The Paradigm Shift in Organizational Research

Yanli Zhang, Montclair State University, USA
Yawei Wang, Montclair State University, USA
William Colucci, Montclair State University, USA
Zhongxian Wang, Montclair State University, USA

ABSTRACT

The creation and development of theory and methods used in the study of organizations is predominantly carried out grounded in the positivist paradigm – epistemological and methodological assumptions similar to those of the natural sciences. This essay looks at the limitations of that paradigm for the study of human organizations and the benefits of relativist, humanist and post-modern assumptions, theory and methods. Limitations of the predominant paradigm are taken up by analyzing basic assumptions – objectivity, generality, empiricism, and linearity. The benefits of a more inclusive paradigm are reviewed in terms of two topic areas: Organizational learning and decision making, and financial markets and price distortion.

Keywords: Decision Making, Financial Markets, Organizational Learning, Organizational Research Methods, Paradigm Shift, Price Distortion

INTRODUCTION

In the Structure of Scientific Revolutions, Kuhn (1996) writes of paradigmatic research and paradigm shifts. It might be argued that organization studies is at the cusp of a paradigm shift away from the current positivist paradigm toward one more inclusive of relativist, humanist, and post-modern approaches. Positivist epistemological assumptions and hypothetical-deductive methods reflect those used in the natural sciences. That approach has substantial weaknesses in social studies.

The weakness of the current paradigm is in the inability to support scholars in addressing vital and challenging questions. New paradigmatic terms are needed to provide for a greater array of epistemological assumptions and research methods capable of addressing a wider set of research questions and theories. Towards this end, we must reflect on predominant configurations of epistemological assumptions, methods and professional practices.

This paper begins that discussion by looking at alternative approaches to predominant assumptions and methods through a review of humanist, relativist, and postmodern approaches to research. In this essay, we will ask the following questions: How would cur...
rent predominant research assumptions in the study of organizations need to change? Which aspects of research methodology that support the current positivist paradigm would need to change? What would a new normal science more inclusive of relativistic, humanist, and postmodern thought look like?

A new paradigm for our field would adopt a more inclusive set of epistemological assumptions and associated research methods. This essay will begin by discussing limitations of the current paradigm in terms of four key aspects: Objectivity, generality, empiricism, and linearity. However, these categories should only be considered as rhetorical devices to structure the discussion. No claim is made as to whether these categories are definitive. Following that discussion, this essay will provide detailed examples of studies that exemplify relativist, humanist, and postmodern approaches.

First, research methodology in organization studies has to include a wider range of notions of truth beyond objectivity. Reflecting the model of the natural sciences, the current positivist paradigm defines scientific truth as a scholarly consensus regarding a particular object of analysis. It assumes that social processes are best understood in terms of general patterns of behavior that remain stable across time and situation. Given that assumption, the best approach is for scholars to bracket or avoid their own subjective perspectives - a ‘value free’ or ‘objective’ orientation. However, relativism, humanism and postmodernism question the understanding of social truth and reality from a transcendental point of view. Rather, ‘truth’ and ‘reality’ are socially constructed, situational, and relative to particular temporal and social circumstances. Reality is a worldview founded upon our particular history, background and social context; and therefore, reality is subjective and relative. The current positivist paradigm assumes that there is one truth which researchers can look for, while relativism, humanism and postmodernism believe that truth is humanly imposed understanding - not immutable structure.

Consciousness is the missing piece in traditional social science research. Social action is held together through consciousness; social systems constitute an interweaving of subjective energies with objective existence. Human beings engage in purposeful action and create symbols such as words, ideas, concepts, opinions, emotions, projections, and beliefs, and respond to them and use them to achieve goals. The analysis of social systems is different from natural systems in that the observer cannot stand apart from but has to participate in and thus necessarily impacting the object of analysis. Scholarly research from this point of view is not only influenced by the social system but also influences that system at the same time. Knowledge is a perspective, and different individuals use different viewpoints to interpret a heterogeneous world (Manuel-Navarrete, 2001). The idea of the scholar as an active interpreting author of knowledge, not just as an outside reporter of knowledge, is not new. Max Weber’s classic ‘ideal type’ methodology (Weber, 1963) is an example of an active interpretive approach to social science. Indeed, this is not a problem that is entirely avoided in the natural sciences - the study of quantum mechanics and particle physics has long grappled with the problem of the act of observation itself changing that which is observed (Faye, 2008).

Postmodernist approaches – sometimes called “Critical Theory” - provide tools for understanding organizations beyond the simple determinism of the natural scientific model (Alvesson & Deetz, 1996; Deetz, 1992; Habermas, 1988; Lyotard, 1984). Postmodernist thought is grounded in the assumption that truth – both for scholars as well as for actors in organizations - is socially constructed. Research is a dialogue – thus inter-subjective – and by definition starting with the values, views and interests of the researcher, not attempting to exclude those things from analysis. Thus, research is not an attempt to form consensus on universally accessible and static objects of study, but situational and interpretive, and thus necessarily pluralistic. Postmodern approaches regard theory as having heuristic value – revealing assumptions, providing tools for reflection. Organization science is a creative and ongoing...
sense-making activity. Studies of organizations from this point of view look for situational truth by examining artifacts, imagery, or metaphors that humans utilize to understand the world. Astley (1985) argues that organization researchers should consider it their task to generate not the true theory, but rather interesting theories that provide information about the complexity and difference in the world.

Second, research methodology in organization studies need to move away from an excessive preference for developing theory of general laws to embracing local theories. One of the major meta-theoretical debates underlying organization research is whether researchers are looking for global or local theories (Martin, 2003). The positivist paradigm reflects the goals of natural sciences, approaching the study of human society in mechanical, causal terms (Donaldson, 2003). In contrast, relativism, humanism and postmodernism question the “grand narrative” (Lyotard, 1988) of which the positivist paradigm is part, i.e., dominant cultural assumptions constituted by the social power and influence of natural scientific reason and knowledge. Instead, they emphasize local narrative or local theory. In a sense, we can say that postmodernism is more interpretive because interpretive approaches emphasizes people’s experiences, the stories they tell, and the collective sense making in the local context (Hatch & Yanow, 2003).

Social systems differ from natural systems in fundamental ways. In physics, different objects of the same type behave in the same way, and the details of context or history which the object finds itself in do not usually influence its behavior. Yet this does not apply in social science in which contextual details are a major factor, and are often quite complex and context specific. In social systems, for many issues there is no sure way of finding a single and definitive answer (Manuel-Navarrete, 2001).

There is a predominant preference for generality as grounds for social scientific truth in organization research. Many researchers such as Pfeffer (1982) advocate a model in which organization researchers strive for consensus of constructs and problems. The goal is to work on these common problems, to resolve disputes and build the stock of knowledge in the field. This focus on objectivity and mutual consistency is actually based on the positivist assumption of the existence of objective truth in social science, and rooted in the idea that social science should be based on the same paradigms and methods employed in the natural science such as physics. It is essentially an unattainable goal given the nature of organization studies, because it has misrepresented what a social system is.

The positivist approach encourages methodological individualism – reducing the object of analysis to individuals and their attitudes. Individuals are embedded in complex social and cultural structures and processes. As Aristotle argued, “Man is a social animal”. Therefore it may be that social studies must focus on the social rather than the individual level of analysis. These situational, complex structures of behaviors, interactions, and use of symbols – organizational culture, ritual, and narrative - might be vital in understanding outcomes. Individual attitudes might be a function not only of that person and his or her personal history, but of a position in a social network. For example, social network analysis investigates whether those in “linking” positions between unrelated groups might garner advantages as a communication broker or feel emotional stress in managing relationships with conflicting others – the ‘multiplex’ quality of a social network position (Wasserman & Faust, 1994).

Third, the hyper-empiricism in current organization research has to change and be replaced with more flexible research methodology. Theory testing has become the most predominant part of research over the years, which has encouraged incremental theory refinement rather than theory generation. Qualitative research such as case studies and interviews are deemphasized and marginalized.

Qualitative research is marginalized by the current preferences for positivist and hypothetical-deductive approaches in pedagogy of graduate programs, hiring criterion and advancement decisions. The result is that
the field is unable to adequately address a wide range of questions that many students of human organizations find most compelling. Further, scholarly work in the field is limited to serving a small range of outcomes, i.e., knowledge that provides for description, prediction and control. It encourages theory, and thus scholars and students, to view organizations from an instrumental point of view – in terms of technical problem solving. It fails to produce heuristic knowledge that could be informative regarding the complexity and situated qualities of human organizations. Knowledge that provides challenges to assumptions and reveals levels of conflict, interests, power and diversity of understanding in organizations is wanting. This leads to a poor and misleading understanding of human organizations (Deetz, 1992).

The way the current positivist paradigm goes about testing theory is through the so-called hypothetical-deductive model. This mimicry of the natural science methods has developed into a mechanical procedure, in which hypotheses are generated, measurements devised, and data analyses conducted. The need to follow the procedures has the advantage of a well clarified and shared discourse, facilitating dialog among researchers from a wide variety of backgrounds and institutions, and building knowledge over time. Yet, that approach is also sort of a straightjacket (Bettis, 1991) that prevents researchers from working on their most passionate ideas and research that cannot be addressed by the preferred theory and methods of the positivist paradigm.

A new paradigm will give equal preference to both types of theories - the general, quantitative, precise frameworks of positivism and the rich, vivid qualitative research such as that found more in the fields of anthropology, history and institutions. Even though these studies are not generalizable, are incommensurate, and do not lend themselves as tools of prediction and control, they provide valuable opportunities for the study of organizations. Scholars can pursue development of theory that can serve a wider array of values or outcomes, and they can do that using a wider array of methods. The promise of these approaches is to encourage social scientists to offer a better understanding of social context, as well as the multiplicity of relevant points of view. Scholars can expand theory from that those that are useful for description, prediction and control to those that are useful in heuristic terms, as well as those that might help further the ‘good life’ of organizations (i.e., deliberation over values) (Brown, 1987).

Current positivist research methodology emphasizes larger samples, since this generalizability is signified by the statistical power that depends on sample size. The consequence is to limit research to objects of analysis where it is convenient or practical to gather large, random samples. Study of phenomena that cannot be easily or largely addressed by statistical methods is ignored (along with the practice and use of methodologies appropriate to those approaches, i.e., qualitative research methods). This has sacrificed the richness, thickness, or depth of the information and insights generated by research on organizations.

It is necessary to move towards a set of practices in our field in which we equally value qualitative as well as quantitative studies. We need to adopt research methodology that pays more attention to interpretive and naturalistic studies capable of providing information about complex situational factors of particular organizations, alongside research dependent on a large sample size and providing for generalizability. We need to do more ethnographical studies and grounded theory building that can help us uncover the complex processes and mechanisms. In other words, the new relativist, humanist, and postmodernist approaches call us to do more emic as well as etic research.

Furthermore, organizational theories should be produced using language and terms with a greater ability to speak to organizational actors. Positivist theory uses an abstract and obtuse language of statistical methods and highly technical terms and concepts. The abstraction of the positivist theory limits its accessibility and thus utility to inform organizational actors. Relativist, humanist and postmodern approaches can draw on interpretation of social
actor concepts, as well as speculative and not just empirical theory. For example Senge’s (1994) work using general systems theory has been widely read by organizational actors as well as in academia.

Fourth, we need to go beyond the linear models and adopt more of complexity of thinking and modeling in our research methodology. The assumptions of the positivist paradigm limit theory to linear, analytic thinking. It is preferred for objects of analysis that are predominantly subject to deterministic, causal and static patterns. However, many - or perhaps most - objects of analysis in the study of human organizations involve phenomena that are not linear, static, or deterministic. Many organizational phenomena involve complex interactions among many actors, and are essentially dynamic processes with feedback effects. The outcome, therefore, is path dependent, unpredictable, and uncontrollable. Dramatic changes can occur unexpectedly, and small initial change can have explosive results (Levy, 1994). For example, Perrow (1984) illustrated how accidents are inevitable in certain high-risk and tightly coupled systems, such as might be important in the case of nuclear power plants, or NASA projects like the Space Shuttle.

Current organizational and social research is dominated by linear models, mostly regression models, in which we can predict the dependent variable from a combination of certain independent variables. In many circumstances, such as studying the evolution of industries in strategy, this has become too simplistic, not informative, and even misleading. To better capture the complex dynamics of the world, rather than mechanical models, a new paradigm would emphasize biologically based models - such as neural networks - that can capture the dynamic aspects and the complex interactions among many actors. We need to focus more on the study of community, networks, relationships, patterns, adaptation, and disorder. For example, there has been an increasing use of applying neural networks to model and gain more insights in the study of organizational phenomena.

Adopting a more appropriate paradigm can greatly help researchers increase the scope, relevance, and creativity of their research (Jick, 1979). As organizational research shifts towards a more inclusive paradigm, organization research methods need to change correspondingly to support a new normal science based on relativistic, humanistic, and postmodernist thought. In the following sections, we illustrate the above themes with two concrete examples in organization research. We will give an example of organizational learning and decision making and an example of financial markets and price distortion. These examples will illuminate the focus of a new paradigm for organization research, detailing how it shed new light on the study of organizational phenomena.

ORGANIZATIONAL LEARNING AND DECISION MAKING – THE ROLE OF BOUNDED RATIONALITY, EVOLUTION AND ROUTINES

In this section, we would like to show an example of how we can shed some new light on the study of many organizational phenomena, such as organizational learning, decision making, and innovation from a more evolutionary perspective, which recognizes the bounded rationality of humans and organizations and the critical importance of routines in that evolution.

Bounded Rationality

One of the key assumptions under the new paradigm of organization research is bounded rationality. The basic premise of bounded rationality (Simon, 1955, 1957) is that the world is too complicated for an individual or organization to comprehend. Under this view, organizational theories are decidedly local rather than global in nature, bounded by the relevant time, space, and the limited rationality of people and organizations in question. Herbert Simon (1955, 1957), who won the Nobel Memorial Prize in Economic Sciences in 1978, suggested that individuals are hardly capable of the kind of
optimization that neoclassical economics thinks rational human beings do. Instead, because optimization is costly and humans are limited in their computational abilities, they more often use heuristic rules and engage in something he called “satisficing”, making choices that are satisfactory rather than always searching for the best.

Yet, what determines the point at which an individual stops optimizing and reaches a satisfactory solution? Lo (2004) argues that an evolutionary perspective provides the missing ingredient in Simon’s framework. Such points are determined not analytically, but through evolution, trial and error and, of course, natural selection. Individuals make choices based on experience and their best guesses as to what might be optimal, and they learn by receiving positive or negative reinforcement from the outcomes. In this process, individuals develop heuristics to solve various economic challenges, and if those challenges remain stable, the heuristics might eventually adapt to yield approximately optimal solutions.

For example, the garbage can model of organizational decision making proposed by Cohen and March (1972) is a vivid description of bounded rationality and the local nature of organizational decisions. It describes how organizations find solutions to their problems as “whether or not a decision happens is because of the ‘temporal proximity’ of what streams into the garbage can; that is, a decision happens when a suitable collection of problems, solutions, participants, and choices coincide. When it does, solutions are attached to problems and problems to choices by participants who happen to have the time and energy to do it.” We can see that the garbage can model showcases the localness and irrationality involved in decision making. Organizations, like humans, are not omniscient. Although they try to plan and strategize, there are serious limits to what they can plan ahead, due to the bounded rationality, in spite of their intent to be rational. Therefore, what organizations actually do most of the time is responding to the problems and crises that are being presented to them, as the garbage can model depicts.

Although the garbage can model depicts a deplorable picture of organizational decision making, we need to realize this element of irrationality is not necessarily a bad thing. Some salt of irrationality is a necessary and healthy element. As argued by March (2006), decision making needs scope for foolishness. Playfulness is a deliberate (but temporary) suspension of the normal rational rules so that we can experiment. We need to play with foolish alternatives and inconsistent possibilities. Organizations require both fire fighting and planning. Although it seems that organizations are not doing a good job by responding to the problems and crises rather than preventing them, this is actually an efficient way to recognize the right priorities. During the planning process, organizations may think they have captured the priorities, or more often, they may be at a loss about what the priorities are. The environment, in presenting problems and crises, are bringing out the priorities and making them salient to the organizations. Therefore, the normative implication of the garbage can model is a focus on emergent strategies rather than stringent planning, with an understanding of evolutionary process of organizational decision making. This brings us to our next key concept in the study of organizations – evolution.

Evolution

The evolutionary view of organizations is most prominently associated with Nelson and Winter (1982). Nelson and Winter’s evolutionary model emphasizes many processes familiar to sociologists, such as incremental change and gradual adaptation. Evolution, though, is not a new idea; sociologists have talked about organizations as organic/ecological/adaptive systems for a long time. The concept of evolution and this analogy to biological systems gives us a deeper appreciation of the complexity of organizations in conducting organization research. The evolutionary view paints a picture of Schumpeterian competition among organizations. There are winners and losers in Schumpeter’s “process of creative destruction”, and much of it is not
determined mainly in ex-ante calculation, but largely in ex-post contest (Schumpeter, 1991). An element of irrationality is inevitable in evolution. Similarly, institutional school sees organizations as analogous to organic/biological/natural systems subject to unplanned adaptations. The idea of an organization as an organic, growing, declining, evolving whole, with a natural history, points to the importance of unplanned adaptations and changes. Unplanned aspects of organizations are those that are subject to little administrative control and are often not even noticed until their effects are quite evident, like in the evolution of species.

An evolutionary view carries important implications to the study of many phenomena in organizations. Evolution implies diversity, heterogeneity, and local suitability rather than universal optimality. For example, in the area of knowledge, organizational learning and innovation, the evolution view recognizes that knowledge is heterogeneously distributed among different organizations. This recognition of the heterogeneity of organizational knowledge naturally leads to an emphasis on organizational learning and innovation as key to competition among organizations. The evolutionary context is a context in which people and organizations (or entrepreneurs as in Schumpeter’s characterization) have possession of different knowledge and therefore different views about what kinds of innovations would be possible and desirable, and would lay their bets differently. It is also a context in which people and organizations strive to learn in order to have superior knowledge and better innovation than their competitors.

Therefore, the evolutionary view can be appreciated from two horizons: both from a cross-sectional or time horizon. When seen from a cross-sectional horizon, we see that evolution involves heterogeneous knowledge among organizations. In addition, if we regard it from a time horizon, we see that the evolutionary perspective is inherently a dynamic perspective, and learning is essentially dealing with change. The evolutionary perspective depicts a dynamic competitive ecology within which firms compete primarily through a struggle to improve or innovate, and much of it through organizational learning.

Another important implication of the evolutionary view to organization research is that it calls for an emphasis on the study of institutions and environments and how organizations interact with them. How to deal with the environment has been a central concern in organization theory, and many theories that came up all have an evolutionary element to them. Tom Burns promote the organic organization as opposed to mechanistic organization, which can continuously adjust and adapt to unstable conditions and deal with new and unfamiliar problems (Burns & Stalker, 1994). James Thompson portrays organizations as open systems having to achieve their goals in the face of uncertainty in their environments (Thompson, 1967). Michael Hannan and John Freeman (1989) take an ecological view of the chances of organizations surviving in their particular environments.

Routines

Key to the evolutionary view of organizations is the concept of routines. Routines are a central element in Nelson and Winter’s (1991) evolutionary model of organizations. Routines are an organization’s set of ways of doing things and ways of determining what to do. They are managerial and organizational processes, and patterns of organizational activities and learning. Routines illustrate how evolution takes place in a micro-practice level and the mechanisms at work. The notion that organizations have different routines decidedly runs against the neoclassical economic view that all organizations are alike and they make optimal choices. Evolution itself implies not being optimal. Routines allow us to see the institutional complexity of Western market-based economies and rather than just as simple choice problems subject to common and known constraints, to see a context of Schumpeterian competition rather than equilibrium. The reason for these is that copying the routines and process of other organizations is notoriously hard.
Routine is a central concept in evolution and organizational learning, and is closely related to other concepts such as tacit knowledge, knowledge transfer, organizational memories, dynamic capabilities etc. Organizational knowledge generated by learning activity resides in routines. Knowledge is embedded in routines, and thus knowledge must exercised or used in order to be useful – the concept of actionable knowledge. Organizational routines are also critical to organizational memory, because organizations remember by doing. Routines are the skills and capabilities of an organization, and the constant adaptation and evolution of those routines are central to the dynamic capabilities (Teece, Pisano, & Shuen, 1997) of an organization.

Reflection on or deviations from existing routines may lead to innovation. Argyris (1993) points out that organizational defensive routines are anti-learning. Nelson and Winter (1991) says, “Routines provide the occasion, paradoxically, for innovations. Without routines one cannot detect the trouble that falls outside of the routine.” These two views may look contradictory at first glance but in fact, they are not. As Nelson and Winter (1991) points out, to view firm behavior as governed by routines is not to say that it is unchanging. Sticking to past routines is anti learning and innovation, while constantly re-examining and updating routines is pro learning and innovation.

In conclusion, bounded rationality, evolution and routines are concepts that emphasize that theories and truths are local rather than universal, dynamic and static, varied rather than uniform. Paying more attention to these concepts in organization research have important implications in the study of many organizational phenomena such as organizational decision making, organization and environment, organizational learning, knowledge and innovation, etc. Adopting the thinking that these concepts imply will lead to a better appreciation of organizations as essentially heterogeneous, dynamic, evolving entities, with different routines, constantly interacting with the environment, with their successes determined by both ex-ante calculation and ex-post unplanned adaptations.

FINANCIAL MARKETS AND PRICE DISTORTION: THE ROLE OF HUMAN BEHAVIOR, NETWORKS, AND COMPLEX INTERACTIONS

In the previous section, we have seen that bounded rationality and evolution dictates local rather than global theories in the study of organizations. In this section, we would like to give one example about the financial markets. Financial markets can be regarded as a self-organization made up of investors and various market participants. The dominant theory in the study of financial markets are currently the neoclassical general equilibrium theories such as efficient market hypothesis and rational expectations theory, which claims that individual investors form expectations rationally; markets aggregate information efficiently; and equilibrium prices incorporate all available information.

In this section, we will illustrate how financial markets, like other human organizations, are also socially constructed, thus asset prices can be subjective and biased, sometimes even to a great extent. We will show that individuals are not necessarily rational, markets are not always efficient, and equilibrium prices do not necessarily incorporate all available information.

Human Behavior

Behavioral economics and finance have emerged as a useful perspective to explain many of the phenomena that equilibrium based theories such as efficient market hypotheses cannot explain. Although the predominant theories in the study of financial markets are still theories such as efficient market hypotheses, more and more people have realized the fallacies of these theories. The efficient market hypothesis claims that stock prices tend towards equilibrium; deviations from the equilibrium occur in a random fashion and are attributed to extraneous shocks. However, in reality, asset prices are often distorted and do not always reflect the underlying fundamentals as in efficient market hypothesis. Behavioral finance realizes
that human behavior is a main factor in how markets act. Since it is the actions of investors whose buy and sell decisions move prices up and down, any price movement has ultimately to be traced back to the behavior of investors.

Stock prices are subjective and constructed by humans, rather than accurately reflect objective reality. In the area of social phenomena, meanings emerge through people’s imposing associations (Arthur, 2000). Social data such as stock price have no inherent meaning; they acquire meaning by our bringing meaning to them. Moreover, different people, with different experiences, will construct different meanings. Thus, the meaning that is abstracted from the stock price is not an objective reality; it is in the mind of all the market participants, an aggregate picture of people’s outlook for the stock in question.

Market participants are invariably subject to bounded rationality and their different circumstances and thus differ in their constructions of asset prices. Rational expectations theory, which is a basis of financial economics as currently taught in universities, think that there is a single correct set of equilibrium expectations reflecting all relevant information, and people’s views will converge around it. In reality, investors often have time constraints and could not gather and research all the relevant information available, and thus they have to make their decisions in conditions of limited information and uncertainty, not to mention their personal biases, emotional quirks, social influence, etc.

Psychologists have documented many behavioral biases or irrationalities that are prevalent in human decision making under uncertainty, such as overconfidence, regret, loss aversion, and social herding. All of these cause distortions of reality as reflected in the price distortions. Thus, the behavior of financial markets results from an aggregation of varying attitudes toward risk, the heterogeneity in the framing of information, cognitive errors, self-control and lack thereof, different ways of financial decision making, and the influence of mass psychology (Sornette, 2002).

Evolution

From an evolutionary perspective, behavioral biases, rather than being regarded as irrational, is a kind of suboptimal behavior when heuristics are taken out of their evolutionary context and fail to adapt to the changing environment. Many of the examples that behavioralists cite as violations of rationality—loss aversion, overconfidence, overreaction, mental accounting, and other behavioral biases—are, in fact, consistent with an evolutionary model of individuals adapting to a changing environment via simple heuristics. Within the evolutionary paradigm, people use simple heuristics to help them make decisions more efficiently, but when environment changes, the heuristics may not adapt as fast, which lead to behavioral biases. Given enough time and enough competitive forces, any counterproductive heuristic will be reshaped to better fit the current environment. The dynamics of natural selection and evolution will also play a role in the adaptation of heuristics over time (Lo, 2004).

The Adaptive Markets Hypothesis (AMH) proposed by Andrew Lo (2004) is based on some well-known principles of evolutionary biology (competition, mutation, reproduction, and natural selection). In this framework, prices reflect as much information as human beings are capable of handling, constrained by the environmental conditions, and depending on the competition between the different ‘species’ in the economy. Based on evolutionary principles, the Adaptive Market Hypothesis implies that the degree of market efficiency is related to environmental factors characterizing market ecology such as the number and nature of competitors in the market, the particular culture and institutional environments, and the adaptability of the market participants.

Rather than the invariable equilibrium predicted by the Efficient Markets Hypothesis, the Adaptive Markets Hypothesis implies considerably more complex market dynamics. In this paradigm, the EMH may be viewed as the frictionless ideal that would only exist if there
were no market imperfections such as transaction costs, institutional rigidities, and limits to the cognitive abilities of market participants. Adaptive Markets Hypothesis, being evolutionary minded, is able to take into account irrationalities in human psychology and the complex situation of competitive landscape and social environment. Thus, it is able to better explain trends and cycles of disequilibria such as panics, manias, bubbles, crashes, and other social phenomena that are routinely mirrored in natural ecologies.

Networks and Complex Interactions

We are all aware that herding behavior is one of the major reasons underlying financial bubbles and busts, including the recent financial crisis. Herd behavior and imitation has always been prevalent in the financial markets, because people often rely on word of mouth and stock tips to evaluate a stock, since it is very hard and time consuming to gather all the information regarding the fundamentals of a stock. Investors in the stock market interact by belonging to a network of information transfer. For example, a professional trader or money manager typically calls half a dozen to a dozen or more friends or colleagues to share information, to share the sentiment of the market, to exchange their moods. Similarly, individual investors also have their own networks to share information. They also are influenced by information spread through the media. It is through this network of interactions that a collective behavior develops (Sornette, 2002).

From an evolutionary point of view, people herd not because they are stupid, but because it might be rational to do so. Theories show that when you lack information, it becomes rational to herd, to imitate your neighbor because his behavior may contain useful information that you don’t have. Only the highly intelligent animals imitate, like apes or chimps, dolphins and a few birds know how to imitate. This is actually one of the most important and most powerful ways of learning, and babies and children learn from imitating. Thus, imitation is a high cognitive level of learning for humans, which is why it is wired very strongly in our brains (Sornette, 2002).

However, even though herding is to some extent a rational behavior in a situation of lacking information, when interacting with the social institution of the financial market, they can create powerful positive feedback mechanisms, which put the financial markets in a very unstable situation. Through this positive feedback mechanisms, mispricing can get positively reinforced among people, setting in motion a dynamic process that creates financial bubbles and busts (Sornette, 2002). These imitations are based on the belief that the higher (or the lower) the price or the price return in the recent past, the higher (or the lower) will be the price growth in the future.

As Soros (1994) has pointed out, financial markets can be reflexive in that not only human behavior can cause mispricing of financial assets, mispricing of financial assets will further influence human behavior, which leads to a positive feedback loop and can be dangerous when carried too far. Sornette (2002) argues that extreme cases of positive feedback may lead to a remarkable cooperative phenomenon, in which the market can suddenly ‘solidify’ a global opinion. It is a time of order, when everybody agrees, and there are few or no dissonant opinions. These kinds of positive feedbacks, when unchecked, can produce runaways until the deviation from equilibrium is so large that other effects can be abruptly triggered and lead to ruptures or crashes.

History is no lack of examples of bubbles. They include the Dutch tulip mania from 1634 to 1636, England’s South Sea Bubble of 1720, the U.S. stock market crashes of October 1929 and October 1987, the Japanese real-estate bubble of the 1990s, the U.S. technology bubble of 2000, and the most recent financial crisis of the decade. These examples, and many similar anecdotes of speculative bubbles, panics, manias, and market crashes— show that the forces of irrationality can dominate the forces of rationality, even over extended periods of time (Kindleberger,
have cast reasonable doubt on the hypothesis that an aggregate rationality will always be imposed by market forces.

**CONCLUSION**

The rules of quality governing social science need to change. The current paradigm puts an excessive emphasis on quantitative research and generalizable theory, and away from qualitative research and experience—thick theory. We need to question this preference for quantitative methods, mathematical formalisms and statistical rigor in order to build and apply the most useful theories for specific contexts.

Social researchers have always envied the clarity and objectivity of the natural sciences. That is why social studies have been pursued as a ‘science’, a word that conveys enormous social power. The “grand narrative” (Lyotard, 1984) of modern culture has been the story of celebration and admiration of the natural sciences. Public, political and institutional support is needed to secure resources for research – public and private financing of higher education, research grants and endowed chairs. Social studies in academia have attempted to gain social status, relevance and sources of institutional support by modeling assumptions and methods of the natural sciences—the ‘positivist’ paradigm. This reflects a relationship between general cultural and institutional bias for the natural sciences and the types of theories and methods used in social studies. Scholarship does not stand apart from society, but is embedded in specific social and cultural structures and histories (Bourdieu, 1983; Deetz, 1992; Gould, 1981; Habermas, 1973, 1988). To practice scholarship that is less entangled in social, cultural and political biases, it is necessary that scholars reflect more on their own historical and social place in society – i.e., on the history and sociology of academia in society (Mannheim, 1985; Gouldner, 1976). Without that reflection, researchers may unwittingly undermine scholarly assumptions of objectivity, value-neutrality and the general social utility of scholarship (Habermas, 1988). It is important, therefore, for scholars to reflect on paradigms of research in order to pursue new theory and provide a wider range of perspectives.

Is social science suited for the same methodology as in natural science? A fundamental question for social researchers is the meaningfulness of research they engage in. Social philosophers such as Dewey and Habermas (1988) have long argued that the logic of social explanation is pluralistic and eludes the “apparatus of general theories”. Social theories are “situated truth” and path-dependent: The cultural foundations and social institutions of life are important; and the time or stage in their evolution matters. Thus, the most fruitful approach to social knowledge is to acknowledge that a variety of methods and theories have their ‘relative legitimacy’ and try to bring them into relation to each other under one roof. Perhaps it means emphasizing use of combinations of approaches, i.e., ‘triangulation’ (Jick, 1979) or the “mixed methods” approach (Denscombe, 2008).

Inductive approaches help to build qualitatively new theory. Positivist deductive theory building tends towards granular and incremental improvements on existing theory. The current paradigm focuses research disproportionately on general, top-down theory. The field of organizational studies needs to encourage the practice of more inductive, bottom up approaches in order to produce new and compelling theory. We need both types of theories, the theoretical quantitative, precise frameworks and the rich, vivid qualitative research like in the studies of anthropology, history and institutions. Studies providing knowledge that is not generalizable nevertheless can help create new theories and new sets of hypotheses. Further, interpretation of generalizable theories without examination of rich, complex contexts might be premature. It is not until we can seamlessly integrate theory and vivid pictures—theory and experience—that we create theories that can more fully inspire and challenge scholarship (Arthur, 2000). With this respect, social science can be seen as similar to art to some extent. The artist has to look inside to express or project aspects of the objective world, and taking a particular, unique perspec-
tive is important in generating new knowledge (Manuel-Navarrete, 2001). There are many theoretical and methodological approaches in a new paradigm that could be taken up by scholars of organizations and play an important, productive role in research. For example, social network analysis and theory (Burt, 1983; Wasserman & Faust, 1984) can be very useful in shedding light on how human networks behave and how contagion within networks can create phenomena such as the big housing boom and then the market collapse and financial crises. Another example is complex adaptive theory is useful to study the complex interactions among people, and how organizations adjust and adapt to the environment. Behavioral finance/economics can be useful to provide insights into human social phenomena inevitably governed by human psychology.

We need to be open to and seek out new tools to help us do the kind of research needed for the new paradigm. Theories of fractal mathematics and chaos science can be developed using powerful new computers and programs, capable of simulating complex interactions. These programs can help us create simulations of reality by setting and changing the variables and the connections among them. This will help us expand our thinking and make discoveries of new or perhaps surprising knowledge from a new inductive approach (Manuel-Navarrete, 2001).

Finally, a more inclusive paradigm would need to be constructed by greater preference and rewards for students and scholars that pursue theory and use methods of relativist, humanist and postmodern approaches. Scholars pursuing that research should be encouraged and rewarded through hiring and promotion practices. Pedagogy in graduate programs should emphasize these approaches more. Finally, journals should call for more of that type of research. This essay is hopefully one step in the dialogue that will move the field in that direction.

REFERENCES


Yanli Zhang is currently an Assistant Professor in the Management and Information Systems Department at Montclair State University, NJ, USA. She graduated with a PhD in Management from Rutgers University, USA in May 2007, concentrating on strategy and international business. Her research interests focus on topics of knowledge, networks and innovation. She has a BA in International Economics from Beijing University, China. Prior to obtaining her PhD, she worked as an Economic Analyst in the Ministry of Foreign Affairs of China, and a Management Consultant in Accenture Beijing.

Yawwei Wang is currently an Assistant Professor in the Department of Marketing at Montclair State University, NJ, USA. She holds a PhD in Recreation and Tourism from Clemson University, SC, USA. Her research focuses on travel and tourism, with emphasis on mature tourism and ageing issues. Her teaching interests include introduction to marketing, introduction to leisure and tourism, behavioural concepts in leisure and tourism, and research methods in leisure and tourism. Prior to joining Montclair State University, Wang worked with the Gerontology Research Interdisciplinary Team in the College of Health Education & Human Development at Clemson, SC.

William Colucci holds a PhD, Communication, 2003, Rutgers University, New Brunswick. His dissertation examined social network ties as a factor in information system implementation outcomes. His research interests include hybrid distance education learning, socio-technical factors in organizations, social networks, and technology in culture.

Zhongxian Wang is a Professor at Montclair State University, NJ, USA. Professor Wang teaches operations analysis, production/operations management, decision support and expert systems, business statistics, operations research and management sciences. He is a member of the Institute for Operations Research and the management Sciences (INFORMS), the Information Resources Management Association (IRMA), the Decision Sciences Institute (DSI) and the Production and Operations Management Society (POMS).