

# ”Complexity Theory and General Model of Leadership”

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## Abstract

Recent approach to complexity theory (Mary Uhl-Bien, Russ Marion Bill McKelvey, 2007) of leadership attempt to move toward ?a new understanding of what leadership is, in a post-industrial school of leadership? by developing a model of leadership based in complexity science in bureaucratic forms of organizing (Mary Uhl-Bien, Russ Marion, 2009). This study has tried to drop the old paradigm of ?Reductionist Thinking? to reach to a holistic view and model which can be offered by Complexity Theory and consequently succeeded here to offer: 1. A broad solution which is embedded in Complexity science. 2. General Model of Leadership as a Complex Adaptive System (CAS) 3. Understand and Explain how attractors affects CAS of leadership 4. Look at Leaders Brain instead of Behavior 5. An start to Complex Plane (called here also phase space) of the complex function to simulate emerged system of Leadership.

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*Index terms*— complexity theory, phase spac e, leadership model, motivation, attractors

## 1 Introduction

t summarizing the reviewed literature, history of development of mankind understanding and science in Leadership reveals that, at early age, in the feudal or clan culture, ”Great Man” solution was the only possible media for directing the Crowd of people and groups. The people were treated as slaves or slave kinds having limited rights in society. Years, ”Great Man” led the labors assuming Theory X view point toward workforce and gradually gave the leadership a Transactional move but assuming the same Theory of X. Simultaneously early industrialization collected a mass of agricultural un-skilled labors free for basic footwork. Training and education made more productive labor and in parallel, industry shifted to Mass production making economy of scale and dump in price level and goods available for public. The basic security needs was met and Transactional leaders played great role practicing ”control management”. In the control management paradigm, making money requires a firm to control processes, and to do that the firm must have standardization and ensure that most effective subordinate did it in the most efficient manner. The production processes got robot systems and ”Brain Power” replaced labors with the skilled followers, so the individual development was getting mature to Theory Y workforce and Transactional leadership style was not sufficient to meet new goals for incremental improvement. So, Transformational leadership started to play the significant roles in moving organizations forward with visions share with followers. In this incremental improvement paradigm, making money requires customer satisfaction, which in turn requires a culture and systems for quality and excellence and perfectionism ??Transformational Visions).

## 2 Problem Definitions

Review of literatures and books helped to extract the history of leadership theories, including the distinction between transactional, transformational and III. Research Methodology (Semi-Grounded Theory building)

SJ ??ox and Wolfgramm (1997), introduced Dynamic-Comparative Case Study Method (DCCSM). It is believed that D-CCSM is especially appropriate for researchers who: (1) are interested in studying new topical areas in organizations; (2) want to develop testable, midrange, theory from the processual analysis of case studies; (3) would like to replicate their studies in multiple research settings; and (4) have limited research resources.

### 3 IV.

Research (In-field approach to Leadership)

To exercise In-field research approach, which will also enable us to develop semi-grounded theory, following qualitative research questions are designed.

1. What is going on in Leaders' Brain (Psychological, emotional and life studies)? 2. What is the leader's objective? 3. What tools and environment were available for Leader to lead and reach goals?

After analyzing 5 different case studies, following results are obtained:

1. Leader's brains are not normally wired. 2. "Reductionist Thinking" misleads us on parts and whole of leadership. 3. Leaders use organization, environment, politics and different styles as media to reach their goals.

### 4 a) Complexity Theory

Complexity Leadership Theory (CLT) is the study of the interactive dynamics of complex systems (CAS) embedded within contexts of larger organizing systems. (Mary Uhl-Bien, Russ Marion, 2009) The signi can only be understood by recognizing the meaning of the term complexity (see Illiers, 1998, Ch. 1 for a good overview of complexity and CAS; see also Nowden & Boone, 2007).

Most of nature is made up of what complexity scientists call non-linear, complex adaptive systems created by a number of diverse and independent agents that are constantly changing and interacting with each other.

In complex dynamic systems that adapt to their context, a study of the parts surely produces an incomplete understanding of the whole. In adaptive systems apparently inexplicable results arise from the interactions between simpler components. But such systems are not random and follow patterns even if they are difficult to predict precisely.

Following General Model of Leadership as a Complex Adaptive System consists of Leader, Organization and environment emerged in one complex model of leadership. The 'emergence' indicates the whole outcome if different from collection of individual variables. We called the whole "Leadership" system which consists of embedded interacting agents, free to act, not always predictable, changing the context of each other.

### 5 Figure 2 : Leadership Model

We propose this model of Figure 2 as a Simple but with embedded interactions of variables (It is not Reductionist Model). It is a general model since can be modified by adding any new variable depending on case, e.g. if there is a change leader or a multiorganization, then model can be build up adding new variable making it a pyramid shape. The same way the informal dynamic is embedded in context. The variables and the system are fuzzy and have no boundary (not like reductionism). It is complex with double way interacting variables but not complicated as a model of a rocket with components having defined input and output. It is also adaptive since when the states of the model as a whole changes, the non-linear interacting agents will practice changes and if components changes then nonlinear interactions between variables will create effective and developed state far from equilibrium. Sometimes a small change in Leader results in no change in organization, other times a huge change in organization, unpredictable. They operate in a delicate dynamic balance between static and chaotic modes in an area called the 'edge of chaos'. Agents in this model of complex adaptive system respond to others by using internalized rules (instincts, procedural rules, or mental models) that drive action.

Modeling leadership with Complexity Theory, reveals uncertainty and inconsistency as inherent within the system and without considering attractors (general patterns), the only way to know exactly what leadership will do is to observe it ultimately. The general patterns or attractors come from leaders (objectives), Environment (social and economical actors) and organization (culture, technology, efficiency and effectiveness). The attractors can be categorized as fixed-point attractors, periodic attractors and strange attractors. Research on attractors may dominate the leadership research in the future because they determine the patterns and expose past and present while playing key roles in estimating future.

### 6 b) Model Generalize-ability:

Vladimir Dimitrov (January 2001), in "Thinking And Working In Complexity" explains that Several stunning discoveries of the theories of Chaos and Complexity shattered the logical foundations of science built over the span of many centuries:

1. Prediction and determinism are incompatible: we cannot predict long-term behavior of complex systems, even if know their precise mathematical description. 2. Reducing does not simplify: interaction is important and interaction means inseparability. 3. Simple linear causality does not apply to Chaos and Complexity. 4. Complex dynamics give birth to forces of selforganization:

The self-organizational force seems to arise spontaneously from 'disordered' conditions, not driven by known physical laws. How can entirely new structures emerge from the multitude of interactions within the complex systems? The concept of vorticity explains this stunning phenomenon. "When the vortex is swirling you could swear that there is a force somewhere. Where is it coming from? The answer is perhaps the most fundamental acknowledgement in all of Complexity: it comes from within the system. Although there seems to be an external

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102 force organizing the vortex, it is the masses in the vortex that is driving it" (O. ??m, 1994, cited by Dr. Vladimir  
103 Dimitrov).

104 As Hayek put it in *The Sensory Order* ??1952, pp. 188-189, 8.80). Modeling can only allow pattern prediction  
105 in complex system not a precise result prediction that may come out of a non-complex phenomena. In a complex  
106 system of emerged variables, the system patterns can be predicted by attractors which interact non-linearly and  
107 sometimes randomly. To draw a model of complex system, it is necessary to extract variables, relationships,  
108 attractors and relation of attractors on system patterns and affecting variables. Therefore Considering the fact  
109 that the variables and relations are complex and fuzzy and the model represent an emerged complex system,  
110 therefore the traditional method of reductionist approach and inputoutput test is not applicable. Applicability  
111 / validity / trustworthiness / generalize-ability characteristic of this CAS model, shall be assessed in:

112 1. Static / Snapshot: Finding the attractors of each variable at any moment 2. Dynamic / Longitudinal:  
113 Understanding and finding the changes of attractors and changes of function of complex system.

114 In our model of complex emerged leadership system, we shall be able to find attractor for all of three variables  
115 and shall justify longitudinal changes, then the model will not be valid and can be generalized.

116 In framework of complexity theory and proposed model, (midrange theory and model), we tested the model  
117 by proposing the attractors for different variables in above five Cases of leaders. We tested the business, political  
118 and educational leadership systems and found the model is valid and the attractors not only exist but also have  
119 impact on whole emerged system operation. That is why tests were successful, then the midrange model in  
120 framework of semi-grounded theory as well as model developed in complexity framework are confirmed.

121 Referring to figure 2, it will be interesting to find if this model is able to explain how the attractors changed over  
122 time and resulted changing the functions which was interpreted as leadership style. We listed out the attractors it  
123 may be necessary to test the Historical development of Attractors of Leadership complex model as listed in table  
124 1. Therefore, this model describes all what we historically know on leadership by understanding it's dynamic  
125 nature at any snapshot of time when it is going to be tested. Based on reductionist thinking, a natural tendency  
126 is to make model of variables affecting process and define relations and test it in different conditions. It has  
127 happened that these models have not been functioning in new conditions. Actually and practically those models  
128 have been built by using attractors as variables and since different conditions changes attractors, therefore those  
129 models lost the dynamism and so were not generalized any longer. We can see here that due to complex structure  
130 of leadership, one model can not only be generalized for different situation of political, educational and business  
131 but also is able to cover whole history of leadership.

## 132 **7 c) Complexity Model for Motivation**

133 Motivation is to be studied on employee, as separate variable in our Leadership model. Accordingly, Figure 3  
134 Studying the intrinsic attractor is a pure psychological research and all human dimensions shall be studied such  
135 as Identity, emotion,? etc. Vladimir Dimitrov and Kalevi Kopra, 1998 in *Dynamics of Human Identity* propose  
136 two internal attractors and says: "In today's society there are two distinguishable attractors for the dynamics of  
137 human identity -one is the attractor of separateness, the other is the attractor of unity.

## 138 **8 The Attractor of Separateness 2. The Attractor of Unity**

139 The interaction (motivation) of employee to external variables depending on strength of each one and also drive  
140 from internal attractors of employee explains static and dynamic functions which was already categorized in  
141 Theory X, Y or Z motivation. In case the environment has priority and strong affection on employee, then the  
142 relation with other two get loosen and employee moves close to environment if also attractor of unity of employee  
143 supports this move. That is Theory X where the employee looking for his basic need in environment satisfied as  
144 Maslow pyramid.

145 That is true that "Great Man" belong to early age when the people economy and knowledge was at lowest  
146 level (Theory X field of application) but all Great men had few followers neglecting the basic needs and devoted  
147 to leader. This mean the Leader charisma or attractor towards such followers was strong and therefore, they  
148 were practicing some leader tasks (Theory Z). Generally if employee get closer to Environment shows Theory X  
149 behavior, if get closer to organization then Theory Y and close to Leader shows theory Z behavior.

150 Tables 1 shows attractor's driving 3 variables interacting extrinsically with employee and depending on  
151 applicable X, Y or Z of motivation theory, different underlined attractors in above tables get stronger and  
152 prevailing effect.

153 This model does explain why even theory Z employees can get employee X behavior during the affection  
154 by environment for example while strikes raised through political and economical reasons or in case of need  
155 for financial support or need for belongingness (unity) or when employee feels repulsion from the leader or  
156 organization (Separateness) .

## 157 **9 d) Sample Phase Space:**

158 We read in "Complex systems, time and graphical analysis of organizational behavior" written by Linda L. Brown,  
159 Daniel J. Svyantek 2001 that "Complex systems must be studied across time to find patterns of underlying  
160 order. A phase space diagram illustrates the way in which systems transform themselves over time ??Abraham,

161 Abraham, & Shaw, 1990) The phase space diagram shows whether behavior on this variable varies across time  
162 and the amount of variation that occurs. The phase space diagram shows whether behavior on this variable  
163 varies across time and the amount of variation that occurs. Phase space diagrams ??Svyantek & Brown, 2001;  
164 ??vyantek & Brown, 2000a ?? Svyantek & Brown, 2000b; ??nd Svyantek & Snell, 1999) have been used to  
165 understand order in complex systems”.

166 Phase Space Graph, in case the total system is selected to be studied, is called complex plane, showing whole  
167 complex system behavior as well as interactions of emerged variables. Each system has almost unique phase  
168 space demonstration till an iconoclastic change is not experienced. After an iconoclastic change, the system will  
169 be a totally new unique system and will show almost the same phase space if the interaction of variables are not  
170 changed. But anyhow, all variables will be settled in new states and values.

171 IF our model is valid model in complexity theory, then we shall be able to draw the phase space of an assumed  
172 leadership system in state of equilibrium. A phase space diagram is a history of the changing variables of the  
173 system. Any state of the system at a moment in time is represented as a point in phase space. All the information  
174 about the system is contained within the co-ordinates of that point. Then as the system changes the point will  
175 move to another place in phase space. As the system changes with time the point in phase space will trace a  
176 trajectory on the phase space diagram.

177 We now try to draw some key assumptions to be able to draw a complex plane (phase space) for leadership  
178 where we can distinguish the actions of attractors and changes in variables. We assume a Leadership model,  
179 where following functions are assumed to represent patterns of attractors:

180 1. The response of Organization (change in productivity) for increase on Leader effectiveness (for a change  
181 or transformation) can be studied in two dimensional frame where it shows a Non-linear Hyperbolic/exponential  
182 behavior and organization productivity matures at level A 2. Leader response (effectiveness) towards changes  
183 in Environment (Market size for example) shall almost have linear behavior at first start of increase of market  
184 size. We also know and can assume that market share of companies reduces by new competitors and lack of  
185 profitability in increase of a product, therefore we can assume that leader effectiveness can be reduced by marker  
186 share decline.

## 187 10 The effectiveness of

## 188 11 Conclusion

189 It should be note that somehow the values at x, y and z may have fuzzy values and shall be scaled. We may have  
190 still time to reach formulation of human science in mathematics and making scale to measure the characteristics  
191 of variables and this representation was only a light in the road to reach to explanation of order in complex  
192 system and simulation of novelties to examine future in Labs.

193 When the representative value of variables are identified and scaled and relation between variables are somehow  
194 defined/estimated in mathematical formula, then phase space of model of such specific leadership can be drawn  
195 and the attractors influence in equilibrium state can be simulated and well measured. Then it will be possibly  
196 to estimate change of system based on attractors and will even be possible to test a transient state and find the  
197 system new state of equilibrium because we defined leadership system as adaptive and self-organizing system.

198 If we neglect the error imposed due to lack of availability of scale on values of variables in X, Y and Z in this  
199 Cartesian dimensions, practically this phase space diagram can explain any business organization behavior. Each  
200 new business imposes new leader efforts and new organization capacity upgrade and market size enhancement  
201 till system and variables all reach new state of equilibrium depending on attractor’s values and effectiveness.

202 Further to presenting ”Complexity theory and model of leadership” I cannot assume conclusion for start of  
203 my proposed way forward and since we revealed just a part of facts so can judge only on immediate needs of how  
204 and where to continue by: 1. Developing a phase space study 2. Defining scale system for measurement of key  
205 attractors. 3. Formulating a complex equation for leadership phase space 4. Study if merger of two companies or  
206 acquisition of new company can be described by a phase space of the mathematical result of complex equation  
207 of two companies?

## 208 12 Appendix 1

209 Five cases, 1-A Politician (Obama) 2-An Entrepreneur (Jobs) 3-An IT Leader (Craig) 4-An Education Leader  
210 (Druker) 5-A Business Leader (Weiss), are selected to have sample on each field to be able to get more chance for  
211 Generalizability. The constructs of transferability (i.e., external validity) and Credibility (i.e. triangulation),is  
212 also attained through the use of multiple data collection methods and through the corresponding data collection  
213 between cases.

214 Above question could also be in detail included in interview with leaders and through qualitative analysis  
215 could be done on the answered question. Anyhow, recently, interesting books(which books? Name themfollowing  
216 book?) have been published explaining leaders such as ”Inside Steve’s Brain”, ”Inside Drucker’s Brain” and  
217 ”Inside Obama’s Brain” have tried to explore some part of realities which we will address here in Cases.

218 For a Qualitative data mining most accurate data for above question shall be available in above books because  
219 they have been prepared with extensive explanatory data on our questions while also other sources in internet  
220 were used to cross-check the trustworthiness of collected date.

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221 Referring to above Flowchart 1, data collection and analysis (Action 1 to 13) is performed by researcher and  
222 two co-analyst (two member of CCG as MBA graduated colleagues) and action 14 to 17 was jointly continued.  
223 The answers of research question was prepared as following for each case independently. Action 18 th to 21 st is  
224 then performed by summarizing the comparative finding in each case and general conclusion is obtained in three  
225 topics. The finding also tested by their Complexity theory applicability in table 5, Then a review is conducted  
226 on new Neuroscience, electroencephalography, neuropsychology, psychoanalysis, and artistic practice on Brain  
227 and which all confirms the conclusions of each other. Therefore we believe we have been able to conduct here a  
228 semigrounded theory extraction using the framework of complexity theory and have made model and tested it in  
229 CCG experiment.

230 Case 1 : Sasha Abramsky, Author of "Inside Obama's Brain" have stated few points not an academic value  
231 but useful. One year ago, Obama (The first black candidate), had received more votes (in raw numbers if not  
232 total percentage of votes cast) than any other presidential candidate in history. Then he received the Nobel  
233 Prize because, despite the ongoing war in Afghanistan, Obama's achievement: 1. In convincing a majority of  
234 Americans to part with the go-it-alone, conflict is good for business policies and ethos of the Bush/Cheney years  
235 2. Long-term ambitions in many human related field made millions of people feel included in the political process  
236 for the first time in their lives, 3. Put in place a large scale anti-poverty agenda cumulatively merited a Peace  
237 Prize.

238 Because of his values, at least in part, Obama has not discarded, or given up, his fundamental political values.  
239 The forty fourth President, is deeply empathetic and is genuinely committed to a grassroots empowerment vision  
240 with an strange mix of pragmatism and idealism. His soul, his heart, is utopian and passionate about bringing  
241 the voices of the voiceless into the halls of power; but his brain is actually rather policy wonkish.

242 He has never wanted to tear down, or allow to collapse under its own weight, but measurably, the Obama  
243 leadership is changing some of the fundamental processes in US society.

244 Answers for research questions:

245 1. Obama's Brain Empathetic and Genuinely believe of utopian states (Visionary Leader) 2. What is the  
246 leader's objective? "Soft Power" let say "grassroots-empowerment"

### 247 **13 What tools and environment were available for**

248 Leader to lead and reach goals? Change, Organize for America using Majority of Americans, Public attitude  
249 worldwide, Case 2 : "I was worth about over a million dollars when I was twenty-three and over ten million  
250 dollars when I was twenty-four and over a hundred million dollars when I was twenty-five, and it wasn't that  
251 important because I never did it for the money," Jobs said.

252 In 1985, Jobs quit before he could be fired from Apple for being unproductive and uncontrollable. With  
253 dreams of revenge, he founded NeXT with the purpose of selling advanced computers to schools and putting  
254 Apple out of business. NeXT, on the other hand, never took and had to exit the hardware Business. Now in his  
255 early fifties, Jobs lives quietly, privately, with his wife and four kids in a large, unostentatious house in suburban  
256 Palo Alto. A Buddhist and a vegetarian who eats fish, he often walks barefoot to the local Whole Foods for  
257 fruit or a smoothie. He works a lot, taking the occasional vacation in Hawaii. He draws \$1 in salary from Apple  
258 but is getting rich (and ever richer) from share options-the same options that almost got him into trouble with  
259 the SEC-and he flies in a personal \$90 million Gulfstream V jet granted to him by Apple's board. Apple has  
260 become the perfect vehicle to realize Jobs's long held dreams: developing easy-to-use technology for individuals.  
261 He's made-and remade-Apple in his own image. Jobs has taken his interests and personality traits, obsessive,  
262 narcissism, perfectionism and turned them into the hallmarks of his career. He is one of few who turned his  
263 personality traits into a business philosophy.

264 He's a cultural elitist who makes animated movies for kids; an aesthete and anti-materialist who pumps mass-  
265 market products out of Asian factories. He promotes them with an unrivaled mastery of the crassest medium,  
266 advertising. He's an autocrat who has remade a big, dysfunctional corporation into a tight, disciplined ship that  
267 executes on his demanding product schedules.

268 Inside Steve's Brain Published in April 2008, was a New York Times best-seller and an international hit  
269 (translated into 15 languages and a best-seller in Brazil and Italy). There will be a time when Apple will be left  
270 without its supreme leader, Leander Kahney says in his book, then "the company will be both royally fucked  
271 and totally OK when the inevitable happens". Fucked because this is there inescapable "only one Steve Jobs  
272 exists" even if Bill Gates casts a larger shadow but Microsoft copied everything from Apple -and still does, from  
273 Windows to the Zune. Ugly, but true. But since Jobs made "routinization of charisma" implanting charismatic  
274 personality traits of leader's (obsessive, perfectionist prototyping of Steve's) into business processes, then Apple  
275 will be OK even without him.

276 Steve said : "the values of our company are extremely well-entrenched. We believe ? we're on the face of  
277 the earth to make great products and that's not changing ... believe in the simple, not the complex .... believe  
278 in deep collaboration and cross-pollination of our groups ? And frankly, we don't settle for anything less than  
279 excellence ?and we have the self honesty to admit when we're wrong and the courage to change." Answers for  
280 research questions :

281 1. Steve's Brain Autocrat , an aesthete and anti-materialist, "I never did it for the money", Buddhist, Work  
282 alcoholic, obsessive, narcissism, perfectionism 2. What is the leader's objective? Easy-to-use technology

### 14 What tools and environment were available for

Leader to lead and reach goals? Apple as the perfect vehicle where he turned his personality traits into a business philosophy.

Case 3 : CEO suspects that it may be the right way to run the world. Newmark, says there is nothing he would care to do with that much money, should it ever come into his hands. He already has a parking space, a hummingbird feeder, a small home with a view, and a shower with strong water pressure. What else is he supposed to want? What kind of company declares itself uninterested in maximizing profit? "Companies looking to maximize revenue need to throw as many revenue-generating opportunities at users as they will tolerate," Buckmaster says. "We have absolutely no interest in doing that, which I think has been instrumental to the success of craigslist."

Craig has ever said to CEO, 'This is the way it has to be,' The long-running tech-industry war between engineers and marketers has been ended at craigslist by the simple expedient of having no marketers. Only programmers, customer service reps, and accounting staff work at craigslist. There is no business development, no human resources, no sales. As a result, there are no meetings. The staff communicates by email and IM. This is a nice environment for employees of a certain temperament. "Not that we're a Shangri-La or anything," Buckmaster says, "but no technical people have ever left the company of their own accord."

The claim that craigslist, used by millions of strangers, is somehow a democracy begins to be believable exactly here, in the crotchets, irritations, prejudices, and minor forms of harassment that characterize life in a small town where any proposal you make is subject to the judgment of everybody.

"My big mission is to help make grassroots democracy as much a part of our government as representative democracy," he says.

### 15 Answers for research questions:

1. Craig's Brain Work alcoholic, absolutely no interest in Money making, 2. What is the leader's objective? Grassroots democracy

### 16 What tools and environment were available for

Leader to lead and reach goals? Crowd sourcing in Craigslist with 30 employees and his leadership style.

Case 4 : Peter Drucker, was "the father of modern management" who revolutionized management theories with over 38 books on business. A part of Drucker's incredible body of knowledge to life, includes his consultancy on General Motors and as a mentor to Jack Welch in his stellar career at General Electric. 1950-1971 Drucker was a professor in Management at New York University and 1971-2005, the Clarke Professor of Social Science and Management with the Claremont Graduate University. But due to his approach, he turned his back on academia in what it views as important ways, academia turned its back on him, as well. Therefore, it is not strange that he is quite neglected in the academic literatures while by exploring his books and thinking, you find he was well ahead of his time, and on the forefront of management thinking.

The publisher of "Inside Drucker's Brain" book written By Jeffrey A. Krames, has issued a review where he says, ninety-four-year-old Peter Drucker invited me to his home for a daylong interview. It took many months for me to get the lessons clear. Yet not one (of my twenty plus published books in management) gave me the education I had gained at Drucker's side in that one remarkable day. The lessons of this ultimate Renaissance man, dig into the areas of education, society, politics, and medicine.

Drucker lived a life based on embracing tomorrow and abandoning yesterday. Along the way he discovered an important paradox: in order to build one must tear down. Drucker had little problem tearing things down, abandoning what did not work, leaving behind what was no longer important. That was how he was able to accomplish so much. Some of the chapters of this book summarized Drucker's thinking: Opportunity Favors the Prepared Mind, Execution First and Always, Broken Washroom Doors (take care of details), Outside In (being customer centered), Abandon All But Tomorrow, The Leader's Most Important Job, and A Short Course on Innovation.

Answers for research questions :

1. Drucker's Brain Iconoclastic Knowledge creator, abandon all but tomorrow 2. What is the leader's objective? Renaissance in management science

### 17 What tools and environment were available for

Leader to lead and reach goals? Academia (But he did not manage to use it), His books and free domain in US (even if he was not so admired by academies) Case 5 :

Weiss credited Ameritech's consistent financial success to its information-intensive marketplace, strong management, state-of-the-art technology and an enlightened state regulatory climate. According to "Simultaneous Transformation and CEO Succession: Key to Global Competitiveness" published in Organizational Dynamics, Spring 1996 pages 45-59, in August 1991, Ameritech's CEO, William Weiss was approaching last years of his retirement but seriously searching for ways of transforming the culture of Ameritech because he believed we've got to transform this company or we'll find our markets rapidly shrinking within five years facing us to a catastrophic situation.

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342 "We're going to creatively disassemble and rebuild Ameritech. This is the most important leadership challenge  
343 we have ever undertaken and the toughest challenge of all will be cultural." Weiss said to his 30 senior executive  
344 officers in February 1992 and in March 1992, the Breakthrough effort began. Then the company was being put on  
345 a war alert and Breakthrough Lead Team was functioning as role models for the values of openness, candor, and  
346 constructive conflict. Beside these values citing such elements as teamwork, making contributions, and ethics to  
347 drive Ameritech, they also touched employee relationships. They defined new psychological contract confronting  
348 the entitlement mentality with: No guaranteed employment, Employment relationship based on performance and  
349 opportunity to grow, fairness, and merit-based compensation.

350 Answers for research questions :

351 1. Weiss's Brain Iconoclastic, abandon all but tomorrow 2. What is the leader's objective? Avoid facing  
352 with a catastrophic situation 3. What tools and environment were available for Leader to lead and reach goals?  
353 Breakthrough (disassemble and rebuild Ameritech and set new vision in place) using Strength of his position and  
354 Position of Strength 5 Case and 3 Conclusions :

355 When we analyze the above 5 Cases qualitatively, we can easily learn / conclude (from above useful but not  
356 deep academic texts) that:

357 1. Leader's brains are not normally wired.

358 Craig and Steve both possibly suffer from a mild Asperger and Obama has a Spiritual but Systemizing Brain,  
359 Drucker and Weiss Iconoclastic and we will discuss these aspects later in this article.

360 2. Outside-in approach or "Reductionist Thinking" misleads us on parts and whole of leadership. It has  
361 incorrectly assumed organizational result as the objective while real Leaders objectives are quite different. Craig  
362 does not aim to beat competition or generate money, he aims Grassroots democracy -Obama's aim was not  
363 "Change", his aim is Soft power or grassroots empowerment -Steve aims for easy-touse technology not for money or  
364 maximizing earnings, Drucker was trying to implement Renaissance in management science and not appreciation  
365 of Academia -Weiss did not aim for Iconoclastic Leader succession and Institutionalized Breakthrough, his aim  
366 was to survive and avoid catastrophic situation of Amitech. These goal s/ visions are intrinsic drive (attractor)  
367 which are dominating leaders styles and Leadership system is legitimate /on board by requirement of organization  
368 and environment.

369 3. Leaders use organization, environment, politics and different styles as media to reach their goals. Craig  
370 or Steve never limit their objectives/ dreams at organizational level and presidency is only a vehicle for Obama.  
371 Drucker's books were media helping him to institutionalize renaissance in management science and Weiss's  
372 breakthrough was his media to avoid tragedy after his retirement. Leader is leader when having impact on on  
373 organization and environment.

374 As we advance deeper in the knowledge economy, the basic assumptions underlining much of what is taught  
375 and practiced in the name of management are hopelessly out of date ? Most of our assumptions about business,  
376 technology and organization are at least 50 years old. They have outlived their time. (Management's new  
377 paradigms, Drucker, 1998 :). We shall Drop Our Tools and unlearn what we have repeated as discussed in  
378 above Cases and study Leadership a little bit differently. We shall bridge our distance from leaders' world  
379 and their interactions to be able to get accurate and generalizeable outcome. We need a complex model of  
380 leadership explaining the findings on above items 2 and 3 which will be studied later in this article, section  
381 "Complexity theory and model of leadership". But, item one is just recently helped by Neuro-scientific techniques  
382 through research on brain keeping always away from outside-in methodology. We will review these literature's  
383 to get light on our understanding only, and will avoid "Reductionist Thinking" and evade concentrating on one  
384 variable. In a complex system of emerged variables, the system patterns can be predicted by attractors which  
385 interact non-linearly and sometimes randomly. To draw a model of complex system, it is necessary to extract  
386 variables, relationships, attractors and relation of attractors on system patterns and affecting variables. Therefore  
387 Considering the fact that the variables and relations are complex and fuzzy and the model represent an emerged  
388 complex system, therefore the traditional method of reductionist approach and inputoutput test is not applicable.  
389 To test the applicability / validity / trustworthiness / generalize-ability characteristic of this model, test can be  
390 done by 1-finding the attractors of each variable in an emerged leadership system and 2-understanding the effects  
391 of attractor in variable and complex system. If we do not find any attractor for any of three variables then the  
392 model will not be valid for that case and therefore cannot be generalized.

393 As for item 18, 19, 20 and 21 of flowchart 1, in framework of complexity theory and proposed model, (midrange  
394 theory and model), we tested the model by proposing the attractors for different variables in above five Cases of  
395 leaders. In case our test is successful, then the midrange model in framework of semi-grounded theory developed  
396 based on 5 cases as well as model developed in complexity framework are confirmed. These systems are business,  
397 political and educational leadership systems and therefore, if the model is valid then the attractors shall exist  
398 and should have impact on whole emerged system operation. The result is listed in table 5. Referring to figure  
399 6, it will be interesting to find if this model is able to explain how the attractors changed over time and resulted  
400 changing the functions which was interpreted as leadership style.

## 401 18 Appendix 2

402 Complexity Theory (How to use?)

403 Complexity theory recently is used in Leadership study but differently. Therefore, referring to pioneers in

404 using complexity theory in leadership and management, Mary Uhl-Bien, Russ Marion, Bill Kelvey (2007)  
 405 who wrote the "Complexity Leadership Theory: Shifting leadership from the industrial age to the knowledge  
 406 era", the difference in perception/ methodology of using complexity theory is challenged. This will help to learn  
 407 and strengthen the theatrical and practical aspects of proposed model. The theory is not going to seek anything  
 408 but explain and formulate events and actions. Complex systems are characterized by nonlinear dynamics (small  
 409 changes can have BIG effects) and emergent properties (system attributes cannot be explained by the mere  
 410 sum of the parts). These systems are called Complex Adaptive Systems (CASs). Diverse individual agents are  
 411 massively entangled yet adaptable and resilient. CASs are capable of undergoing spontaneous self-organization  
 412 and leaps in performance. Examples include stock markets, gardens, human beings, weather systems, and  
 413 human organizations Systems are complex because cause and effect relationships are obscured. Delays, multiple  
 414 locations, and sheer number of details or moving parts make purely "rational" decision-making ineffective. In  
 415 complex systems the causes and effects are causes and effects of themselves. Causality is not linear but circular.  
 416 Causes and effects are not separable and therefore not manageable in isolation.

417 The obvious interventions, focused on fixing the parts or the structure, can make the problem worse. Meso  
 418 model of Complexity Leadership Theory also is trying to get into interaction of parts (Reductionist thinking)  
 419 and loose study of leadership as whole. Interaction of parts are valuable source of understanding when we study  
 420 how interactions occur by initiation specific attractor.

## 421 19 4

422 Complexity Leadership Theory, recognizes that leadership is too complex to be described as only the act of an  
 423 individual or individuals;

424 The word system originates from the Greek verb sunistanai, meaning to cause to stand together or to  
 425 combine. Modern definitions include: a group of interacting, interrelated, or To understand mechanisms requires  
 426 methodology that is capable of analyzing the interactions of multiple agents over a period of time (see Azy,  
 427 2007-this issue). Developing an understanding of the mechanisms that underlie Complexity Leadership Theory  
 428 and the conditions in which such mechanisms will emerge is critical as we move our theorizing forward into  
 429 embedded context approaches in leadership (Osborn et al., 2002). There can be any number of mechanisms  
 430 underlying the Complexity Leadership Theory function.

431 interdependent elements forming a complex whole; and, a functionally related group of elements. When we use  
 432 "too complex" or "mechanism" it may be taken that we have not differentiated "complicated" with "Complex".  
 433 Mechanism is for used for explaining interaction of complicated systems through cause and effect, but Complex  
 434 is a whole and case and effect are not separable and not manageable in isolation. That is true that, CAS  
 435 science focuses on the patterns (Attractors) of relationships among parts of the system, rather than the parts by  
 436 themselves or the structure, but it does not mean to keep reductionist focus on relations. By assuming a system  
 437 as Complex, we assume it is emerged system of agents and interactions. Individuals have the freedom to act in  
 438 unpredictable ways and their actions are interconnected in ways that change the context for others.

439 Systems move forward and change by examining, responding to and building on local patterns of interaction.  
 440 We read in "Complex systems, time and graphical analysis of organizational behavior" written by Linda  
 441 L. Brown, Daniel J. Svyantek 2001 that "The nonlinear views of systems and the research methods used to  
 442 describe nonlinear system behavior are commonly known as chaos theory or complexity theory. Nonlinear  
 443 research methods are non-reductionistic (Gallagher & Appenzeller, 1999): It is held that system behaviors  
 444 cannot be explained by breaking down the system into its component parts. Explaining the behavior of a complex  
 445 system requires understanding (a) the variables determining system behavior; (b) the patterns of interconnections  
 446 among these variables; and (c) the fact that the patterns of interconnections and the weights associated with  
 447 each interconnection may change across time scales in behaviorally significant ways (Koch & Laurent, 1999)."

448 They continue that : "Complex systems must be studied across time to find patterns of underlying order. A  
 449 phase space diagram illustrates the way in which systems transform themselves over time (Abraham, Abraham,  
 450 & Shaw, 1990) The phase space diagram shows whether behavior on this variable varies across time and the  
 451 amount of variation that occurs. The phase space diagram shows whether behavior on this variable varies across  
 452 time and the amount of variation that occurs. Phase space diagrams (Svyantek & Brown, 2001; Svyantek &  
 453 Brown, 2000a Svyantek & Brown, 2000b; Svyantek & Snell, 1999) have been used to understand order  
 454 in complex systems".<sup>1 2 3 4</sup>

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<sup>3</sup>"Complexity Theory and General Model of Leadership" "Complexity Theory and General Model of Leadership" © 2012 Global Journals Inc. (US)

<sup>4</sup>"Complexity Theory and General Model of Leadership" "Complexity Theory and General Model of Leadership" ©2012 Global Journals Inc. (US)





Figure 1: Figure 1 :

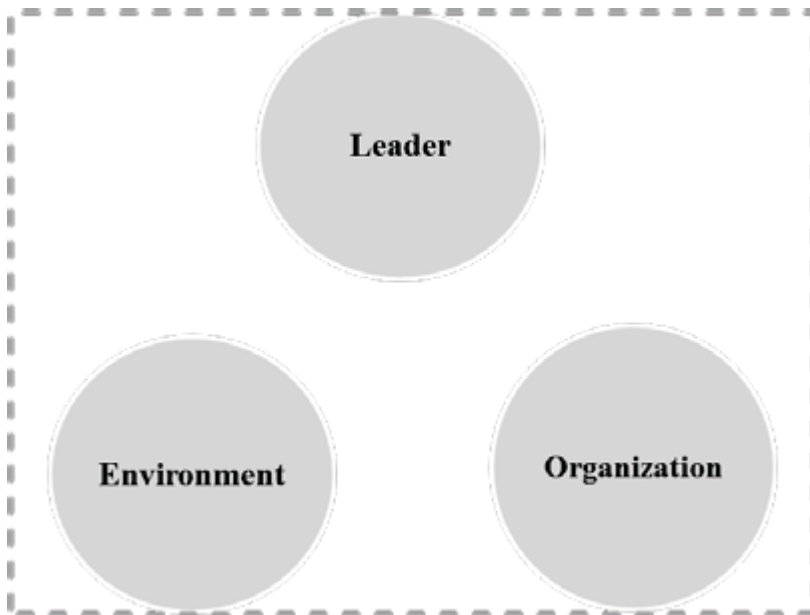


Figure 2:

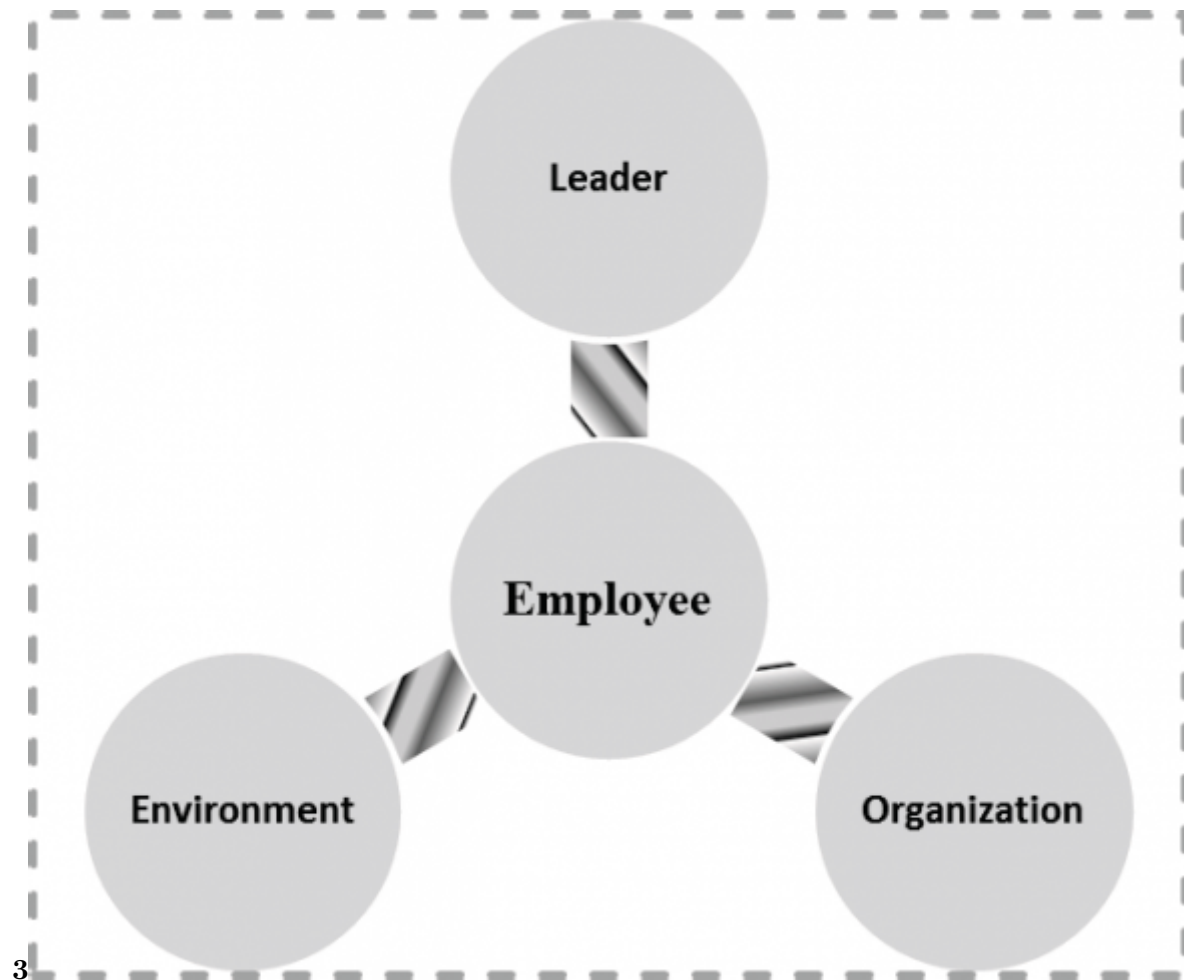
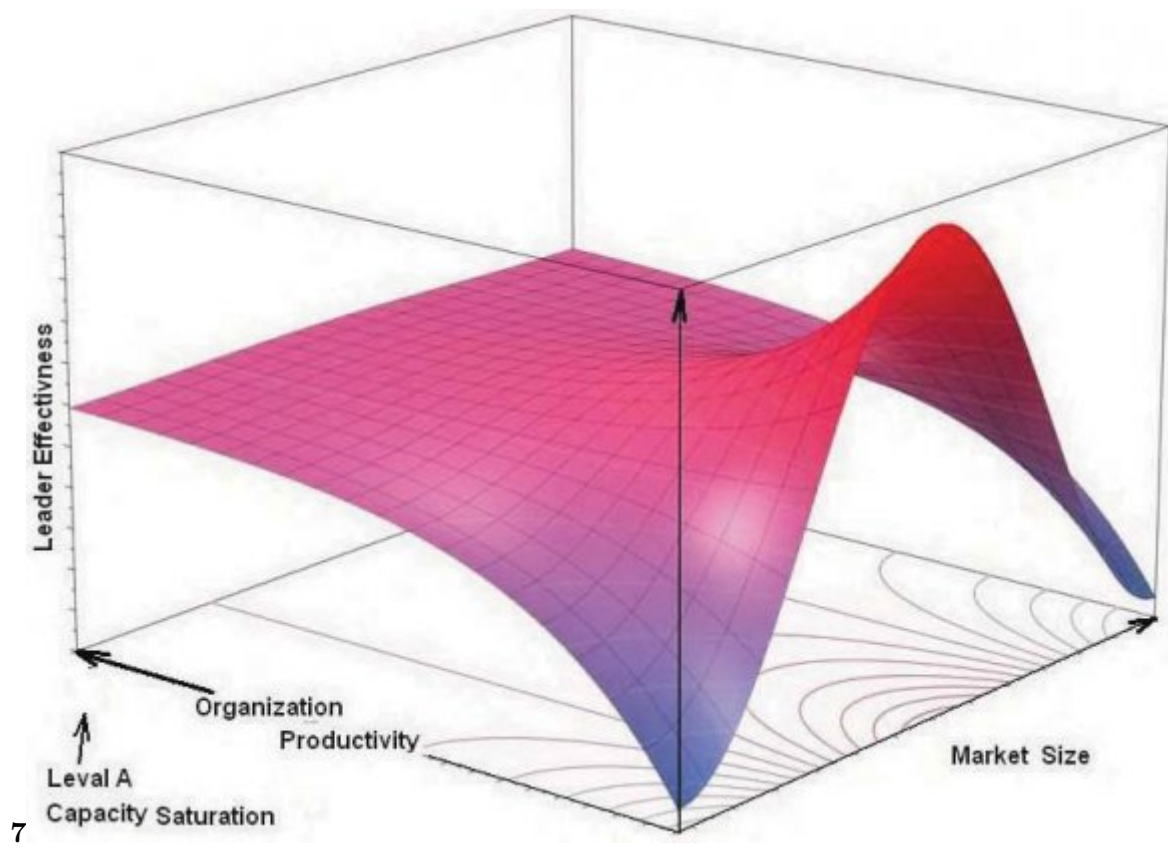


Figure 3: Figure 3 :



7

Figure 4: Figure 7 :

1

Style Variables

GreatLeader 1. 2. 1. 2.

Man Orga-  
niza-  
tion  
Envi-  
ron-  
ment

3.

Leader 1. 2.

TransOrganization 2. 3. 1.

Environment

3.

TransLeadership 2. Post industrialized, "Brain Power" Era, Demanding speed and innovative Brain: System

Orga-  
niza-  
tion  
Envi-  
ron-  
ment

Attractors

Brain: skilled hunters, Blue blood Objective :  
Perform Great mission and survive Tribes, clans,  
Failure to follow leads to death Brute force ac-  
cepted, fear-based Long-term power derived from  
survival skills

Feudalistic mindset to human at late development  
Brain: Controlling, measuring still Feudalistic  
mindset Objective : Reduce cost, increase produc-  
tion

Workers were inefficient, unskilled with agricul-  
tural mind Organize, control, command, measure  
and decide for results Lazy and inefficient workers  
are being developed and getting ready for partici-  
pation Mass Production at minimal costs  
Stability is a must, do what it takes to get the job  
done

Labor unions start getting power.

Figure 5: Table 1 :

- 
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5

Case	Variables	Attractors
	Leader	1. Brain: Empathetic and Genuinely believe of utopian states 2. Objective :”Soft Power” let say ”grassroots-empowerment”
Obama	Organization	Imperialistic governance, Capitalist parliaments, Allies as followers 1. USA: Ethos of the Bush and credit crunch still obtrusive
	Environment	2. World : Expect changes, stop the go-it-alone and conflict-is-good-for-business policies
Steve Jobs	Leader	1. Brain: Autocrat, an aesthete and anti-materialist, perfectionism 2. Objective : Easy-to-use technology
	Organization	Charisma institutionalized Apple, world leading technology
	Environment	Gate’s shadow, Credit crunch, Apple innovation appreciated
Craig	Leader	1. Brain: Iconoclastic, work alcoholic, No drive for Money 2. Objective : Grassroots democracy Happy devoted employees
	Organization	
	Environment	Crowd sourcing, Website policy appreciated by public
Drucker	Leader	1. Brain: Iconoclastic Knowledge creator, abandon all but tomorrow
	Organization	2. Objective : Renaissance in management science Books and Lectures (presenting his incredible body of knowledge)
	Environment	Dominant educational leadership by Academia turned its back on him,
Weiss	Leader	1. Brain: Iconoclastic, abandon all but tomorrow 2. Objective : Protect Ameritech from catastrophic situation” Ameritech with breakthrough changing culture
	Organization	
	Environment	Competition, Credit crunch

Figure 7: Table 5 :

Literature perception

1 Complexity science suggests a different

paradigm for leadership-one that frames

leadership as a complex interactive dynamic

from which adaptive outcomes (e.g., learning,

innovation, and adaptability) emerge.

Proposed model perception

Most of nature is made up of what complexity scientists call non-linear, complex adaptive systems -systems created by a number of diverse and independent agents emerged and are constantly changing and interacting with each other.

To apply this science to leadership, we shall define

leadership boundary and identify variables (agents) emerged. That is not outcomes emerge or dynamic emerge ? We shall leave our "Reductionist thinking" first and see the leadership as a whole and emerged (welded together and represent a unit body) variables

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*[Note: rather]*

Figure 9:



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