INHERENT CHAOS IN THE ORGANIZATIONAL ORDER: AN EPISTEMOLOGICAL APPROACH

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─Abstract ─

Traditionally management and organization studies have an assumption of control with a linear understanding since the beginning of "scientific management". Either academic or popular publications create an illusion of control over organizations, managerial procedures or people with the representations of "management". As a challenge to traditional view, chaos theory in management and organization studies suggests a new perspective. Keeping in mind the influence of nonlinear approaches, this study aims to confront epistemologically the neglect of the nature of chaos and order dialectics for further explorations of management and organization theory.

Key Words: *Management and Organization Studies, Epistemology, Chaos Theory*
JEL Classification: M10

1. INTRODUCTION

There are many different approaches in evaluating the social and organizational reality of today. Regardless of the differences in basic assumptions of approaches, one thing is common in most of them; the reality of today is defined as chaotic (Baofu, 2007). Basically; chaos can be defined as the absence of order, human psyche has a natural enmity against such a condition. Even though there are some people who desire chaos, majority of the humanity tries to bring order to chaos or at least avoid it. Parallel to this tendency; societies and their structures are bastions of orders that are trying to keep the chaos at bay. As a fundamental structure, organizations help to maintain order. Management is the main tool used for maintaining this stability. Vision formulations and their organizational applications, organizational activities and control systems are all actions towards stability (Stacey, 1992; Priesmeyer, 1992). When we look at the concept of management, we see management is like a magical concept that can be associated with countless irrelevant and sophisticated concepts, applications or any social fads. Today, it is very common to see "stress management", "quality management", "time management" or "relationship management" in popular or academic publications in addition to hundreds of similar usages. Accordingly, such usages provoke a notion that if something is manageable then we potentially have control over it. We can determine our constraints, plan our resources, and intervene in the processes in order to manage whatever it is (say quality, time or even corporation). With management, there is an assumption that you can play on different variables in order to create a final effect that would be beneficial to you. This is also valid for the general mentality regarding management in organizations. You do not just manage your employees but also you are able to manage organizational culture, change or even conflict.

In this study, rather than "management as profession" which is also very related to our topic, "management as a representation" is taken into consideration. This general understanding of management, particularly in organizations, is interrogated and criticized by examining its basic assumptions of control with a linear philosophical understanding. The paradigmatic change in natural sciences in the end of 19th century formed a new way of thinking regarding natural events. For instance, today linear understanding based on Newtonian physics is not sufficient enough to explain the world (e. g. the nature of subatomic particles). Kuhn exhibited how paradigms shifted in natural sciences as a result of scientific revolutions (Kuhn, 1962). However, the management theory as a branch of social

science is still deemed in linear terms whilst admitting the incredibly higher amount of variables in managing/studying organizations. In order to confront this reality, this paper focuses upon the historical representations of the management theory and its relationship with control. Following that, non-linear dynamics and chaotic nature of the management and organization is discussed with a philosophical perspective. In the end, this study provides a different direction to look at the intrinsic source of chaotic force in an organization. Epistemological approach of this study will give the power of a tool for using the philosophical approach for identifying basic truths. Because without the identification of the basic truths, approaches for dealing with chaos only touches the surface of the problem, in depth examination will be missing.

2. MANAGEMENT THEORY AND HIDDEN ASSUMPTION OF CONTROL

Management, as a general concept, has always existed since the beginning of the humanity. The first civilizations were managed, the primitive clans were managed, and the armies were managed as there were some leaders who planned the future of the followers, led others for reaching aims, coordinated people, implemented policies and realized huge constructions. Since the ancient times there have been relations of superior-subordinate, persuasion, direction and administration in addition to such actions (George, 1972; Starbuck, 2003; Wren, 2004). However, all these actions or relations were not considered as "management", at least they were antecedents of modern management principles that functionally helped survive, fight or show faith as a tribe, nation or civilization.

It was late 19th and early 20th century that management became a sort of scientific activity under the shadows of industrialization (Scott, 2004: 2). An industrial engineer, Frederick Taylor, published results of a study that was based on time-motion measurement of the workers and arranging working conditions according to such measurements for the sake of efficiency. The name of the book was "the principles of scientific management" (Taylor, 1911). The profession of the book author and the aim of the book demonstrated how pragmatist management might be with a "scientific" discourse. That brought management the idea of calculability, measurability and efficiency in order to rationalize the activities concerning management as a result of industrialization (Morgan, 2006; Perrow, 1986). Therefore, the discourse of rationalization, standardization or efficiency in management was a natural result of engineering roots (Shenhav, 2003). Within this context, the main philosophy behind scientific management was to control the

behaviors of the workers in favor of management (Copley, 1923) at the shop-floor level. At this point of birth, the modern management theory had gained a childhood disease, the belief in orderly nature of the universe, and a tendency to ignore inherent chaos in the organizational life. Taylor's ideal was an engineering ideal transferred to human life in organization, so it had problems due to chaotic nature of the humans. It's a fact that scientific management provided a boost in production of the businesses that implemented its principles. But there was something wrong. It is like an automaton paradise, the mechanical constructs are seeming to work in perfect harmony, but in the shadows chaotic elements were waiting. Soul was missing in the management.

As time passed time-motion measurement and arrangement obsession were challenged by the human relations school in history of the management thought. The management would not just mean measuring the time/motions but also understanding the human nature including emotions and motivation in the organizations .Now the automatons gained a depth, a human existence. They were not mechanical constructs, they were humans in flesh and blood. But the recognition of this fact was not enough. Because this recognition didn't bring an emancipation of humans in organizations, contrarily it brought a new challenge for creation of order, main tool became controlling workers psychologically (Bruce & Nyland, 2011). This time emotional aspects were included and seeds of a new academic field – organizational behavior – was spread. Aspects of human existence such as personality and motivations were seen as elements that should be controlled by the management. But the problem is even though the emotional aspect seems to recognized, the chaotic nature was ignored. Emotions are not linear factors that can be controlled by universal rules, especially the intrinsic difference between positive and negative emotions were ignored. Negative emotions are by nature forces of chaos and entropy in any orderly structure. By nature they have more intensity and power then positive emotions (Frijda, 1988:353) but in the field of organizational behavior, they were generally seen as some basic factors that can be satisfied in certain ways, and the chaos and mayhem that they bring were ignored.

As a legacy from that school of thought "human resources management" concept developed and became another manageable aspect making employees' behavior and performance predictable and calculable (Townley, 1993:538). Human is taken as a resource, this is a gross underestimation of the human existence. As we see today with the latest events of the Japan earthquake, tsunami and nuclear disaster, managing of natural resources is not a linear way without major entropic factors interfering (Schwartz, 2011). And humans are more chaotic than any natural

force, and the variety of levels from individuals, groups to organizations reinforces the chaotic nature of the human existence in organizational reality. Among that school, Chester Barnard was another key actor mentioning the individual motifs that could be modified towards the organizational ends. He mentioned about acceptance theory of authority, the role of informal organization and status systems (Barnard, 1938). Again, the emotional aspects to manipulate were in scope and the aim was to reach effectiveness of the organization. Human emotional capacity for irrational acts such as vengefulness against each other and organization were widely ignored.

Another influential management theorist was Follett who also emphasized the human aspect of the organization regarding empowerment, teamwork, experience and learning (Follett, 1918; 1924). Even though the human aspect is emphasized by different scholars and practitioners in the school of human relations, the idea of control via management tools did not change. But at this point it has to be pointed that, even though she didn't use the terminology of today, Follet came closest to point out the chaotic essence in the management (Mendellhall et al., 2000).

Another aspect regarding the foundation of modern management came from its relation to bureaucracy that is based on rationality and impersonality. Parsons who transferred the ideas of Weber to USA, focused on the functionality of bureaucracy for managing the organizations whilst Weber had also mentioned and criticized the "iron cage" of bureaucracy, rationality and impersonality (Burrell, 1999). Separation of defects of bureaucracy and effectiveness of organizations formed the two distinct themes of organization and management theory (Starbuck, 2003). Weber has originally identified the deficiencies of bureaucratic system, and the issues that he has identified were forces of entropy in organizational existence and he was very cautious of their effects and their resulting in dysfunctional bureaucracy. In his theory, Weber was cautious of forces of entropy but the problem is academics that supported and developed his theory deeper were ignoring this issues.

So basically, from the end of 19th century to the 1930s the main management thought was based on rationality, control and measurement. After human relations movement in 1940s the management theory evolved through including emotions, cognition and learning in order to change behaviors of workers. However, the main point of discussion did not change as the effectiveness, efficiency and managerial expectations came first. And naïve belief in the control of the chaotic nature of human existence prevailed.

Regarding scientific, forecasting and measuring aspect of management theory, quantitative methods should be also mentioned. After WW II, the importance of "managing" production and logistics of the army supplies brought advanced quantitative methods into the field and "Operations Research" entered the field (Hillier et. al, 2008:2). Now, it was important to find out the exact production and logistics management models by using mathematical formulas. That contribution evolved into fields of operations research and logistics management. Again, the main paradigm did not change; to determine variables, to consider constraints, to reach an efficient level of usage of resources. In the end, the assumption was based on controlling the environment as managers "managing" the organizations. The philosophy that lies beneath was again based on linear thinking. The quantitative methods dominance in the post second world war era, has caused a strengthening towards the manageable chaos in organizations. In this brand new world, humans begin to get lost in a new mechanical hell. This time, beginning from the point of usage of Colossus, computerized systems reached a new level, and automaton reality begin to evolve into a cyber reality. In this reality human existence was lost in the continuous flows of data. The vastness of this data and the power of the new processors have fed the illusion of controllable nature of the organizational chaos. Because the amount of information flow became so much that it was more than the ones processed all through human history. But during this evolution that lasted till recent times, there were also other efforts to interpret the organizational reality. And sadly they have accelerated the illusion of control's power.

Towards 1970s, a macro view on organizations developed as it is aimed to understand how organizations act in different situations. This thinking was very fitting to recognize the diversity of the organizational chaos in the world. In this period, the nature of management and organization studies began to change. The former management thinkers who initiated the management theory were practice oriented people coming from the industry. However, in association with the expectations of big corporations universities had began to form business schools in order to make "scientific" studies on management and organizations particularly in USA (Locke, 1996; Smircich & Calas, 1995). That brought the discussions on how management as a field might be scientific. Accordingly, following natural scientific methods traditionally employed in the university provided scientific legitimacy to management research (Khurana, 2007).

Now the information revolution that was mentioned above has reached its peak. In addition to general understanding of management in business life as a (control) tool, at that time management became a scientific field in the universities,

however again with a linear understanding of modernism. Hence, following deductive and positivistic philosophy of science as legitimate way of knowledge production (Mingers, 2006) management and organization scholars tried to operationalize the structural and technological dynamics in order to find out which organizational design would work better in different contingencies. That was also reflected in sub-fields of management studies that there were contingent theories of leadership styles (Fiedler, 1967), conflict resolution methods (Rahim, 1983) or organizational culture types (Deal & Kennedy, 1982). In each case, the variables were determined, operationalized, statistically measured and the possible outcomes were analyzed. Regardless of the impracticality of such knowledge in the business life (Pfeffer & Fong, 2002), the basic assumption was based on controlling variables and having concrete measurements and results. But there is a problem, organizations' tendency towards stabilization of the system in such a basic style, causes an explosive instability in the long run (Irvin, 2002).

Since its existence as a scientific discipline, management has an agenda of controlling variables and determining the future of the organization. These variables might vary from "the workers' motion and timing" to "motivational factors" or from "production-oriented leadership characteristics" to "formalization degrees". In management and organization studies all these variables exhibit the aim of measuring and controlling in order to achieve effectiveness and efficiency. Besides, there is also the assumption of being capable of manipulating variables and transforming or changing the causes and effects in order to fit to the environment. Again, the mentality of control was authenticated in management and organization studies. The interesting part is now there is a new completely distinctive academic world of controlled variables. Only problem is this world is beyond the actual human existence, it was somewhere over the rainbow of academic realities.

Following contingent theories of management and organization, specialization in the field accelerated, in association with sociology (neo-institutional theory, Meyer & Rowan, 1977; DiMaggio & Powell, 1983), economics (transaction cost theory, Williamson, 1975) or biology (population ecology, Hannan & Freeman, 1977; 1989) different theories were developed especially with a macro view. Within management, both in the academia and in the business world, the period of fads began with varying accelerators such as consulting firms, management gurus, business schools and business mass-media publications (Abrahamson, 1996). "In Search of Excellence" based on organizational cultures (even with a problematic scientific approach), total quality management, outsourcing (as a reflection of downsizing and neo-liberal wave after 1980s), business process reengineering,

emotional intelligence and learning organization were some of the examples presented as universal "management" solutions for organizational problems. The "gurus" were born and suggested new fads and fashions for the organizations. However, the main paradigm again was not confronted. "As managers you are capable of changing the future of your organizations, you can manage and you can control". Management, either in academia or in popular business life, based on linear thinking was a part of modernist project having characteristics of measurement, rationality and control. The wildness of chaotic aspect of business was largely ignored.

Such a historical development might also seem linear and away from contestation and chaos, however, there were always different perspectives and approaches in management that confront that "orthodox" and "central" knowledge production regarding management. Since its beginning (e. g. discussion and interpretation of Weber's bureaucracy), management have different voices regarding the ontology and epistemology of organizations and management. As orthodoxy was growing especially in the US business schools due to different socio-historical conditions, there were alternative approaches having continental philosophical roots. Postmodern (Cooper & Burrell, 1988; Hassard, 1999), ecological (Shrivastava, 1994), constructivist (Weick, 1969, Czarniawska, 2003) or critical studies (Alvesson & Willmott, 1992; Adler, Forbes & Wilmott, 2007) were the ones that mentioned technical, technocratic and political aspects of management studies in addition to employing varying epistemologies and ontologisms. Besides of all, another striking confrontation came from the field of chaos theory based on non-linear dynamics that was a part of paradigmatic change in the natural sciences.

3. THE INTERACTION BETWEEN MANAGEMENT THOUGHT AND CHAOS THEORY

Modern management approaches accept that organizations might interact with its environment and on the basis of contingencies they might have different structures. However, the nature of the organization itself as a chaotic and complex structure (Daft & Lewin, 1990) is not mostly considered. There are always forces of stabilities and instabilities in the nature of the organization that may cause chaotic variations evolve over time (Thietart & Forgues, 1995). The complex relations in the organizations make it less knowable (Perrow, 1967). Therefore, linear understanding of organization and management might cause insufficiency in order to reveal the reality of organizations. The tradition of MOS in that context might be considered as problematic. A new philosophical conception is required that is based on disorder, chaos and instability. Even though such an approach has

its roots in physics, it can be applied to different fields where nonlinear relationships and complex interactions evolve dynamically over time (Levy, 1994). Hence, chaos theory particularly focuses on change and how change occurs in all the living systems and in the world. Nonlinearity, in that context, means that there would not be direct cause and effect relationship between variables, there would be many different causes that might bring up unexpected situations. Sensitive dependence on initial conditions is also important that is mostly known as "butterfly effect". Some minor or ignored aspects of an event might cause huge effects, and it is not easy to determine the result in the beginning. With such characteristics, agents form self-organizations in order to adjust themselves to constant changes around them (Mendenhall et al, 2000). Within this context, "nonequilibrium, non-linear dynamics, bifurcation or branching out, entropy, cross-analysis, dissipative structures or the formation of order out of chaos through autoanalysis, attractors, autopoiesis, autocatalysis, and self-organizing capacities of living systems including organizations as open systems that make changes from order to chaos and order out of chaos possible" are the main points of analysis (Farazmand, 2003: 351).

Many studies were conducted to examine the relation between chaos theory and management relations (Johnson & Burton,1994; Levy, 1994; Wilding, 1998, Smith, 2003) this study differ from the main stream of chaos theory and management studies by aiming to emphasize the fact of chaotic essence. Originally, Thiétart & Forgues (1995) have expressed the need for examining qualitative factors of the chaos theory.

Examination of chaos theory is under the risk of being effected by being drowned by the continuous flow of quantitative data and the "scientific" approaches to management science. Because by today's technological improvements it is possible to derive the complex chaotic modelization of the truth in the borders of the academic realm. But the problem is this complex chaotic modelization has the risk of becoming an endless inflow of organization related data, and this supposedly more realistic inflow of data, or in other words, a more realistic depiction of organizational reality that considers the chaotic aspects is really dangerous, because it strengthens the illusion of control in this new camp of thought. Whilst there is an assumption of control in the discourse of management, chaos theory, with the assumptions mentioned above, figures out it is not easy to control all variables in the organizations which are dynamic systems witnessing nonlinear relationships. Such a view might be also considered as postmodern, however considering the scientific roots of the theory, it is understandable why it is neglected by postmodern organization scholars (Hassard & Parker, 1993).

Besides, the deterministic and deductive application of chaos theory in the management is also criticized and exhibited as the current problem in studying organizations with chaos theory (Mendenhall et al, 2000). Another criticism came as taking chaos theory as a fad that had a short life whilst scientific focus of the theory is emphasized for studying organizations (McKelvey, 1999).

4. CONCLUSION

As it can be seen above, management thought has a dominant tendency for the assumption of the control of all the elements, and even after accepting the basic assumptions of chaos, the recommended ways of dealing with it is based on this control and domination of something that can't be subdued by its nature.

At this point certain questions have to be asked. What makes chaos? What makes the nature of a human? Can human existence and complexity be reduced to a matter of linearly defined truth? Chaos is a basic philosophical truth, since the ancient times, many people have examined. In philosophy and in religion it was always around. Chaos was the thing before the creation, before the beauty of the order, it was the original archenemy, there was once chaos but it has been beaten. But the interesting point is ancient texts had one advantage. Even when it was claimed chaos was beaten, it was always acknowledged that it was somewhere deep. In Greek mythology, first there was chaos then the order comes, but there are enemies of order everywhere, they may be subdued but they still exist. And more importantly Nordic mythology chaos is matter of existence and life (Tetzner, 2004). This approach is providing a healthy metaphor for identifying chaos in life of humans and organizations. In essence, the gods of order and creation have prevailed over forces of destruction and always keeping vigil over them. But the interesting part is; it is accepted that there is an infinite circle. Even though gods have prevailed, forces of chaos continuously increase power in time. The thing is at the border of order, there are still forces of chaos working to undermine the order. When the time comes, the forces of chaos will attack all the existence, and the final battle will come and many of the gods, monsters and men will die in battle; in this twilight of gods. Then the life will begin again from the few remains of light and the cycle of order and chaos will begin again.

It can be asked whether if the existence can be reduced to a matter of circle in mythology. We aim not to reach a matter of reductionist truth, contrarily we aim to point out a basic statement of existence. When we look from Zen perspective; we can grasp this issue deeper, human's inability to grasp the totality of the truth shouldn't be ignored (Suzuki, 1997), claiming we don't have this deficiency is a great problem. There is a truth beyond the illusion of control, chaos can't be

subdued. Chaos is a state of existence. The basic fallacy inside management ideal has to be challenged, it's not possible to achieve a linear control of existence. There is one optimist ideal that prevents this challenge, except special cases, when an organization is established, founders treat it as something eternal (In comparison to shortness of human lives, they are comparably much more long lived for sure). When an organization is founded the last thing people think about is the simple truth of organizational existence, organizations are mortal. They have their own seeds of destruction at their birth. Even though a new founded organization is a bastion of order, it begins its road to chaos in the moment that its created. Trying to reduce this existential issue of chaos and order, to a mere approach of using chaos theory modeling to subdue chaos is a misguided approach. The basic claim of this epistemological study is; chaos is an issue that management has to learn to live with, trying to subdue them is just an illusion of control. Identifying the mortality of organizational existence and acting according to that will be much more beneficial to organizations than the present mistakenly optimist belief of possible domination over chaos.

BIBLIOGRAPHY

Abrahamson, Eric (1996), "Management fashion", *Academy of Management Review*, Vol.21, No.1, pp. 254-285.

Adler, Paul, Linda C. Forbes and Hugh Willmott (2007), "Critical Management Studies", (in James P. Walsh and Arthur P. Brief Eds., *Academy of Management Annals 1)*, New York: Lawrence Erlbaum, pp. 119-180.

Alvesson, Mats and Hugh Willmott (1992), Critical Management Studies. London: Sage.

Baofu, Peter (2007), The Future of Complexity. Singapore: World Scientific Publishing.

Barnard, Chester I. (1938), The Functions of the Executive, Boston, MA: Harvard University Press.

Bruce, Kyle and Chris Nyland (2011), "Elton Mayo and the deification of human relations", *Organization Studies*, Vol.32, No.3, pp. 383-405.

Burrell, Gibson (1999), "Normal science, paradigms, metaphors, discourses and genealogies of analysis", (in Stewart R. Clegg and Cynthia Hardy Eds., *Studying Organization: Theory and Method*) London: Sage, pp. 388–404

Cooper, Robert and Gibson Burrell (1988), "Modernism, postmodernism and organizational analysis: An introduction", *Organization Studies Vol.9*, No. 1, pp. 91–112.

Copley, Frank B. (1923), Frederick W. Taylor: Father of Scientific Management, 2 vols. New York: Harper.

Czarniawska, Barbara (2003), "Social constructionism in organization studies", (in Robert Westwood and Stewart Clegg Eds. *Debating Organization)* Oxford: Blackwell Publishing, pp. 128-139.

Daft, Richard L. and Arie Y. Lewin (1990), "Can organization studies begin to break out of the normal science straitjacket: An editorial essay", *Organization Science*, Vol. 1, No.1. pp.1-9.

Deal, Terence E. and Allan A. Kennedy (1982), Corporate Cultures: The Rites and Rituals of Corporate Life, Reading, Mass: Addison-Wesley.

DiMaggio, Paul J. and Walter W. Powell (1983), "The iron cage revisited: institutional isomorphism and collective rationality in organizational fields", *American Sociological Review*, Vol. 48, No. 2, pp. 147-160.

Farazmand, Ali (2003), "Chaos and transformation theories: A theoretical analysis with implications for organization theory and public management", *Public Organization Review: A Global Journal,* Vol. 3, pp. 339-372.

Fiedler, Fred E. (1967), A Theory of Leadership Effectiveness, NY: McGraw-Hill.

Follett, Mary P. (1918), The New State: Group Organisation: The Solution for Popular Government, NY: Longmans Green.

Follett, Mary P. (1924), Creative Experience, NY: Longmans Green.

Frijda, Nico H. (1988), "The laws of emotion", *American Psychologist*, Vol.43, No.5, pp. 349-358.

George, Claude (1972), The History of Management Thought. Englewood Cliffs, NJ: Prentice-Hall.

Hannan, Micheal and John Freeman (1977), "The population ecology of organizations, "*American Journal of Sociology*, Vol.82, No.5, pp. 929-964.

Hannan, Micheal and John Freeman (1989), Organizational Ecology, Cambridge, MA: Harvard University Press.

Hassard, John (1999), "Postmodernism, philosophy and management: concepts and controversies", *International Journal of Management Reviews,*Vol.1, No. 2, pp. 171-195.

Hassard, John and Martin Parker (1993), Postmodernism and Organizations, London: Sage.

Hillier, Fred S., Mark S. Hillier, Karl Schmedders and Molly Stephens (2008), Introduction to Management Science, Singapore: McGraw-Hill.

Irvin, Lisa (2002), "Ethics in organizations: A chaos perspective", *Journal of Organizational Change and Development*, Vol.15, No. 4, pp. 359-381.

Johnson, Jonathan L. and Brian B. Burton (1994), "Chaos and complexity theory for management", *Journal of Management Inquiry*, Vol.3, No.4, pp. 320-328.

Khurana, Rakesh (2007), From Higher Ends to Higher Hands, Princeton, NJ: Princeton University Press.

Kuhn, Thomas. S. (1962), The Structure of Scientific Revolutions. Chicago: University of Chicago Press.

Levy, David (1994), "Chaos theory and strategy: theory, application and managerial implications", *Strategic Management Journal*, Vol. 15, pp. 167-178.

Locke, Robert R. (1996), The Collapse of the American Management Mystique, Oxford: Oxford University Press.

McKelvey, Bill (1999), "Complexity theory in organization science: Seizing the promise or becoming a fad?", *Emergence,* Vol.1, No.1, pp.5-32.

Mendellhall, Mark .E., James H. Macomber and Marc Cutright (2000), "Mary Parker Follett: prophet of chaos and complexity", *Journal of Management History*, Vol. 6, No.4, pp. 191-204.

Meyer, John W. and Brian Rowan (1977), "Institutionalized organizations: formal structure as myth and ceremony", *American Journal of Sociology*, Vol.83, No.2, pp. 340–363.

Mingers, (2006), "A critique of statistical modelling in management science from a critical realist perspective: Its role within multimethodology", *The Journal of the Operational Research Society*, Vol. 57, No.2, pp. 202-219.

Morgan, Gareth (2006), Images of Organization, London: Sage.

Perrow, Charles (1967), "A framework for the comparative analysis of organizations", Ameican Sociology Review,Vol. 32, No.2, pp. 194-208.

Perrow, Charles (1986). Complex Organizations: A Critical Essay, Glenview, IL: Scott,Foresman.

Pfeffer, Jeffrey and Christina T. Fong. (2002), "The end of business schools? Less success than meets the eye", *Academy of Management Learning and Education* (September), pp. 78–95.

Priesmeyer, Richard H. (1992), Organizations and Chaos. Westport: Quorum Books.

Rahim, M. Afzalur (1983), "A measure of styles of handling interpersonal conflict", *The Academy of Management Journal*, Vol. 26, No. 2., pp. 368-376.

Schwartz, John (2011) The limits of safeguards and human foresight, The New York Times, http://www.nytimes.com/2011/03/13/weekinreview/13limits.html?_r=1 retrieved on 30.03.2011

Scott, Richard W. (2004), "Reflections on a half-century of organizational sociology", *Annual Review of Sociology,*Vol.30, pp. 1–21.

Shenhav, Yehouda (2003), "The historical and epistemological foundations of organization theory: Fusing Sociological theory with engineering discourse", (in Haridimos Tsoukas and Christian Knudsen Eds., *The Oxford Handbook of Organization Theory*) Oxford: Oxford University Press, pp. 183-209.

Shrivastava, Paul (1994), "Castrated environment: Greening organization studies", *Organization Studies*, Vol. 15, No.5, pp. 705-726.

Smircich, Linda and Marta B. Calas (1995), "Introduction", (in Linda M. Smircich and Marta B. Calas Eds., *Critical perspectives on organization and management theory)*Aldershot: Dartmouth, pp. xii-xxix

Smith, Peter A. C. (2003), "Implications of complexity and chaos theories for organizations that learn", *The Learning Organization*, Vol. 10, No. 6, pp. 321-324.

Stacey, Ralph D. (1992), Managing the Unknowable, San Fransisco: Jossey-Bass Inc.

Starbuck, William H (2003), "The origins of organization theory", (in Haridimos Tsoukas and Christian Knudsen Eds., *The Oxford Handbook of Organization Theory*) Oxford: Oxford University Press, pp. 143-182.

Suzuki, D.T. (1997), Zen Budizm, İstanbul: Yol Yayınları.

Taylor,Frederick (1911), The Principles of Scientific Management, NY: Harper.

Tetzner, Reiner (2004), Cermen Tanrı ve Kahramanlarının Efsaneleri, İzmir: İlya Yayınevi.

Thiétart,R.A and B. Forgues (1995), "Chaos theory and organization", *Organization Science*, Vol. 6, No. 1, pp. 19-31

Townley, Barbara (1993), "Foucault, power/knowledge, and its relevance for human resource management", *The Academy of Management Review*, Vol. 18, No.3, pp. 518-545.

Weick, Karl (1969), The Social Psychology of Organizing, Reading, MA: Addison-Wesley.

Wilding, Richard D. (1998), "Chaos theory: Implications for Supply Chain Management", *International Journal of Logistics Management*, Vol. 9, No.1, pp. 43-56.

Williamson, Oliver E. (1975) Markets and Hierarchies: Analysis and Antitrust Implications. New York: Free Press.

Wren, Daniel A. (2004), The History of Management Thought, NY: John Wiley & Sons.