Chapter 7.4

Exploring the Implications of Complexity Thinking for the Management of Complex Organizations

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ABSTRACT

This article is an attempt to explore the implications of the emerging science of complexity for the management of organizations. It is not intended as an introduction to complexity thinking, but rather an attempt to consider how thinking 'complexly' might affect the way in which managers do their jobs. This is achieved in a rather abstract way with some theory, but I hope the general message that there is no one way to manage comes through loud and clear, and that management is as much an art as it is a science (and always will be). In a sense complexity thinking is about limits, limits to what we can know about our organizations. And if there are limits to what we can know, then there are limits to what we can achieve in a pre-determined, planned way.

INTRODUCTION

This article is an attempt to explore the implications of the emerging science of complexity for the management of organizations. It is not intended as an introduction to complexity thinking, but rather an attempt to consider how thinking 'complexly' might affect the way in which managers do their jobs. This is achieved in a rather abstract way with some theory I'm afraid, but I hope the general message that there is no one way to manage comes through loud and clear, and that management is as much an art as it is a science (and always will be). In a sense complexity thinking is about limits, limits to what we can know about our organizations. And if there are limits to what we can know, then there are of course limits to what we can achieve in a pre-determined, planned way. Complexity thinking offers us a rigorous and scientific explanation as

to why to some degree we are helpless and that surprise is inevitable, as well as provide some tools for thought that help us manage our inevitable shortcomings and limitations. In a way, accepting that we have limitations, and that we can never have complete control over the future evolution of our organizations, is rather emancipating. Complexity thinking is about the middle ground between extremes, and so although managers are to a degree helpless and at the mercy of the 'system', it certainly does not follow that there are not many opportunities to affect organizational behavior in desirable, semi-planned, ways.

The first section explores the difference between the view that organizations are complicated and the view that organizations are complex. This distinction leads to very different conclusions about what we can mean by the term 'management theory'. This first section is a little philosophical so I hope it doesn't scare anyone off! Linear (complicated) thinking is often rather superficial and simplistic, whereas nonlinear (complex) is more sophisticated and often requires more time to do properly. Complexity thinking actually requires us to spend a little more time thinking and a little less time working.

The next section presents and discusses an important concept in complexity thinking: incompressibility. It is this very notion that denies the possibility of a nice and neat theory of organization that managers might learn and execute. I'm sorry – being a good manager is always going to be a challenging job; there's no easy way out!

The penultimate section considers three schools of thinking within the complexity community followed by a brief discussion of how each school might inform management activity. Some concluding remarks will be offered to close the article, but first let's consider what we might mean by labeling an organization 'complex'.

WHAT IF ORGANIZATIONS WERE MERELY COMPLICATED?

What if human organizations were *complicated* rather than *complex*? The simple answer to this question is that the possibility of an all-embracing Theory of Management would almost certainly exist. This would make management very easy indeed as there would be a book of theory (*The Management Bible* – it would probably challenge the current all-time bestseller in sales!) that would tell the practicing manager what to do in any given context. The means of achieving effective and efficient organizational management would no longer be a mystery. But what is it about the concept of 'complicated' that makes this scenario plausible? Why has the possibility of a final management theory not been realized yet, given the millions of man-hours and published pages devoted to the search? Why does approaching organizations as 'complex' rather than 'complicated' deny us of this possibility?

A very common (but incomplete) description of a complex system is that such systems are made up of a large number of nonlinearly[1] interacting parts. By this definition the modern computer would be a complex system. A modern computer is crammed full of transistors which all respond nonlinearly to their input(s). Despite this 'complexity' (sic) the average PC does not show signs of emergence or self-organization; it simply processes (in a linear fashion) the instruction list (i.e., a program) given to it by its programmer. Even the language in which it is programmed is rather uninteresting. Although there are many programming languages, they can all be translated into each other with relative ease. Technically this is to say that computer languages are *commensurable* with each other. A line of code in C# can be translated into Visual Basic very easily – the one line of C# code may require more lines of VB code to achieve the same functionality but it can be done in the vast majority of cases. The universal language into which all such languages

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