

**What's Done is Donne:
Complex Change, Business Scholars,
and a Great Books Program**

By

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What's Done is Donne: Complex Change, Business Scholars, and a Great Books Program

What happens when a business professor is asked to teach in an Oxford model great-books program? What happens when a business student becomes part of that program? What happens is that the nuances of the change literature leap off the page and apply themselves in new and fascinating ways.

A major theme in the business journals is that success in the 21st century requires the ability to absorb and integrate change and innovation in appropriate ways (e.g. Allred, Snow, & Miles, 1996; Brown & Eisenhardt, 1998; Smith, 1999). This applies to individuals as well as institutions. However, like many people my preference is to think and even teach about change, but not necessarily to experience it—at least not in a non-proscribed way. However, accepting an invitation to teach in the classics-based Torrey Honors Institute forced me to understand change in a new way.

The invitation made me both flattered and apprehensive. The flattery may have been questionable, but the apprehension was not. Teaching in Torrey was simultaneously wonderful and terrifying. The curriculum was different than I was used to, the required pedagogical style was different than I was used to, and even the students were different than I was used to. I needed to change or self-destruct.

This paper came out of that experience. My decision to write it was confirmed when Timothy Chandler, a management student who is also a student in the Torrey program, agreed to add his perspective to the discussion. Our intention in the paper is to use our experience in Torrey to explore the complex system issues that arise when a business professor and a business student move out of their natural environment into the world of Plato, Donne, and David Hume. In the process, we will discuss and integrate topics such as chaos theory, creative destruction, and dialectic change.

Much of the current management literature is concerned with different perspectives of change in complex systems. This paper will focus on two perspectives: chaos/complexity theory and dialectic change. Chaos/complexity theory comes from mathematics and is relatively new in the literature. It involves the study of systems that are simultaneously ordered and chaotic depending on the level and perspective from which they are viewed. Two aspects of this theory that we will deal with are the so-called “butterfly effect,” and the issues of system attractors.

Dialectic change is an ancient model that refers to system transformations that occur under the pressure of opposing forces. Summer follows winter, day follows night, ying becomes yang. Each extreme represents a change in which a system - the weather, the light - fluxes into its opposite and is transformed.

We begin the paper with a discussion of the change models of chaos/complexity and dialectic. Next, there is a brief outline of the environment in which we experienced these change types: the Torrey Honors Institute. In the third section we integrate the change models into the Torrey experiences of both professor and student. We close with a section on generalizable insights gained and lessons learned.

CHANGE IN COMPLEX SYSTEMS

Rapid change is the watchword of our times. Technology, most notably the Internet, is driving a profound paradigm shift in our society. A new economy with new rules is springing up seemingly overnight. Social change is happening at a furious rate; futurists tell us there is likely to be more social change in the next ten years than there has been in the last century (Bell & Gray, 1997). As complex systems, organizations are no exception to this rule. In order to survive

and thrive in the new economy they are being forced to reinvent and modify themselves continuously (Smith & Vecchio, 1997).

These forces of change also apply to the individual-in-system, a complexity of one. Not every aspect of change theory might apply to individuals, but the ideas involved can often be used to coherently frame experience.

The two perspectives of change we have chosen to discuss in this paper are chaos/complexity theory and dialectic change. These two were selected because of their inherent interest to CBFA members and because of their applicability to our situation. Many find the relative newcomer, chaos/complexity, both intriguing and compelling. Dialectical change is an old idea, familiar through the application made by Engels and Marx. We will apply this concept at a different level and to different phenomena.

Chaos and Complexity

Chaos theory, a concept borrowed from science and mathematics, is the study of complex interactive systems - such as ecologies, organizations, or human beings - that appear to be simultaneously ordered and chaotic, depending on the level and perspective of the observer (Gleick, 1987; Waldorp, 1992). From one perspective, the system may appear haphazard and anarchic, but from another perspective, intent and organization are clearly seen. In chaos mathematics, for example, numbers that appear totally random and disordered at one level create beautiful fractal designs at another. This concept and its ramifications has been brought into the study of organizations through organizational complexity theory and chaos theory.

A complex system is defined as a set of elements, often called nodes or points, and the linear and non-linear interactions between them. It is the multiple interactive relationships between the nodes that characterize the system. These relationships form patterns across and between levels in the system (Devaney, 1988). The relationship patterns follow stable rules, but because many of the interactions are non-linear, the rules are not necessarily obvious to an observer whether he or she is inside or outside the system (Anderson, 1999; Waldorp, 1992). Therefore, from the observer's perspective, the system appears to be random and unpredictable; the patterns of order emerge out of what seems to be arbitrary chaos. A simple example of this principle occurs when one starts a new job. Initially, the different tasks and norms of the job appear to be random and chaotic. Eventually, one starts to discover the relationships behind the task and norm nodes. People wear ties on Monday because the sales meeting is on Monday and the boss likes ties. The secretary will do some tasks well, some he will do badly. One begins to understand the power flows in the department and the larger organization.

The “butterfly effect”. System changes occur in many ways. The ones we will focus on here are the so-called “butterfly effect” and the attractor flip. The butterfly effect¹ has to do with transformation triggered from within the system – tiny, random changes in the system that can cumulatively result in major modifications. Because the nodes are networked in non-linear and complex ways, a slight change in one area can trigger another small change, which triggers another until there are disproportionately large disruptions in the relationships and patterns. As a small part of the pattern changes, relationships and rules between the nodes change, and eventually a new pattern emerges – the system is different (Morgan, 1997). Anyone who has served on a committee knows how apparently inconsequential remarks, or small changes in relationships, can take on a life of their own and affect major decisions. As the patterns emerge out of chaos, the committee changes.

¹ The famous example is that the flutter of a butterfly's wings in Peking triggers a small change that triggers another small change until the cumulative changes lead to a hurricane in the Caribbean

Attractor flips. System changes can also be triggered from outside the system. Attractors are environmental influences that the people in the system pay attention to (Morgan, 1997). These attractors define the context of the system and, by extension, the rules that govern relationships and the patterns that emerge within the system. For example, in a familiar case Theodore Levitt (1960) describes the fall of the dominant US railroads in terms that suggest attractors. He says that the railroads fell into trouble because key managers defined their business in terms of “railroad” attractors rather than “transportation” attractors. This limited their thinking and they willingly let others serve “non-railroad” customers. The eventual result was that other modes of transportation eclipsed the railroads.

Attractors define the context of various, often competing, framework perspectives. Competing perspectives create complexity within the system and when this complexity reaches a certain level, tensions in the system develop. The tension builds until the system reaches a bifurcation point, a point at which the competing attractors are so strong that the system has the potential to flip from one pattern to another (Gleick, 1987). In some situations, such as in the framework of the railroad executives, the *status quo* attractors are so strong they prevent the system from flipping patterns - in which case the system often disintegrates or develops inertia (Anderson, 1999). In other cases, the new attractors are strong enough to flip the system into new perspectives and this allows the system to be transformed. Note that in this formulation if one wishes to transform a system, it is necessary to transform the framework perspective. Whichever framework attractors the system falls under will ultimately create the context from which system behaviors emerge and system patterns develop (Stacey, 1995).

Dialectical Change

The dialectic represents a different kind of change than that of chaos/complexity theory. Dialectical change is driven by the tension of opposing forces within a state or phenomenon. Each state contains both itself and the seed of its opposite. For example, winter contains warmth, and capitalism contains inequality of income distribution. The tension between the phenomenon and its opposite eventually creates a crisis: either the phenomenon gives way to the opposite, modifying the opposite in the process, or it absorbs the opposite, modifying itself in the process. In either case, the resulting phenomenon or state is different: it is a synthesis of the original and its opposite.

In an influential formulation of this principle, Frederick Engels (1873) applied dialectics to the struggle between class and economic systems. However, his model applies equally well to change in other types of systems. Engels’ outline of the dialectical process has been summarized as follows (Morgan, 1997:287):

1. Phenomena change as a result of either the struggle or unity of opposites. A situation inevitably carries within itself the seeds of its opposite. For example, an innovative computer firm experiences rapid change but also needs stable management systems. Managers need to deliver immediate product results but must also think long term. These states appear to be mutually exclusive, but they are mutually desirable.

Eventually, the tension between the phenomenon and the opposite works against the effectiveness of the original state and demands that the opposite must either be overcome or assimilated. This makes the phenomenon into something else, a synthesis. Thus, in the previous example, the firm would hire professional managers (an act sometimes called “bringing in the grownups”) and slow down enough to develop stability.

2. Dialectic change is evolutionary through time. The idea behind Engels’ “negation of the negation” is that each synthesis contains within itself something of the previous phenomenon and also the seeds of the opposite of the current synthesis. The opposite eventually overcomes

the new synthesis through force or assimilation. The resulting synthesis carries seeds of its own opposite and eventually changes, thus the process of evolutionary change continues. To carry this idea through the example, after the computer firm develops stability, changes in the market force the need for more innovation and speed, so the old, “slow” managers are fired. The firm becomes innovative again, but eventually the venture capitalists demand stable management systems, and a new set of “grownups” are hired.

3. Dialectic change can be revolutionary. Occasionally, the change process reaches a point where the inner contradictions can no longer be contained. When this occurs, the system undergoes a complete, revolutionary transformation, destroying the original system and creating a new system in its place. Our computer firm, for example, may see the need to simultaneously have stability and innovation, the short-term and the long-term view. It changes its perspective from that of a software firm to that of an Internet development firm, changes its name, moves to Hollywood, and becomes an entirely different organization. Whether it is a successful organization is another question.

In both chaos/complexity and dialectic change, the system can experience either internal differences or complete changes of perspective. The causes are different but the result is not. In the next section, we will discuss how the different change forms applied to our experiences as business academics in a great-books program. First, however, we will describe the environment in which the changes took place, the Torrey Honors Institute.

THE TORREY HONORS INSTITUTE

The laboratory in which we experienced change was the Torrey Honors Institute. Torrey, as it is called, is a selective honors track² that fulfills the general education, liberal arts, and Bible requirements for a four-year degree at Biola University. It is named for R.A. Torrey, a prominent scholar and early dean of the university. Students are in the Torrey program for four years but receive their majors from the various colleges. The goal of the institute is to form virtuous leaders and Christian scholars for the 21st century (Reynolds, 1998).

For curriculum, Torrey uses the western classic texts and adds a strong component of Christian classics; students read Augustine as well as Plato, Lewis as well as Locke. They also read through the entire English Bible. The pedagogical approach is “Oxford” style. That is, students read and take extensive notes on the classic texts and discuss them in one or more group sessions. The sessions are guided by professors who use the Socratic method of questioning to draw out the key issues. Discussions are lively and all students are expected to participate. In addition, students attend a certain number of context lectures each semester where they gain background in the material. Each student also has a faculty mentor who works with him or her individually on semester papers or projects (Torrey Student Handbook, 2000 [online]).

The Institute itself constitutes a change from the “normal” general education model, where large GE classes are administered by different departments and schools throughout the university. In Torrey, for example, freshman history, literature, philosophy, and Bible credits are satisfied in one 8-12 credit class. Student and tutor discussion replaces professorial control of class content and syllabus.

Students devote their freshman and sophomore years to developing critical thinking skills, and their junior and senior years to developing integration skills. During the first two years, students take 8-12 credits a semester, professors lead classes, and the focus is on reading, writing, and thinking skills (Torrey Program, 2000 [online]). During the last two years, students take only four credits a semester so they can focus on their majors, and the students take turns

² Approximately one out of two applicants are selected.

leading classes. The purpose of this is to help them learn to lead others. In the final semester, everything culminates into a thesis paper that integrates ideas formed over the years in Torrey with those formed in each student's particular major. Two professors oversee this project – a Torrey professor and a professor from the student's major.

The Institute has developed a strong culture of civility, interdependence, and independence. Professors are called “tutors” to emphasize the interactive nature of the discussions (Torrey Program, 2000 [online]). Students address each other by their last names, and tutors by their academic titles. Strong cohort groups are formed, but people in Torrey are expected to go out of their way to help each other and other students, regardless of their group.

At the same time, personal idiosyncrasies and differences in style are applauded. There are no tests in Torrey; grades are based on participation and papers. Faculty mentors work with each student until his or her paper deserves the grade that the student desires. The semester ends with an interview with the tutor/mentor, which is used to provide specific feedback on the student's work and plans on how to improve in the future. Essentially, a student can get whatever grade he or she chooses, without the levels of stress college students are notorious for.

Each semester, Torrey invites professors from different fields to teach in the program. The purpose is to expose the students to a variety of thinking styles and approaches to the classics. The first author was invited to participate in the program as a visiting tutor from the School of Business in spring, 2000. The second author was selected for the program's first full class of 80 students in 1997.

CHANGE, TORREY, AND THE BUSINESS SCHOLAR

Aristotle observed that change and variation are necessary features of human life (Irwin, 1985). In this section, we will show how the different forms of change affected us as we interacted within the Torrey Honors Institute. For this purpose, we will assume that we, as individuals, are complex systems embedded in frameworks. For example, a professor could be considered to be a complex system initially embedded in the School of Business. Similarly, a student could be considered to be a complex system initially embedded in the context of the American educational system. By thinking in these terms, the issues of personal change become clearer. We will begin this section with a brief overview from each author, then specifically apply the change-types to our Torrey experience.

Professor: Teaching the great classics in an Oxford-style system was a culture shock for a business professor used to “regular” classes. I knew the curriculum would be different – Greek philosophy and English poetry are not commonly studied in business schools. However, the great classics talk about the human condition, and there were many overlaps with the management literature. Leadership in Troy, for example, is not qualitatively different from leadership in Los Angeles. More significant than the curriculum was the difference in pedagogy and culture between the School of Business and the Torrey Honors program. These differences forced me to reconsider the ways that I taught and the ways I interacted with my colleagues. All of the types of changes we have discussed were evident in my Torrey experience. Because of it, I am a different teacher than I was six months ago.

Student: As a student, it was also a culture shock to enter into an Oxford-style program. In the “normal” school culture, students are rewarded by grades, and grades are earned primarily through cramming information and then repeating it on a test. This information can often be discarded as quickly as it is obtained. Motivation to perform well is driven by the desire for scholarships, high standardized test scores, and admission to the best colleges. This culture is carried over into and even intensified in college. More emphasis is put on grades and competition stiffens for internships, jobs, and admission to graduate schools. Making the transition from this

culture to one that discouraged competition and did not allow students to focus on grades was very difficult. It forced me into a drastic change of perspective and priorities. Butterfly, attractor, and dialectical forms of change all took place in my transformation as a student.

Attractor Changes

Complex systems change when they fall under the influence of attractors in the environment. The attractors can force the system behavior into inertia or flip it from one pattern to another (Anderson, 1999). As, metaphorically speaking, complex systems embedded frameworks, both of us originally learned the culture in which we were respectively employed and enrolled. In other words, through observation, reasoning, and trial-and-error, we discovered what activities were successful within the School of Business and in the “normal” university system, and which activities were not. The Torrey Honors Institute created environmental attractors that flipped our attention and the ways we interacted with our peers into new perspectives.

Professor: As a faculty member in the School of Business I am, essentially, a functional expert on a project team. I was hired as a management professor and my colleagues expect me to be an expert in management classes. They do not question my choice of text for a class, they are busy choosing texts in their own classes. They do not expect to me teach my management classes the same way my friend teaches his marketing classes: texts, testing, and pedagogy are different as is appropriate for the different material. Together we are a team, but each of us defers to the expertise of the other. Our interactions in the hall revolve more around school processes and students, and less around class content. For years I enjoyed my colleagues but did not really think about the culture we were embedded in.

The move to Torrey forced me to reconsider cultural patterns. In the Torrey program I was, essentially, a specialist member of a tag-team. All the tutors teach the same classic books using the same Socratic discussion method. Most books are discussed in at least two sessions. Therefore on, say, Wednesday there would be four different sophomore discussion groups, each group in session 1 or 2 of certain books. If I had the first discussion session (1/2) of Ovid’s *Metamorphoses*, I would bring my management perspective to the first half of the book, knowing that on Thursday, the same students would discuss the second half (2/2) with my philosopher colleague, thus getting that perspective. Together we were a team, but each tutor brought his or her expertise sequentially to a common text. Therefore, when we talked together we often discussed the material being taught. Our interactions in the hall revolved more around class content and students, and less around department process.

The differences in these team cultures acted as attractors that flipped my attention to the different possibilities of faculty interaction. When I first started in Torrey, I concentrated on basic civility, on learning to act properly as a guest. Eventually, the framework pattern for tutors emerged and I began to notice the differences between Torrey and my usual framework. Each had positive aspects, but they were different.

Having experienced the new framework, I began to develop personal “system” changes, changing my perspective to incorporate the things I enjoyed about the Torrey framework. For example, I became more serious about participating in cross-school reading groups and seminars. I developed a better ability to team-teach, was more willing to try different teaching methods, and initiated writing papers with colleagues from different functions. I became aware of new ways to meld classes and create synthesis between appropriate disciplines. All of these changes are useful as the higher education industry, itself, goes through drastic changes (Smith & Smith, 2000). My experience in Torrey has forced my heretofore stable perspectives to break into new

and useful frameworks. I have better skills, a broader perspective, and enjoy my colleagues more fully because of this attractor change.

Student: As a student, my role within my peer group in Torrey is starkly different than it ever was before in my academic process. As a complex system embedded in the public school/university framework, my peers and I were threats to each other. I would walk into a classroom at the beginning of the semester, determine who the brightest students are, and do everything in my power to make sure that I got a better grade than they did. Competition was fierce and it was the major force driving me through school.

When I entered Torrey, I had to reconsider those patterns. I had to begin acting as a member of a team seeking a common goal – to know Truth. I knew that I would have an “A” on my report card at the end of the semester, as would a majority of the other students around me. Because the class was centered on what students chose to discuss and not on the professor’s lesson plan, I was dependent on the other students for the class to have any significant value. I did not need to make myself stand out above my peers because there was no benefit in doing so. This took time to learn, but eventually I began to think how my scholarship could best contribute to a discussion. This is necessary in the Oxford-style of teaching. As a result, my grounds for competition were lost, but my grounds for learning were enhanced. For example, imagine a professor assigning an eighteen-year-old student selections from Aristotle and Plato to read, then giving an examination that asks the student to compare and contrast their metaphysical understandings of the nature of reality. It would be a daunting task for most graduate students, much less a college freshman. However, if you take the same selections and allow the students to work through them together over two or three class periods, without the pressure of a test looming, it is likely that significant strides could be made. This situation is further strengthened if the students are guided by tutors who have the training to approach such a complex question. As a result, students gain a strong sense of satisfaction from grasping portions of some of the world’s greatest minds. This sense of satisfaction creates camaraderie and interdependence throughout the class, and ultimately changed my entire perspective on my peers.

My entire life as a student had been spent in one culture, but Torrey acted as an attractor to change the pattern of my behaviors within the academic environment. I developed an interest in theoretical studies of business and management, not limiting myself to the “concrete” and “directly applicable”. I became able to identify and see the value of connections between early century philosophers and modern business scholars. Most importantly, I came to appreciate the value of different kinds of knowledge – not just understanding how something works, but also why it works and how it can be improved.

“Butterfly” Changes

Our Torrey experiences also produced examples of what we have called “butterfly effects” – small, random changes that trigger other changes that eventually lead to disproportionately large disruptions of the relationship nodes within the system.

Student: One example of such a butterfly effect involves the makeup of students in a classroom and how that makeup can affect class discussions. Assume that a class of Torrey students is a complex work-group system and that the students make up the relationship nodes within that system. A typical Torrey class has 16-20 students; the students are encouraged to stay in the same class for all four years. Therefore, they get to know and understand each other and learn to work together effectively. Over time, classes develop personalities – a way of thinking that is slightly different than any other class.

Occasionally, a student has scheduling conflicts and is forced to switch classes for a semester. One new person in a “normal” class would generally be considered a somewhat small

change. However, when this one student's unique ideas and ways of thinking are introduced to a Torrey discussion group, the ramifications can be far reaching.

When an idea is presented in class, there are only two things that can be done with it. It can be dismissed or it can be built upon. Every idea that is built on can, and often does, change the direction of the class discussion. Therefore, one new student introducing an intriguing idea can change the entire direction of the class and the way other individuals in that class view the literature being discussed. For example, this new student may enter a class discussing Milton's *Paradise Lost*, and suggests that Satan should be considered a heroic figure and brilliant orator. The class then decides to take this student's argument and develop it further and eventually finishes the discussion with the strong conviction that this argument is sound and most probable, while another class is systematically arguing that Milton's Satan is nothing but a very articulate coward. These two classes will have a drastically different view of the same literature.

The impact of the new student does not stop there. Students read books from similar periods and genres in the same semester. For example, students may read several Greek classics – Homer, Euripedes, Sophocles, etc. – in a short period of time. When there are common themes in different books, it is usual for class discussions to refer back to them. When such a theme is discussed (i.e. the Greek definition of a virtuous man), a single idea can impact the discussions on all of these books. In other words, one new student has the potential to change the way that I view Greek literature as a whole. Even further, the discussion will influence the way I view authors that are inspired by Greek literature, such as Dante or Shakespeare. So ultimately, one new student in my class has the potential to have a significant impact on the way I view a large amount of the western world's great literature.

One student changing classes represents a small change within the system. However, the change can trigger other changes, cumulatively resulting in a major shift in how the new class views literature and new patterns in the way in which they study it. In the end, the system is entirely different.

Dialectical Changes

In the most familiar formulation of dialectical change, phenomena alter as a result of either the conflict or the unity of opposites. The change can be evolutionary, but if the system contradictions are too extensive dialectical change can result in destruction and transformation. Both of us faced dialectical change when we began to experience the power of Socratic discussion.

Professor: When I agreed to teach in the Torrey program, I expected the curriculum to force dialectical change on me. However it was the difference in teaching style that actually created oppositions. Torrey uses the Socratic method of teaching, that is, classes are driven by open-ended questions revolving around and focusing on the text.

In Torrey, the purpose of discussion is to help the students work through the great issues of mankind: purpose, virtue, truth, justice, wisdom. These issues demand an ongoing process of learning and exploring.

The role of a tutor is to help each student learn to ask the right questions. Tutors are forbidden to make statements of fact (other than brief clarifying statements), so that students will learn on their own and not rely on received wisdom (Torrey Student Handbook, 2000 [online]). Nor is a Torrey tutor expected to use questions to guide to an intended conclusion, though if the students reach a conclusion on their own, that is fine.

On the other hand business students, as a group, tend to be fact-based, dislike theory, and like practical interaction and application (Smith, 1997). Whenever I use open-ended discussion in business classes, there is always a significant group of students who dislike the method. It

“wastes time”, it is “vague”, it is “just repeating the book.” Broadly speaking, business students like to get to the facts without “messaging around”. They want their discussions to have practical application – unclear conclusions frustrate them.

Without realizing it, I had learned to accommodate these learning preferences. Class discussions were kept relatively short and usually centered around a case or application. As professor, I allowed myself to become the key to knowledge, the Person with the Answers. Questions were tools designed to lead to conclusions. In doing this sort of teaching, I short-changed my students and fell into the bad habit of being the “expert”.

Torrey forced me to rethink my *modus operandi*. In order to succeed in the new environment, I had to assimilate an opposite and learn an instructional method that was quite different from my habitual one. It took time and experimentation and frustration before I was even minimally happy with the result. Fortunately, the Torrey students were, on the whole, tolerant of my mistakes and encouraging of my limited successes. Furthermore, they were engaged in the subject and enjoyed the process of learning. Once I began to understand what was going on, I wanted business students to have the same experience.

It was a mistake however, to bring the new style into business classes without first preparing the students. When I tried Socratic discussion in management classes a group of students resisted vigorously, creating ongoing dissatisfaction. I backed off, but the damage was done. In the future, I intend to introduce this excellent learning method into all my classes but with much more circumspection, structure, and preparation – respecting the learning preferences of the majority of business students. Even bright students do not like their expected class culture to change overnight. Dialectic change is useful but assimilating the opposite is sometimes difficult.

Student: As a student, I relied on the “expert” style of teaching from the very beginning. When I was young, I was incapable of figuring out most things on my own, and needed the guidance of my parents and my teachers. As my mind was cultivated and I began to think more on my own, I also cultivated a comfort level for “expert” style of teaching. For the most part, I excelled more academically under teachers using the “get to the facts” style than those opting for less traditional methods. So when I reached college I found myself, as well as my peers, searching out that style of teaching. However, in Torrey it is nowhere to be found.

Working through the great issues of mankind demands an ongoing process of learning and exploring. The process is not completed in four years or any other specific amount of time. The purpose of Torrey is to provide a foundation for developing a lifelong habit of searching out these vital answers. Torrey students discover that there is often no simple resolution to many of the questions about the human condition; they learn to be comfortable with questions that have no answers.

However, this attitude is not learned overnight. It is a long and often difficult process that requires patience and endurance. The questions that have no answers are the ones that we most want the answers to. At first, the initial reaction is to plead with the tutor to just give the answer. Students instinctively seek out the “received wisdom” model that they are comfortable with. When the answers do not come, frustration sets in. I have on numerous occasions seen classes end with students leaving in tears, exasperated and angry.

However, over time the student develops an appreciation for the quest that rivals his or her appreciation for the answer. The key is to never be satisfied with what one knows, and to always press on towards truth of the great issues of man. This can only be done by experiencing the pursuit of truth. Through being surrounded by other students who were developing this same passion and being given just enough guidance to have some successes amidst many failures, I gained that experience. It was completely contrary to anything I had ever done in school before.

Over the past three years, the dialectical experience changed me into an entirely different kind of student. I am now able to be comfortable with different teaching styles. I can better determine what is most valuable from each style and apply it to the other. I am able to listen to lectures from professors and carry them further than they were originally intended. I am able to learn more from a tutor asking questions of the students. I have come to terms with my intellectual limits, which in turn has made me much more comfortable with uncertainty. This dialectical change in myself as a student has caused me to learn in a way that I had never been able to before, and I am a better student because of it.

LESSONS FOR THE BUSINESS SCHOLAR

Our experiences with change led us to some conclusions and insights that may be useful when going through the next, inevitable, change event. In the final section we will present some of those conclusions. We will first discuss lessons we learned from chaos/complexity and end with lessons we learned from the dialectical progression.

Chaos/Complexity

Lesson 1: To change the system, change the context. In a world characterized by momentous change, one must be able to reshape one's thinking in order to maintain pace. But to reshape thinking, one must first reshape contexts. Just as a student's thinking about grades and peers can be transformed by changing academic contexts, so too can other systems be transformed by contexts. Therefore, someone desiring to develop new behaviors and patterns within an organization must first redefine the framework of the organization. This can only be done when the organization develops sufficient internal complexity so that enough people notice the attractors in the new environment. Being alert to new attractors and nudging the system in the desired direction is a useful way to create change.

One of the most effective ways we found of nudging the system in the desired direction is to create experiments and try new things. Experiments bring awareness of new frameworks, and successful experiments create the desire to shift attractor patterns. If change is desired, trying new activities or programs can go a long way in creating a foothold in a different framework.

Lesson 2: Don't ignore the possibilities in small changes. The chaos/complexity perspective suggests that small but critical changes at critical times can trigger major system transformations. If your desire is to change the system, look for critical "bifurcation points". These points often manifest themselves as powerful paradoxes or tensions between the *status quo* and alternative future states (Morgan, 1997). At the critical point, the change agent can help create a new context by finding interventions that transcend the paradoxes or make them irrelevant. For example, many universities find themselves in a tension between distance learning classes and on-campus classes. Torrey made this paradox irrelevant by assuming that context lectures would be acquired in whatever method the student preferred, but discussions and individual tutor sessions would be rich-context face to face communication. At a critical time, the university agreed to the experiment and the result is a dynamic, 21st century program.

Lesson 3: System patterns are not predetermined. They have to emerge. Another insight of complexity theory is that while patterns form in complex systems, the patterns are not predetermined or imposed upon the system. Rather, they emerge from the new framework (Morgan, 1997). In other words, when a complex system flips into a new framework, no amount of attempted control will predetermine the patterns of relationships and custom. It is virtually impossible for anyone to know all the non-linear relationships between nodes.

This suggests that people going through change should suspend their judgment until they can identify the new patterns. Changes may occur quickly but the proper responses to the changes will emerge more slowly. For example, one may dislike the appointment of X as

department chair, but X may eventually prove to be a very good chair. When facing a new situation, it is likely to be more productive to wait until understandable patterns emerge than to move precipitously.

This insight also suggests that it is counterproductive to try to control patterns, as contrasted with bifurcation points. Attempts to direct system changes by forcing certain patterns on them seldom work. Studies of Machiavellians who attempt to manipulate their careers, for example, suggest that their ultimate career success is the same as non-Macs (Christie & Geis, 1970). Patterns may be temporarily forced upon a system, but in just a short time the system will readjust the relationship rules and different patterns will emerge. Insistence on control usually leads to frustration and futility.

Dialectics

Lesson 1: Understand there is paradox in every situation. Deal with it. The paradoxes in a situation are often one of the main forces stalling change (Morgan, 1997). Professors want simultaneously to create dynamic classes, mentor students, write wonderful articles, have time to read, spend time at church, and spend time with family. Students want to have top grades, fun classes, superior learning, and lots of free time. Talk of change only adds more frustration to these frustrating tensions.

The only way to manage paradox is to first acknowledge that every state and phenomenon holds seeds of its opposite. A change will resolve certain tensions but will inevitably create others. A professor may move to a state university to gain time to write but lose close fellowship with students. No system, or life, is ever in a state of permanent resolution, but is only in temporary equilibrium between opposites. For a Christian, this forces reliance upon God Who alone is in permanent equilibrium, and is, therefore, a healthy state to be in. However, it is not a comfortable state to be in.

The second necessity in managing paradox is to understand that both sides of the paradox might be desirable. Students need both fun and learning; professors need both time to think and time to do. However, it is not necessarily imperative to choose between them (Morgan, 1997). By changing the context, both states can be incorporated into the new synthesis. That is, paradoxes are sometimes resolved by moving to a different perspective, framing the situation in new terms. For example, students can discover that learning through discussion can create superior learning and be fun too. Professors can write papers about their recent change experience.

Lesson 2: Change involves destruction. A lesson of the dialectic is that destruction is both a side-effect of, and a cause of, change. There is no change without loss, however minor. New skills replace old, new inventions replace the old, and the old are forgotten.

However, destruction can also be positive. A forest fire will simultaneously kill old trees and open up the ground for new growth. It is easy to resist change but sometimes it is necessary to deliberately destroy the old *status quo* in order to let a more suitable system emerge. For that reason, in a volatile and changing world professors and students should seriously consider opportunities to destroy their current framework. Perhaps they could consider going overseas for a semester, advising a development project, or taking a philosophy class. Deliberate destruction of the old perspectives can lead to new ways of looking at the world that might resolve the ongoing tensions of the dialectic.

CONCLUSION

For both of us the Torrey Honors Institute was a forum and a force for change. Looking at these changes from the perspectives of chaos/complex systems and the dialectic helped us

frame our experience within the management literature. Both the Torrey experience and the chance to reflect upon it has been a valuable exercise. We appreciated the opportunity to make these lessons explicit.

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