Complexity and creativity of organizations

Reaction Presentation – Individual Assignment for November 26th When we only take Edward Lorenz??™s text individually we can see that he tries to explain the possibility whether or not a flap of a butterfly??™s wings in Brazil can set off a tornado in Texas. The authors answer that it is in fact ??? unanswerable??™ for the time being given the instability of the atmosphere and the inability of humans as of yet to take into consideration all of the variables. We learn from the text that if indeed flaps from butterfly wings are instrumental to generate a tornado then we have to consider every other activity partaken by every other species, most importantly our own as potentially incalculable. Also if the hypothesis is true and configurations change by the tiniest of things, indeed a butterfly can generate a tornado and it can also prevent one. The text agrees on the multitude of variables and most importantly admits that human errors are as so far unavoidable.

On the other hand the text does disagree on the fact that it cannot prove whether or not the atmosphere is instable but evidence overwhelmingly points toward that. As far as the author thinks counter arguments are more than welcomed in light of new information or increases in technology be-they for or against the hypothesis. Finally we do have to take all of this into consideration because it??™s vital for our better understanding of our environment and reacting to it accordingly. The text of John S.

Bums about Chaos Theory and Leadership Studies: Exploring Uncharted Seas tries to broaden the perspective of readers by understanding the intricacies of chaos theory and offering a case study that is easily understandable in light of the broader structure of the text. Chaos theory is developed in the area of physics and mathematics but has increasing relevance in every area

of study, prior to the development of chaos theory, the majority of scientific study involved attempting to understand the world using linear models. Beginning with the work of Sir Isaac Newton, physics has provided the processes for modeling nature, and the mathematics associated with them have been in a linear nature.

Afterwards, when a study resulted in strange answers, when a prediction usually held, but not this one time, the failure was blamed on experimental error, otherwise known as noise. Since then it single handedly made scientists start to shift from the Newtonian way of linearity to discovering and accepting the inherent chaos all around them. ??? Even if the universe functions in a deterministic way, it does beyond the capability of humans to precisely predict the future and out of their range of control.??? The author also tries to find out the answer whether it is possible to move from a chaotic analysis of pendulums and weather systems to understanding chaos theory as the new paradigm the under grids leadership and management theory. The lessons learned from the text about the Strange Attractor (Zone of Phase Transition) tries bridge the physical sciences to social sciences. We have to mention here that since every system is made up of agents and those agents function in relationship with each other, so rules are developed for a better functioning.

Thus necessarily ??? the legitimate system evaluates productivity of the agents and their schema through negative feedback to reinforce adherence on the agreed upon schema ??¦ but agents also belong to shadow systems that do not necessarily exist to carry out the primary task of the legitimate system thus having the freedom may more easily implement environmental

changes to the legitimate one.??? In the text the Phase Transition zone is in the middle between the Zone of Stability ??? ossification/death??? and Zone of Randomness ??? complete anarchy/disintegration???, so the main aim according to the author is to maintain oneself in the middle while continuously self-organizing, articulating core values, fulfilling primary purposes to respond to a dynamic environment. To delve even deeper into how and what leadership and management should be in light of new information, but continue to fulfill the missions and values of the organization even if it continues to transform how it pursues those.

The text then continues on the case study of Sir Ernest Shackleton??™s and the voyage of Endurance where leadership was quite observable but his success was not necessarily a result of that, since the only reason he and his crew survived is because he applied all of his skills in reaction to the harsh environment. Witch was consistent with chaos theory. He started out within the stable zone but due to constant environmental changes was forced to utilize double loop learning and positive feedback. The conclusion was that ??? the role of good leadership is not to make things stable, any more then the role is to drive an organization into chaotic random meaningless behavior??¦we must learn to fear rigid control and stability as well as radical freedom and anarchy.??? In the text by Ralph D. Stacey ??“ Complexity and Creativity in Organizations ??? this book claims that the science of complexity offers a comprehensive new framework for drawing together a number of already existing insights about human systems into a coherent theory of organizational evolution that is dramatically different from the one currently dominating our thinking. The first step in sustaining this claim

must, therefore, be to demonstrate that human systems are indeed the kind of system that the science of complexity deals with??¦ the total system, therefore, has a holographic or fractal aspect in which the parts interact continually to recreate the whole and the whole affects how the parts interact.

(A fractal is a pattern that is repeated in a self-similar way at many different levels. The pattern is self-similar in that it is always recognizable but never exactly the same. It is a pattern that is repeated in an irregular way).??? By careful reading at this point we can already draw parallels with the other texts because it only restates what the others examined but from a different perspective. Thus we learn yet again that organizations are complex adaptive systems and the only way they can make a living is through interaction. The Nonlinearity of Human Networks can be connected with the Models of the Chaotic Organizational Environment of John S.

Bums were we see again but formulated in a different way how the legitimate and the shadow system are intertwined. ??? Organizations move around the loop of discovery-choice-action, evolving through both positive and negative feedback, both simple single-loop and complex double-loop learning, co-creating and co-constructing their world, and acceptable organizational models must account for this. The feedback process described above produces a stream of actions, a stream that has some pattern and is undertaken to meet some purpose. At its most basic level, this purpose is the survival of the system, or parts thereof, in competition with other systems, or parts thereof.??? All three texts relate to one another because they all describe an emerging scientific discipline whose boundaries are not

clearly defined. The terms complexity theory and complex systems theory provide a better description of the subject matter, but the term chaos theory grew to be more widely accepted.

While all the authors agree, Bums text seems to be the one that gives a greater overview of chaos theory, with the Butterfly effect being one of its main aspects by evoking a fairly simple example just as it was initially intended ??? complexity through simplicity??? and Stacey??™s text addressing the relation of chaos theory in regarding social sciences in a more detailed view. By integrating the first two read texts the third one falls in place quite simply in the broader theory, most of the other texts arguments complement each other on the idea that ??? human systems are nonlinear feedback systems and that they are coevolving, interacting networks of agents and subsystems whose behavior is driven by schemas and who learn and in essence having a fractal nature.??? One of the main problems of chaos theory as also explained in the Butterfly effect is that even though scientists had began to prove it and learn about it more and more, by its very definition it implies complexity. The most obvious arguments is whether we are trying to account for true chaos or merely a more complex form of order requiring millions of terabytes of computing power to resolve and since one cannot absolutely prove or disprove we must of course take it into account and hopefully answer all the remaining questions. Considering both sides of the argument is easily forgettable since all three speak very convincingly about multiple cases were chaos theory has proved itself while also mentioning all the inconsistencies and strengthening

its message because all actions could be absolutely right and/or wrong at the same time.

The conclusion in a larger sense, chaos and complexity theory is metaphorically useful in that they offer lessons in how to think about the leadership management and strategic issues. We should be wary of overreaching and trying to do more with chaos than the theory is able to deliver. The theory reminds us to remain flexible and prepare for the unexpected and, if the system is indeed one of self-organizing complexity, to accept that our ability to understand this much only makes us realize how much more there is still to understand. Bibliography: Lorenz E. ??“ The Butterfly EffectStacey ??“ Complexity and Creativity in OrganizationsJohn S. Bums – Chaos Theory and Leadership Studies: Exploring Uncharted SeasChaos Theory: http://library.

thinkquest. org/3493/noframes/chaos. html (accessed 2010-11-27)Chaos Theory/Butterfly Effect: http://www. nasca. org.

uk/chaos/chaos. html (accessed 2010-11-27)Vincente Valle Jr. ??“ Chaos, Complexity and Deterrence