Editorial introduction to the special double issue on Complexity Thinking and Systems Theory

Kurt A. Richardson, Dr Kurt Richardson[1], Wendy Gregory, Gerald Midgley
1 Emergent Publications

Abstract

Introduction

Welcome to Volume 9! To begin this new look volume of *E:CO* we have, among others, brought together a special collection of papers and articles that are drawn from no less than three recent complexity conferences. All of the academic and practitioner section papers were selected from the recent ANZSYS/ISCE collaboration that resulted in the International 11th ANZSYS / Managing the Complex V conference that was held December 5-7, 2005 in Christchurch, New Zealand. The purpose of this event was to provide a lively forum for discussion and debate for a wide range of academics and practitioners in the fields of systems thinking, complexity science and management. People from other disciplines who had an interest in the application of systems thinking and complexity approaches were also invited to participate. The event brought together thinkers and practitioners in the fields of systems and complexity as it seemed to the organizers that there had been a significant international resurgence in these areas in recent years.

The fields of systems and complexity have many similarities, yet they are being developed by two overlapping research communities that have unique insights to bring to bear on the management of 'wicked' problems. By providing forums in which people working at the frontiers of complexity and systems thinking can learn from one another, significant new insights for action can emerge. At the end of the day, it is important to the vast majority of those working with complexity and systems ideas that they are able to make a positive difference in people's lives. It is therefore vitally important that we share our insights and build a community of practitioners that can take the research agenda forward. A primary goal of the 11th ANZSYS / Managing the Complex V event was to bring together as many people as possible engaged in complex environmental, social and business issues, with the intention of promoting an intense and lively debate with real implications for systems and complexity practice. The hope of the organizers is that this conference was a step in the right direction.

It is no secret that in recent issues of *E:CO* we have attempted to raise awareness amongst complexity thinkers of the extensive systems thinking literature, and its relevance to our community. The Christchurch event was a major step in this endeavor. From the complex systems perspective, papers were submitted by experienced complexity thinkers, as one would expect. A series of papers were also submitted by systems researchers who took the opportunity at ANZSYS 11 to attempt to use the language and ideas of complexity thinking in their systems research. This led to some interesting syntheses in which complexity ideas were applied in ways not necessarily familiar to *E:CO*'s audience. One reason to be particularly interested in these papers is because they emerge at the boundary between 'systems' and 'complexity'. Purists might argue that if people want to use complexity concepts differently, this should be discouraged. Such linear thinking is often associated with calls for the solidification of definitions that can enable measurable progress. Apparently, flexible and fluid applications hinder such efforts. For some reason the need to measure progress often accompanies the need to establish boundaries – actually the need for boundaries is derived from the need to measure. So measuring progress in complexity thinking requires that we first determine exactly what we mean by the term 'complexity', thus allowing us to define exactly what complexity thinking is; its tools, its methods, its areas of applications, etc. If we accept this, then complexity thinking would be squeezed into the form of a nice and neat '-ism', such as reductionism or holism. To those purists who would support such an endeavor, the following quote from Dewey is offered:

> *"For in spite of itself any movement that thinks and acts in terms of an 'ism becomes so involved in reaction against other 'isms that it is unwittingly controlled by them. For it then forms its principles by reaction against them instead of by a comprehensive, constructive survey of actual needs, problems, and possibilities." (Dewey, 1938: 6).*

Essentially what this is saying is that reference to external issues gets lost in the drive for boundary solidification. We would hate to think that the apparent ignorance of the systems literature in the complexity community is the result of the solidification, or

institutionalization, of our topical boundaries. As soon as that happens, our approach(es) will slowly become irrelevant, and we will begin to think for the sake of thinking and not for the sake of solving problems in an effort to improve the lives of ourselves and others. We may kid ourselves into thinking that 'complexity' is important, but the moment we allow the rigid application of language to dominate over fluid application, we have essentially removed external reference from the equation and replaced it with an increasingly irrelevant idealization. The editors of E:CO hope that this argument justifies our loosening of the 'complexity' boundaries for this particular issue.

The first seven papers are all taken from the 11th ANZSYS / Managing the Complex V (although they have been significantly revised since their birth as conference papers), and yet they do not represent even half of the material on offer in this special double issue. Our other familiar sections are bursting at the seams. For example, the Complexity and Philosophy section contains three (rather than the two that would usually be expected in a double issue) thought-provoking articles, the first of which offers an analysis of complexity theory using complexity theory itself. The continued relevance of complexity theory / thinking relies heavily on our willingness to dissect rather than protect it. Fortunately, complexity thinking itself actually encourages such a critical stance.

Complexity and Philosophy also explores how the field of ecology (a close cousin of complexity) is different from the mechanistic sciences in terms of the role of (and even the possibility of establishing) Natural Laws. This is followed by a thorough analysis of the concept at the heart of *E:CO* – emergence: a term which has so far resisted being pinned down and rigidly defined.

This issue's Classic Paper section contains two fascinating papers written by Frederick A. von Hayek. The inclusion of these papers was originally suggested by Neel Chamilall. Neel was in the process of writing an extended introduction for these papers, but was unfortunately involved in a serious car accident that prevented him from finishing. We wish Neel all the best and hope he makes a full and speedy recovery. We would also like to express our gratitude to Rodrigo Zeidan and Mihnea Moldoveanu who volunteered to prepare introductions for the two Hayek papers selected. They both did a very competent job under a very tight time restriction. Many thanks indeed!

The first article of the Forum section concludes the ongoing series on Systems Theory and Complexity by introducing an edited transcription of a lecture given by Gerald Midgley at the 1st International Workshop on Complexity and Policy Analysis which was held June 22-24, 2005 in Cork, Ireland, hosted by the ETHOS Project, Department of Government, University College, Cork. The aim of the Systems Thinking and Complexity series was to explore general systems laws in terms of complexity theory, and to highlight the similarities in the evolution of the complexity and systems literatures. Gerald's presentation provides a fitting finale.

Webb *et al.* explore the role that swarming models play in learning about complexity, suggesting that they are very useful indeed, even if they are regarded by some as flawed natural science models, imported and overused within the social sciences.

It is often assumed in the modern technological world that 'being connected' is a good thing. Our next article explores the limits of this assumption by presenting the early results in a study that investigates the relationship between connectivity and behavior / function. It would seem that 'being connected' is only beneficial to a limited degree, again illustrating the central role of 'balance' in complexity thinking.

Ken Baskin gives us his views on the third conference to be mentioned in this issue – the 3rd International Workshop on Complexity and Philosophy held February 22-23, 2007, in Stellenbosch, South Africa, which was hosted by the Stellenbosch Institute for Advanced Study (STIAS). Ken's review of this event illustrates the growing maturity with which the implications of complexity for philosophy are being explored. Roll on number 4!

Before reviews of some recent contributions to the complexity booklist are offered, Ron Schultz, in his ongoing Adjacent Opportunities, illustrates the importance of 'applied chutzpah' in the first steps of initiating radical change. Change often begins with someone have the foresight as well as the effrontery to suggest something quite different. Emergent processes then take over and determine whether change will follow, or whether the initial input of creative and emotional energy is dissipated.

To finish, there have been some rather obvious changes to the aesthetics of *E:CO* for Volume 9. However, a more significant change is the inclusion of embedded web links in the reference sections of each paper. These of course can only be exploited via the online edition that all subscribers have access to. A cursory glance at the reference section of almost any 'complexity' paper is all that is needed to witness the range of written sources used to inspire explorations in complexity thinking. From this issue onwards, every reference will contain a link that will take the online reader to an Amazon.com link for books (where summaries and reviews can be found – and in many cases selected pages from the books can be seen… and of course, the books can be purchased); to a journal summary page for journal articles (from which one can often get to the journal's homepage); as well as for regular internet web page sources. We hope you find this feature a useful tool in your exploration of 'complexity space'.

References

1. Dewey, J. (1938). Experience and Education, ISBN 9780684838281.