–9). Because at every level agents determine what to do,

they do not need an external intelligence to design the way they organize as they respond to changing conditions. In order to adapt successfully, the ability to process information is critical. According to Gell-Mann (1994: 23–24), complex entities process information through a cycle of gathering it, comparing it to their inner models of the world, acting on what their models suggest about the information, and then learning from the response to their action.

The combination of interconnectivity and multi-level adaptation over time makes causality non-linear. Not only do events have many causes, some of which may appear hidden – consider the genesis of World War I – a phenomenon's cause may be circular, the positive feedback loops described by Arthur (1994), who applies them to economics. In the case of WWI, the arms race between nations in the two alliances strengthened the sense of threat in both, intensified the interconnections within each, and speeded development of new arms to adapt to the advances of the 'enemy'. Because of this non-linear causality, predicting the behavior of complex systems is often impossible. Often, the quickest way to find out what will happen is to watch (Gell-Mann 1994: 38–41).

The combination of co-evolution, non-linear causality and change over time drives entities, especially living ones, to generate 'emergent' behaviors. Thus, as the agents of any entity co-evolve, they can interact in new ways and generate emergent behaviors (Holland 1998: 115–124). Successful mutations, for instance, are changes in a living thing's genome that can generate new structures or behaviors. Similarly, Foucault's *Birth of the Clinic (BC)* (Foucault 1994a) traces the developments in politics, research, medicine and education that drove emergence of the modern *episteme* of medicine.

In the world complexity describes, survival is *the* critical challenge. How does any living thing find the appropriate action in a world of constant change, non-linear causality, and emergence? For human beings, this is an especially difficult challenge. As Jaspers noted (1953: 39), humans are unspecialized. Our survival depends, therefore, on our superior intellect and ability to learn from our communities. Most of all, human survival depends on our ability to tell stories, the human version of Gell-Mann's models, to ourselves and each other (Baskin 2003). (Stewart and Cohen went so

far as to suggest that the ability to tell stories enabled *Homo sapiens* to survive when our Neanderthal cousins became extinct [Pratchett, Stewart and Cohen 2002: 114–117].)

At the level of the individual, stories enable us to reduce the bewildering complexity of events around so that we can act on those stories and decide whether our storied version of events is valid by experiencing how others react to us. Elsewhere, I suggested that such stories take three forms – what Boje (2001: 1–5) called ‘antenarratives’, the still-fluid explanations of events that state *what might have happened*; narratives, the fixed stories that state *what did happen*; and mythic or myth-like³ stories, which help us describe *the way the world works*. Stories can evolve from antenarrative to narrative to myth-like as the person telling them enacts them and finds they enable successful responses to events around them (Baskin 2005). The world that humans experience, as a result, is a world each of us constructs in terms of the myth-like stories we have accepted or created to explain events around us.

THE WORLD WE STORY

In fact, we humans relate, not to the raw world of unmediated things and events, but to the storied spaces we construct. That storied world then shapes both our individual experiences and the institutions we collectively construct, generating the kind of self-reinforcing cycle so important in complexity thinking. The power of stories to structure the perception of ‘reality’ came home to me recently, as I began listening to the conversation between two women sitting behind me in an airplane. Their tone was calm and considered, much like a corporate marketing exercise exploring the effect on demand of raising the price of gasoline by five cents a gallon. Then I realized they were talking about *The Book of Revelations* – the Apocalypse, the Rapture, and how the Iraqi War fit in. At first, I was shocked that they would conflate a mythic reality from the Bible with events taking place as they spoke. They were, I thought, living in a world structured around the myths they had accepted. But so was I. The real difference between us, I realized, was that I accepted the myth-like stories of science.

I believe, in fact, that we experience a nested network of such storied constructions, including the personal, small group/family, organizational/community, field of practice/professional, and civi-

lization-wide levels. (I have intentionally omitted the level of national culture because it seems inherently confusing. Whenever I think about the national cultures of the United States and France, for example, which are grounded in the same *episteme*, yet both extremely different *and* identically chauvinistic, I begin to feel that my head is about to explode.) At each level, we experience the world as our mythic or myth-like stories define it; our characteristic responses, largely determined by the adaptive behaviors we have developed to respond to others in our storied spaces, act as a human equivalent of complexity's attractors; and as we respond, we enact and learn from the antenarrative stories we create to explain events. In the contemporary world, one could think of this nested network of storied constructions this way (see Table):

Storied space	Adaptive behavior	Narrative
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From this point of view, history studies the dynamics that emerge as people construct these narratives, translate them into institutions, and live within the storied spaces they have constructed. My methodology is most like that of Foucault, who, in *The Order of Things (OT)* for example, explored the evolution of *epistemes* and *discourses* in the last 600 years of Western civilization. His emphasis on the coherence within any period and the discontinuities between them (Foucault 1994c: xxii–xxiii) seems very much like the attractor life-cycle pictured above. In fact, the whole of *OT* suggested three reiterations of this cycle, ending in emergence of the Post-Modern period.

However, as Foucault made clear, while stories reduce the richness of the surrounding world for the individual, the interactions generated as people, especially in groups, enact their potentially very different stories, deepen the richness of social reality and drive the evolution of their storied spaces. Nowhere did he depict the way people enacting group narratives enrich social reality than in *BC*, where he sketched out many of the interactions that led from the Classical *discourse* on medicine to its counterpart in the Modern world. Foucault's proto-complexity perspective becomes obvious as he demonstrated that it is interactions, not individual intentions that generate the new *discourse*. Thus, members of the French Revolutionary Assembly assumed that the results of their medical legislation would be two-fold: doctors would no longer be

experts exercising a closed body of knowledge, and hospitals, in a healthy society, would no longer be needed (Foucault 1994a: 29–32). The end result, due to interactions with physicians, educators and researchers, was exactly the opposite: Doctors became the social model of the expert and the hospital became the center of the medical spectacle. (For a fuller discussion, see Baskin 2007a.) For the most part, Foucault did not explore the effects of *episteme* and *discourses* on lower levels of storied space. However, he did point out the effects of the developing Modern *episteme* on the family in *Abnormal* (Foucault 2003: 249–258). The family, he shows, is shaped by the demands of the *episteme* and *discourses* in which it exists, and then transmits those concerns to its children. Humans are thus formed by the social environment *and* forming it simultaneously. One might examine, for instance, how the *discourse* on physics at the turn of the 20th century shaped Einstein's personal storied space and how his antenarrative 'thought experiments' then reshaped that *discourse*.

The governing storied space of any society is its civilization, with the *episteme*, *discourses*, and the adaptive behavior it implies. This storied construction both shapes and is composed of the institutions, which De Landa (1997: 259) described as 'transitory hardenings in the flows of money, routines, and prestige', as well as the 'permanent building to house them'. (This perception seems especially provocative today, as modern China's story of the world and its place in it has so changed that the nation's leaders are re-making the *face* of China, tearing down its historic constructions and rebuilding in a way that seems impossible to imagine in Venice or Rome.) These institutions house the *discourses* that, in turn, govern the organizational cultures that one sees, for instance, in American hospitals, which reflect the Modern Western *discourse* on medical care and its analytic *episteme* (Baskin 2007c).

A COMPLEXITY-BASED THEORY OF HISTORY

From this complexity-oriented point of view, the issue of survival remains primary. This primacy is easily overlooked, if only because civilizations seem constructed to obscure it. Yet, I am convinced that the social storied spaces that we humans create are adaptations to specific sets of conditions and invariably address how people in them believe they must behave to survive. The conditions

under which people first coalesce socially seem especially important to the storied spaces they construct, as writers as different as Spengler (1934) and Feng (1976) have observed. (In complexity, the critical effect of action in the exploratory phase before a system reaches a stable state is called 'sensitive dependence on initial conditions' [Cohen and Stewart 1994: 191].) As Feng (1976: 16–27) noted, the differences between Chinese and Greek civilizations reflect their emergence, respectively, from a geographically isolated agricultural society and an island-based society that relied on trade. One need not hold that these conditions *determined* the civilizations that arose in them to appreciate the way the need to survive in a bewildering, complex world strongly shapes the social storied space any people develop. As a result, Chinese civilization would evolve with a farmer's emphasis on land and the family, with the king depicted as the father of his people, as well as on a philosophy grounded in observation and contemplation of the natural cycles of that land. Greek civilization, on the other hand, would focus on the town (eventually, the city-state), as trade center, with the *polis* that Raanflaub (2005: 269) calls 'a perfect response to the Greek topography', and a philosophy that emphasized the merchant's adventurous exploration of all things.

From these beginnings, civilizations seem to evolve through a form of punctuated equilibrium, as people respond to and eventually break through the limits imposed by their storied spaces, especially during times of turmoil, Toynbee's (1974: 68) 'reaction of the actors to the ordeal'. As Fig. 1 suggests, such repeated breakthroughs seem inevitable, because a civilization's storied spaces become more stable as people become more dependent on long-standing ways of thinking and behaving, *even as their environments change*. In other words, social adaptive behaviors, especially a *discourse or episteme*, tend to seek stability. Once they achieve the human equivalent of a 'stable state', they tend to remain in those states unless they are exposed to competition with other adaptive behaviors at that level, as we shall see with Chinese *discourses* on philosophy and the competition between *epistemes* in today's international affairs.

The 'mother' of all periods of turmoil, the Axial Age (900–200 BCE), was a time of 'radical cultural transformations in several major civilizational centres' – Greece, Palestine, India and China.

This period saw barbarian invasions, technological advances, especially in warfare, the breakdown of old tribal social patterns, and ‘radical changes to culture patterns and their relationship to the structure of social power’ (Aranson *et al.* 2005: 1–2), during which people came to face the ‘terror of the world and (human) helplessness’ (Jaspers 1953: 2). This degree of terror may be difficult for those of us born in the West after World War II to understand; however, it becomes clearer when one notes the scattered images of parents cannibalizing their children – historically, in reports from Song China in 593 BCE (Armstrong 2006: 200), and in both Greek (Kronos eating his children in Hesiod’s *Theogony*) and Israelite (*Deuteronomy* 28: 54–57) religious literature. In response, people in these places launched ‘a powerful movement going in search of new ideas’ (Abdel-Malek 1981: 9). Such exploratory periods, like the phase transitions of complexity, would lead those peoples to the rise, among others, of Ancient Greek and Han Chinese civilizations.

AXIAL AGE CHINA

To examine how social storied spaces evolved, I want to look at the Chinese Axial Age experience. It is important to note that this experience is both unique in the way its people responded to specific conditions and powerfully representative of the other Axial experiences in which, to use Deutsch’s characterization, ‘major clusters of old social, economic, and psychological commitments are eroded and broken and people become available for new patterns of socialization and behavior’ (as quoted in Eisenstadt 1983: 23). In China, the feudal, family-oriented society of the unified Zhou dynasty (1050–771 BCE) would break down over the half millennium of the Spring and Autumn period (722–481 BCE) and then the Warring States period (403–221 BCE). During that time, the more than 150 states of the former period were reduced through war to the seven states of the latter. One of the great differences between these two periods was the technological advances, especially the crossbow and cavalry (Armstrong 2006: 148–149, 267–268), that drove war from the largely ritual matter to the concept of ‘absolute’ war (Armstrong 2006: 148–149, 267–269; Jullien 1995: 30).

The storied space that would emerge was grounded in two adaptations. First, the Chinese responded to the horrors of the period with what Jullien (1995: 237) called a 'congenital horror of anarchy', which, in turn led to a 'semi-sanctification of the imperial order' (Eisenstadt 1986: 293). In this way, from the First Emperor of the Qin dynasty in 221 BCE, the emperor was the all-powerful father of 'all under Heaven'. As Hsu (1986: 312–313) noted, Mencius had emphasized the necessity for a unified China about 100 years before the First Emperor achieved it. And because 'Chinese theorists of despotism' recognized 'that political power depended essentially on the all-enveloping knowledge that could be acquired about people' (Jullien 1995: 47), they developed a theory of government that most resembles the totalitarianism of the 20th century. In any case, it is this centralization of power and the integration of all institutions into its structure that makes China the most 'homoarchic' (Bondarenko 2007: 36–38) – that is, one's position in *any* of the hierarchies in the society (government, education, labor) is largely determined by the position in a *dominant* hierarchy – of all the post-Axial civilizations. As a result, I prefer to think of Mao as the last Emperor of China, rather than its first Communist dictator.

Second, the storied spaces of the Qin-Han civilization (221 BCE – 220 CE), which emerged from China's Axial experience, remained grounded in the Chinese people's agricultural experience and the knowledge they developed to survive. The resulting *episteme* remained substantially the same for more than 4,000 years, until challenged by the Western *episteme* in the 19th century. Among the key perceptions the Chinese *episteme* would make part of its civilization were these:

1. The cyclic repetition of emergence of new life, growth and death (in discussing Chinese music, for instance, Jullien [2004a: 73] refers to this dynamic as emergence and loss);

2. The need for harmonious interaction of opposites – such as hot and cold, wetness and dryness (see Feng [1976: 138–142] on the Yin-Yang school);

3. The farmer's function of ensuring the proper conditions so that the desired products would emerge from the cycle of life and death (Jullien 2004b: 72–73) explains the sage/general as a strategist/farmer who makes sure all the conditions are right and then engages, confident in how the outcome will unfold.

China's *episteme* would remain grounded in these two adaptations for the next 2,000 years, developing storied spaces that reflect both the horror of chaos and this view of nature and the world. It would, however, evolve, driven by developments in Chinese philosophy, as it responded to China's Axial Age.

This creative response was so extensive that the period from the fifth to third centuries is referred to as the time of the hundred schools, generally broken into six major groups (Feng 1976: 30), as different as the Confucian ritualistic school, the Daoist intuitive school, and the Legalist school of legal control. All of them were responding to the devastation and social dislocation thinkers in these schools had experienced. Confucians, for instance, storied that men were essentially good and that they could best balance their personal desires with the good of society by becoming educated and observing ritual, under the example of a sage king who would act in the best interests of his people (De Bary 1998: 30–33). Daoism, which Watts (1975: xiv) defined as ‘the way of man's co-operation with the course or trend of the natural world’, focused, rather, on intuitive cooperation with events as they unfolded. The Daoist story thus suggested that the way to be successful in all areas of life is to understand the natural evolution of things and intuitively cooperate with it. Thus the sage would practice *wu wei*, ‘non-action’, allowing the *Dao* – the organic order and internal rhythm by which all things in life evolve – to express itself without undue interference. The Legalists, on the other hand, focused on men's difficulty in resisting their desires. They storied that ‘the sage does not depend upon men doing good themselves, but brings it about that they can do no wrong’ (Han Feitzi, as quoted in Feng 1976: 160). All three schools assume that society will function best when people live according to the *Dao*, differing mostly on how to do so. As Hsu (2005: 259) noted, the history of subsequent developments in Chinese philosophy chronicles the co-evolution of these philosophies.

In fact, much of Chinese history seems to reflect the competition largely between Confucians, Daoists, Legalists, and, briefly, Buddhists, as they strove to have their narratives of social and political life become the narrative of power. The relationship between emperors and ministers in these schools was mutually beneficial. On the one hand, the Emperors needed the legitimacy that these

philosophies could provide, much as the kings of Medieval Europe sought the blessing of the Catholic Church. On the other, acting as the Emperor's minister gave members of these schools, as well as the schools themselves, tremendous power and prestige. In this way, the First Emperor, who united China in 221 BCE and established the Qin dynasty, had Legalist ministers, whose philosophy helped him create a ruthlessly efficient state. With their help, the First Emperor undermined the power of the hereditary aristocracy by resettling them in his capital. He replaced it with the beginnings of a bureaucracy that continues to dominate Chinese affairs. Drawing on Han Feizi's Legalist doctrine that 'in the state of an enlightened ruler there are no books written on bamboo slips; law supplies the only instruction', in 213 BCE, he ordered the burning of all books, except those on medicine, agriculture and divination. In the following year, he is reported to have had 460 Confucians killed (Gascoigne 2003: 48–49).

Gascoigne suggests, in addition, that the First Emperor's attempts at practical reforms, for instance, standardization of weights and measures, his system of compulsory labor, and setting a uniform axle width for carriages, may have been linked to an obsession for standardization and control. After he died in 210 BCE, his empire fell apart, resulting in a civil war for the next few years. (The curiously split attitude toward the First Emperor – as both first unifier of all under Heaven *and* an example of the madness of power – is superbly articulated in Kaige Chen's 1999 film, *the Emperor and the Assassin*, which explains the madness in a way that makes the Emperor surprisingly sympathetic.)

The First Emperor's abuse, or, if you prefer, 'use', of the Legalist teachings gave that school a permanently bad name (Gascoigne 2003: 53), even though its principles remained part of the way Chinese would story government. One of the key elements of that story of government was the 'Mandate of Heaven', which the Zhou dynasty established, apparently to justify its overthrow of the previous dynasty in the 11th century BCE. According to that mandate, Heaven selected and supported a righteous ruler, endowing him with supreme authority as long as he accepted the responsibility of governing in the interests of his people. When a ruler ignored this responsibility, Heaven would replace him (Hsu 1986: 308). It may have been with the 'Mandate of Heaven' in mind that

the greatest of the Han emperors, Wudi (141–87 BCE) accepted Confucianism, even though he ruled ‘with a bare-faced autocracy which in some ways outdid even the hated Legalism’ (Gascoigne 2003: 66). He may also have felt that it had become a more appropriate choice because recent Confucian scholars synthesized elements of other schools of thought. What is undeniable is that Confucian ministers had become attractive because of this school's emphasis on education. To govern his vast empire successfully, Wudi needed a trained bureaucracy, and it was to the Confucians, whose story for society so strongly emphasized education, that he turned when he established the Confucian classics as the only courses in the Imperial Academy, which became the training ground for his bureaucrats (Hsu 1986: 315–316).

The Chinese viewed history cyclically. Dynasties, it held, would arise with the Mandate of Heaven and a worthy ruler. Over time, the dynasty would become corrupt and would eventually be overthrown and replaced (Gascoigne 2003: 81). To a large extent, that cycle applied to the schools of philosophy that won official recognition, too. As dynasty replaced dynasty over the next 2,000 years, emperors would choose one school, as Confucians, Daoists, Buddhists, and Neo-Confucians would all have their chance. Through all this, emperors would proclaim their intent to live up to, invariably unsuccessfully, the standards of righteous kingship held by the philosophical school any one of them favored. In the end, the victory of some strain of Confucianism seemed inevitable. After all, because it storied education as so critically important, its members were able to control the mechanisms of education, and, therefore the society's storied spaces, which, like the Catholic Church before the printing press, gave it enormous power. In this way, a complexity-oriented theory of history suggests that power belongs to those who control the storying of society.

A SECOND AXIAL AGE?

What, then, does this complexity-oriented theory of history say about Western civilization? First of all, it immediately calls up Jaspers's observation that the period between 1500 and 1800 may be a second Axial Age (Jaspers 1953: 75). In fact, the last 500–600 years, like the Axial Age, *have* produced similar social dislocations, from the enclosure crisis of English agriculture under Hen-

ry VIII to the industrialization and urbanization of the 18th and 19th centuries; technological innovation, from the early mechanization of the late Middle Ages to the Industrial Revolution and the current revolution in electronics; and wars that created soul-numbing horror, whether Europe's religious wars of the 16th century, the American Civil War in the 19th, or the unending wars of the 20th century, which in many ways resembles China's Warring States period. In at least one way, however, it is radically different, because it has resulted in a world that, for the first time, demands the co-evolution of a variety of *epistemes* rather than the dominance of one or conflict of two.

After the fall of the Roman Empire, Europe was overrun by barbarian invaders, Visigoths and Lombards, Franks and Saxons, for example. Over the next half millennium, they took root, experiencing a wide variety of crises, from conversion to Christianity, to Islamic and Viking invasions, from repeated waves of the plague to the Crusades and Islamic/Greek intellectual influence that followed. This exceptionally rich brew of 'initial conditions' seems, from my point of view, to have made Western civilization uniquely dynamic. One element of that dynamicism worth noting is the way two *epistemes* existed side by side *within* one culture – the Western quest for knowledge and Christian knowledge through revelation – shaping its history as a competition between two *epistemes*. Chinese history, on the other hand, developed as the expression of one *episteme* for more than 4,000 years. This Western experience was expressed in the quest mythology of writers such as Chretien de Troyes and Wolfram von Eschenbach in the late 12th and early 13th centuries (Spengler 1934: 186). That mythology was a religiously infused reflection of the Western spirit, which one might, half-jokingly, depict as the barbarian horseman questing for knowledge fused with the Christian symbol of the Holy Grail as object of the quest.

From this point of view, *OT* becomes Foucault's description of the Western *episteme* and *discourses* on economics, language and nature studies, as they evolve through a set of three storied spaces, from about 1400 to the end of the 20th century. Foucault began with the Renaissance's story of the world as a place God has constructed that 'must fold in upon itself, duplicate itself, reflect itself, or form a chain with itself so that things can resemble one another'

in order that man might make 'everything speak' and interpret God's hidden meaning (Foucault 1994c: 25–26, 40–41). He moved then to the beginning of the 16th century, at which time thinkers such as Descartes and Bacon seek to 'leave behind the distorted memory of a muddled and disordered body of learning in which all the things in the world could be linked indiscriminately' (*Ibid.*: 51). They would replace it with 'an exhaustive ordering of the world' (*Ibid.*: 74) in which knowledge became storied as the *table*, as, for example, in the Periodic Table of elements, and the quest to complete that table, the highest form of intellectual investigation.

During the last half of the Renaissance and first half of the Classical period, the conflict between the barbarian quest and Christian stories of society reached its most intense. The Reformation and Counter-Reformation, the Spanish Inquisition, the Catholic Church's rejection of Galileo and the solar-centric universe, the dynastic/religious wars of the 16th century – all these express the incompatibility of the storied spaces created by these two *epistemes*. By the beginning of the 17th century, the forces of individual quest were largely victorious. The most powerful champions of Biblical revelation, the Hapsburgs in Spain and Austria, had begun their decline, and the English government, which had taken control of its church, was beginning its imperial expansion. The final blow to Europe as a Christian storied space came with the Enlightenment in the 18th century. I find myself wondering whether the Enlightenment's near worship of reason, as in Vico's comment that 'the rational nature ... is the true human nature' (Vico 1984: 18), was not an adaptation to the violence of the 16th and 17th century. Rather than story the need for a unified government, as post-Axial China did, Europe storied a purely rational world to banish the horrors they had witnessed. Ironically, the Terror of the French Revolution would be waged in the name of the rational values of the Enlightenment, and the 20th century was the ultimate expression of this story.

In any case, as Foucault noted, by the years before the beginning of the 18th century, the advances of the rational quest for knowledge broke down the Classical *episteme*, as it became clear that even the most complete classifications of things could not explain them. Something hidden was having an enormous effect, as

‘the empirical domains [had] become linked with reflection on subjectivity...’ (Foucault 1994c: 248) Finally, in the early years of 1800s, Western man restored his space, transforming his *episteme* into the search for ‘great hidden forces developed on the basis of their primitive and inaccessible nucleus, origin, causality, and history’ (*Ibid.*: 251).

This is panoramic stuff, but it opens the study of history to detailed analysis of how large numbers of persons, interacting, can perform that act of restoring social spaces and remaking societies. As noted earlier, *BC* probably offered the fullest, most powerful example, as Foucault examines the transformation of the Classical *discourse* on medicine to the Modern one. He performs a similar analysis of the transformation of the *discourse* on punishment in *Discipline and Punish (DP)*. It is in these studies that he suggests the dynamics by which storied spaces become institutions – hospitals in *BC* and prisons in *DP*. Storied spaces, Foucault’s work made clear, become mortar and brick. And once they become mortar and brick, they shape how each of us stories our world, until, once again, the world around us changes so much that we must restore our social space, as we apparently are doing today.

IMPLICATIONS

This approach to the study of history has several implications worth mentioning before ending this essay. For one thing, it supports Kroeber’s position about half way between Spengler’s civilization as a system of coherent parts and Sorokin’s ‘vast dumping heap’ (Kroeber 1963: 85, 175). Rather than either of these extremes, this complexity-oriented approach to history suggests that civilizations consist of networked storied spaces that appear congruent because people in them share a similar history and are responding to similar conditions, whether they are storying their *episteme*, their *discourses* on medicine, poetry or building-construction, or their national or organizational cultures.

Secondly, this orientation offers an approach to the task Abdel-Malek (1981: 27) set to restructure ‘the (universal) conceptual apparatus’ for understanding societies in a way that accepts difference. Complexity thinking, in fact, does not merely *accept* difference, it embraces, perhaps even celebrates such difference. For complexity, context is everything. The nature of any entity de-

pend largely on the context of its history and environment. So, from this viewpoint, differences between civilizations' storied spaces are to be *expected*, as the unavoidable result of the differing demands for survival responses in different places and times.

And it may well be that the need for a philosophy grounded in embracing differences has never been so desperately needed. With the end of Western hegemony in the 20th century, we now face Huntington's (1997) world of six major civilizations, 'rival principalities all aspiring to hegemony', as Jullien (1995: 30) described China's Warring States period. Complexity insists, of course, that the quickest way to learn what a complex system will do is to watch it. However, it also suggests that what will eventually happen, will likely be some sort of catastrophe that will throw the current international system into a transitional phase. (Enough potential crises – from ecological to energy resource disasters to political confrontation that spiral out of control – are real possibilities.) When such a crisis will occur, however, is much more difficult to ascertain.

Complexity thinking suggests that when the crisis does arise, the international system will transform itself and create a new storied space. One can certainly hope that the process of that transformation will be less destructive of human life than events of the last 100 years. What one can never know, until events transpire, is what that transformed state will be like. Will it consist of several very different transformed civilizational storied spaces? Or different variations on a common theme? Or a single, unified planetary civilization? My guess is that it would be some form of the second alternative. But the only way I will ever know is to live long enough to witness the transformation.

In the meantime, all of us face a significant problem. Our world is becoming increasingly globalized. Between the media, the Internet, and international trade, the fates of all six of Huntington's major civilizations today are intimately interconnected. How, then, are the world's government leaders and business people to deal with such a truly 'multicultural' world? I would suggest that Needham had it right, that our successful survival depends on 'the active practice of humility' (as quoted in Abdel-Malek 1983: 43). This, for me, is the real message of a complexity-based theory of history: All the civilizations of the world have constructed and

lived in the storied spaces for which their people experienced the need. They are all different; however, those differences, for the most part, are ones with which others can learn to empathize. We can learn to live in each others' civilizations by understanding them from the inside out, rather than merely rejecting their differences as reflections of 'right' and 'wrong'.

This is no easy task. It is one thing to understand intellectually that all stories reduce the richness of the world. By their very natures, all stories are partial. No story is the *whole* story. Moving to an emotional acceptance of this truth can be much more difficult. Many married people from the same cultures, perhaps even the same neighborhoods, cannot do it. Nonetheless, there seems to be no alternative, and we humans are, after all, incredibly adaptable when we need to survive.

NOTES

¹ I shall use the term 'complexity thinking' rather than the alternatives 'complexity theory' or 'complexity science'. The former phrase is not accurate because this field of study does not offer a theory. The latter presents difficulties because the social sciences seem qualitatively different from the physical sciences. While complexity terminology accurately describes physics, chemistry and biology, it can be applied only metaphorically to social sciences. For me, complexity is a way of thinking that enables researchers to use the basic principles of complexity science as tools to deepen understanding.

² Interestingly, a wide range of writers object to the use of the word 'system', especially in referring to human systems. In this way, Sorokin's objection (1957: 17–19) to considering civilizations as 'systems' is parallel to Stacey's objection (2001: 75) to thinking about organizations as 'systems'.

³ In earlier articles I referred to these as 'mythic' stories. I have added 'myth-like' to avoid the controversy over the nature of myth. By myth-like, I mean that they serve the function of myth as suggested by Campbell (1976: 6), when he noted that 'the most critical function of a mythology' is 'to foster the centering and unfolding of the individual in integrity' with himself, his culture and the universe. Myth-like stories enable us to center and unfold by **modeling how the world works**.

REFERENCES

- Abdel-Malek, A.
1981. *Civilization and Social Theory*. Albany. NY: State University of New York Press.

Adizes, I.

1988. *Corporate Lifecycles: How and Why Corporations Grow and Die and What to Do about It*. Englewood Cliffs, N. J.: Prentice Hall.

Aranson, J. P., Eisenstadt, S. N., and Wittrack, B.

2005. General Introduction. In Aranson, J. P., Eisenstadt, S. N., and Wittrack, B. (eds.), *Axial Civilization and World History* (pp. 1–12). Boston: Brill.

Armstrong, K.

2006. *The Great Transformation*. New York: Alfred A. Knopf.

Arthur, W. B.

1994. *Increasing Returns and Path Dependence in the Economy*. Ann Arbor, Mich.: University of Michigan Press.

Baskin, K.

2003. Complexity and the Dilemma of the Two Worlds: The Dynamics of Navigating in Fantasyland. *Emergence* 5(1): 36–53.

2005. Complexity, Stories and Knowing. *E:CO* 7(2): 32–40.

2007a. Foucault, Complexity and Myth: Toward a Complexity-based Approach to Social Evolution (A.K.A. History). In Richardson, K. A., and Cilliers, P. (eds.), *Explorations in Complexity Thinking: Pre-Proceedings of the 3rd International Workshop on Complexity and Philosophy* (pp. 1–13). Mansfield, Mass.: ISCE Publishing.

2007b. Ever the Twain Shall Meet. *Chinese Management Studies* 1(1): 57–68.

2007c. *Nursing Stories, Nursing Cultures*. Presented at the Standing Conference on Management and Organization Inquiry. March 29, Las Vegas, NV.

Boje, D. M.

2001. *Narrative Methods for Organizational and Communication Research*. London: Sage Publications.

Bondarenko, D. M.

2007. What is there in a Word? Heterarchy, Homoarchy, and the Difference in Understanding 'Complexity' in the Social Sciences and Complexity Studies. In Richardson, K. A., and Cilliers, P. (eds.), *Explorations in Complexity Thinking: Pre-Proceedings of the 3rd International Workshop on Complexity and Philosophy* (pp. 35–47). Mansfield, Mass.: ISCE Publishing.

Campbell, J.

1976. *The Masks of God: Oriental Mythology*. New York: Penguin Books.

Cohen, J., and Stewart, I.

1994. *The Collapse of Chaos: Discovering Simplicity in a Complex World*. New York: Penguin Books.

De Bary, W. T.

1998. *Asian Values and Human Rights: A Confucian Communitarian Perspective*. Cambridge, Mass.: Harvard University Press.

De Landa, M.

1997. *A Thousand Years of Nonlinear History*. New York: Zone Books.

Eisenstadt, S. N.

1983. *Tradition, Change and Modernity*. Malabar, FL: Robert E. Krieger Publishing.

1986. The Axial Age Breakthrough in China and India. In Eisenstadt, S. N. (ed.), *The Origin and Diversity of Axial Age Civilizations* (pp. 291–305). Albany: State University of New York Press.

Feng, Y.-L.

1976. *A Short History of Chinese Philosophy*. New York: Free Press.

Foucault, M.

1994a. *The Birth of the Clinic: An Archaeology of Medical Perception*. New York: Vintage Books.

1994b. *Power*. New York: The New Press.

1994c. *The Order of Things: An Archaeology of Human Sciences*. New York: Vintage Books.

1995. *Discipline and Punish: The Birth of the Prison*. New York: Vintage Books.

2003. *Abnormal*. New York: Picador.

Gascoigne, B.

2003. *The Dynasties of China: A History*. New York: Carroll & Graff Publishers.

Gell-Mann, M.

1994. *The Quark and the Jaguar: Adventures in the Simple and the Complex*. New York: W. H. Freeman and Co.

Gould, S. J.

2002. *The Structure of Evolutionary Theory*. Cambridge, Mass.: The Belknap Press.

Holland, J. H.

1995. *Hidden Order: How Adaptation Builds Complexity*. Reading, Mass.: Perseus Publishing.

1998. *Emergence: From Chaos to Order*. Cambridge, Mass.: Perseus Publishing.

Hsu, C. Y.

1986. Historical Conditions of the Emergence and Crystallization of the Confucian System. In Eisenstadt, S. N. (ed.), *The Origin and Diversity of Axial Age Civilizations* (pp. 306–324). Albany: State University of New York Press.

2005. Rethinking the Axial Age – The Case of Chinese Culture. In Aranson, J. P. et al. (eds.), *Axial Civilization and World History* (pp. 451–467). Boston: Brill.

Huntington, S. P.

1997. *The Clash of Civilizations and the Reworking of World Order*. New York: Simon & Schuster.

Jantsch, E.

1980. *The Self-organizing Universe: Scientific and Human Implications of the Emerging Paradigm of Evolution*. New York: Pergamon Press.

Jaspers, K.

1953. *The Origins and Goal of History*. New Haven: Yale University Press.

Jullien, F.

1995. *The Propensity of Things: Toward a History of Efficacy in China*. New York: Zone Books.

2004a. In *Praise of Blandness: Proceeding from Chinese Thought and Aesthetics*. New York: Zone Books.

2004b. *A Treatise on Efficacy: Between Western and Chinese Thinking*. Honolulu: University of Hawai'i Press.

Kauffman, S. A.

1995. *At Home in the Universe: The Search for Laws of Self-organization and Complexity*. New York: Oxford University Press.

2000. *Investigations*. New York: Oxford University Press.

Kroeber, A. L.

1963. *Style and Civilization*. Los Angeles: University of California Press.

Land, G., and Jarman, B.

1992. *Breakpoint and Beyond: Mastering the Future – Today*. New York: Harper Business.

Pagels, H. R.

1988. *The Dreams of Reason*. New York: Simon and Schuster.

Pratchett, T., Stewart, I., and Cohen, J.

2002. *The Science of Discworld II: The Globe*. London: Ebury Press.

Prigogine, I., and Stengers, I.

1984. *Order out of Chaos: Man's New Dialogue with Nature*. New York: Bantam.

Raanflaub, K. A.

2005. Polis, 'the Political', and Political Thought: New Departures in Ancient Greece, c. 800–500 BCE. In Aranson, J. P., Eisenstadt, S. N., and Wittrack, B. (eds.), *Axial Civilization and World History* (pp. 253–283). Boston: Brill.

Sorokin, P.

1957. *Social and Cultural Dynamics: A Study of Change in Major Systems of Art, Truth, Ethics, Law and Social Responsibility*. Boston: Porter Sargent Publisher.

Spengler, O.

1934. *The Decline of the West*. London: George Allen & Unwin.

Stacey, R. D.

2001. *Complex Responsive Processes in Organizations: Learning and Knowledge Creation*. New York: Routledge.

Toynbee, A.

1974. *A Study of History: Abridgment of Volumes I–VI*. New York: Oxford University Press.

Vico, G.

1984. *The New Science of Giambattista Vico*. Ithaca, NY: Cornell University Press.

Watts, A.

1975. *Tao: The Watercourse Way*. New York: Pantheon Books.

Table 1

Storied space	Adaptive behavior	Narrative
Civilization	<i>Episteme</i>	How we know
Field of Practice	<i>Discourse</i>	How we perform a task
Organization/Community	Culture	How we ‘do’ things generally
Small group	Dynamics	How we interact
Person	Personality	How I survive

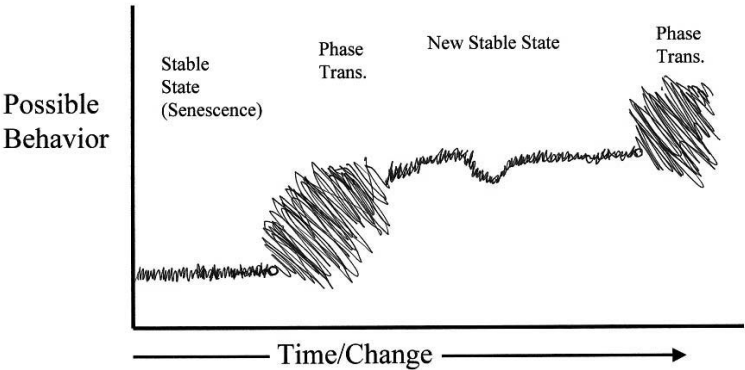


Fig. 1