

Book Reviews

A Review of *On Complexity*

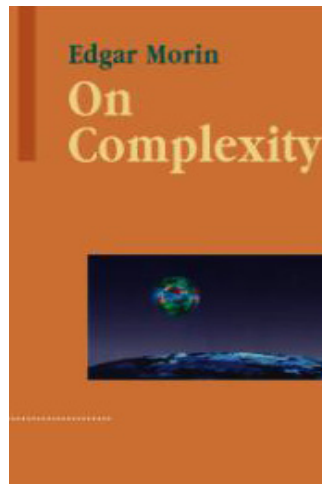
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Introduction

On *Complexity* is a beautifully written synopsis by one of Europe's most influential intellectuals today, Edgar Morin, of his treatise on complexity theories. For six decades Morin has been highly influential in French, Italian and Spanish-speaking countries. For those who have been reading Morin in other languages for decades, it is a monumental event to see this major complexity scholar's work finally published in English. Morin's chef d'oeuvre is a six-volume work on transdisciplinary complexity, the first and only of such scope, entitled *The Method*, the first volume published in 1977, the last volume in 2002, and it seems that it remains the largest and one of the most significant works in the complexity field. There have been dozens of monographs and dissertations dedicated to Morin's work, and at least five graduate programs focused on *The Method*, located in Italy,

Mexico, Peru, France, and the United States. Yet, only one volume of *The Method* and a handful of Morin's other books have previously been published in English.

On Complexity is a smooth, readable synopsis of a major thinker's most compelling theories, synthesizing his greatest insights in a short, highly readable narrative, including a long and masterful introduction to this mad-deningly multidisciplinary and fascinating thinker. Having read many introductions to Morin in other languages, I find this volume the best to date, perhaps naturally, as this is the latest synthesis of the key ideas in a long and variegated career.

'On Complexity' in Context

Morin's work provides a long-awaited compliment to the assiduous work of the natural science complexity research centers in the United States. While scientists at the Santa Fe Institute and other natural science research centers remain skeptical of this perspective of complexity theories writ large, or what Morin calls Generalized Complexity Theories, this seemingly unavoidable gap in understanding of complexity between natural scientists and social scientists need not persist, at least not in its present, pernicious form. For the amenable natural scientists, Morin provides a major contribution to the dissolution of the natural-social science divide in complexity studies, offering a much-needed, in-depth analysis of complexity's truly transdisciplinary capacity. Moreover, Morin provides an elaborate treatment of complexity both ontologically and epistemologically. Indeed, the presentation of complexity as epistemological lens is one of Morin's greatest contributions.

Morin argues that any theories adequate to the treatment of transdisciplinary

phenomena require us to face interconnectedness among phenomena, foginess, uncertainty, and contradiction. However, critically, we can elaborate conceptual tools and principles for approaching complexity more effectively, and we can begin to perceive the face of the new paradigm of complexity that should emerge. Thus Morin transforms a deficit view of uncertainty and ambiguity into a generative, creative, if always somewhat problematic, dimension of knowledge, particularly applied knowledge. At the current time of coalescing global crises and rapid change, Morin's view of complexity as a rich resource for application in realms such as business, economics, politics, and the environment is particularly poignant.

Born in 1921, Morin has been integrally involved in the history of complexity theories throughout six decades, a major participant in the field when the nascent fields of cybernetics, systems studies, and systems biology were first converging into complexity studies. In fact, Morin is arguably one of the founders of complexity theories, though he would humbly note the earlier works of contemporaries and predecessors such as Bertalanffy, von Neumann, and more recent French theorists such as Henri Atlan. And he would credit his rich encounters in Californian academic circles during a year-long visit to the Salk Institute in 1969. Nonetheless, it was Morin himself who produced the first true synthesis and philosophical treatment of complexity studies writ large, *The Method*.

As such, *On Complexity* should be priority reading for all scholars interested in complexity theories and, to use one of the many terms perhaps first coined by Morin, 'complexity thinking.' Attention Santa Fe scholars! Morin must be taken seriously. Morin's essay clearly explaining the gap between 'restrained' complexity, i.e. Santa Fe basic science, and 'generalized' complexity, is one example of his many valuable essays that could not be scrunched into this short introduction, and as such, for natural scientists, Morin's 2005 essay on restrained and generalized complexity, translated into English under the title "Restrained Complexity, Generalized Complex-

ity," would be a necessary compliment to *On Complexity*¹.

Nonetheless, this volume is a remarkable stand-alone achievement. I was astounded to find a work in which the many thousands of pages of Morin's books and articles—a long, prolific career—was synthesized so artfully in eight essays and two appendices. This short volume succeeds already in presenting an overview of many of the great ideas that Morin has been honing and developing for decades. Readers should be aware though that for each of the points made here there are many pages of supporting details, references, nuances and examples that may be found in his longer volumes. In one of these lengthy books Morin proposes over twenty definitions for the term emergence alone. Thus, this excellent introduction is to be supplemented with Morin's dozens of highly detailed books on complexity, which, little by little, are all being translated into English.

The Text

Alfonso Montuori is well-placed to edit the book, as he both knows Morin personally and is director of one of the leading graduate programs in integral and complexity studies in the United States². Montuori's introduction embodies Morin's way of thinking in wonderful ways, reviewing many of the most inspiring facets of Morin's kaleidoscopic career. Morin is at once a leading sociologist, a philosopher of science and sociology, a leading transdisciplinary thinker, a film maker and film critic, a prescient and piercing inquisitor of popular culture and social trends, a passionate advocate of environmental issues, and perhaps the world's foremost theorist of complexity theories writ large, or as he calls it, "Generalized Complexity Theories." Lucidly written, well synthesized, Montuori offers a beautiful fif-

1. Morin, E. (2005). "Restrained Complexity, Generalized Complexity," presented at the Colloquium "Intelligence de la complexité: Epistémologie et pragmatique," Cerisy-La-Salle, France, June 26th.

2. Transformative Studies doctoral program, the California Institute of Integral Studies, San Francisco, California.

ty-four page entrée to Morin the man and the scholar, the most appropriate approach to this thinker.

The rest of the text is Morin's writing translated into English by three different translators, and focusing on Morin's most influential ideas. If it is written in a refreshingly cogent, transdisciplinary, manner, it is at the same time a thoroughly profound and sophisticated look at the subject. *On Complexity* reads like a coherent and persuasive distilled account of Morin's work, with great care taken to live up to two contrary demands. The book both adequately represents the rather sophisticated philosophical and sociological arguments, while also presenting them in lucid prose, attentive to offer the lay reader sufficient context, key concepts, and explanations, making his often challenging ideas accessible to all.

In *On Complexity* Morin provides an eloquent overview of his best ideas:

- A description of the world without complexity theories, or, 'the simplicity paradigm';
- The significance of complexity to power, politics, ideology, and to everyday thinking, analysis and rationality;
- The nature of organization, as related to order and disorder;
- Key applications of complexity to everyday life, thinking and business management;
- The nature of the subject;
- The epistemology of complexity;
- Systems thinking, and;
- The nature of autonomy.

An essay on the paradigm of simplicity may seem trite or superfluous. On the contrary, the move is sound, providing the necessary juxtaposition and context to his argument. He sets up complexity not just as a set of theories, not just as one position amongst many, but as a paradigmatic proposition, thoroughly transdisciplinary.

Morin's unusual breadth of vision may leave some people slightly mystified. Indeed, Morin's aim is radical. He is not simply fram-

ing or analyzing particular issues or areas of knowledge as complex systems dynamics. Nor is he developing a set of complexity theories that stands outside most knowledge as a new or alternative model or method. Rather, Morin construes complexity as a fully integrated commentary on the very nature of knowledge and knowing. As Montuori notes in the introduction, "Morin is pointing in a new direction proposing his en-cyclo-pedic method that circulates knowledge between disciplines, and proposes the paradigm of complexity not as a panacea, not as a solution to the problem, but as a way of approaching the organization of our thinking and thinking about organization" (Morin, 2008: xxviii).

Part I presents the overarching quandary: We have acquired extraordinary knowledge about the physical, biological, psychological, and sociological world. Yet even while science expands the domain of empirical and logical methods of verification, and the light of reason seems to have driven superstition out of contemporary discourse, at the same time, in every area of human affairs, troubles stemming from ignorance and ideologies persist and increase alongside the advances in knowledge. Morin's major premise is that the proliferation of subdividing disciplines diminishes as well as improves our knowledge.

The compliment to this great branching and complexification of knowledge is complexity theories writ large, or generalized complexity theories, capable of examining the ways in which knowledge—even as it expands and diverges—is simultaneously linked together and reconciled. Similarly, at the heart of all experience is the difficult, intriguing conundrum of emergence, intelligence, disorder, order and self-organization, which can only be fully construed from a transdisciplinary, conjunctive way of thinking. Our disciplinary mindset is blinding us to these more challenging issues at the core of life's processes and the human experience.

If this sounds abstract, it is, and this is perhaps the strongest criticism of Morin's work. However, Morin skillfully thwarts this critique in each of his arguments, from physics to biology to sociology, time and again. While

his view may be broad, he has a deep knowledge of his subjects, whether it be philosophy, philosophy of science, sociology, physics, biology and cognitive science, as he does of the complexity theories he has developed about these areas, and he has a sophisticated knowledge of the philosophical reasoning with which he links them together. Morin draws upon a vast array of thinkers in diverse fields and an equally broad range of facts, details and examples from these numerous fields to build his argument.

Having reframed similar arguments now over the decades, in this volume Morin has repeatedly refined these arguments. Evidence of the need for complexity thinking includes the second law of thermodynamics, “a hemorrhaging principle of degradation and disorder.” In place of the supposed logic and physical simplicity, we discovered extreme microphysical complexity. Particles are not primary building blocks, but rather a frontier onto a perhaps inconceivable complexity. Next, the cosmos is not a perfect machine, but a process of simultaneous interconnected processes that are both organizing and disorganizing. Finally, it now appears that life is not a substance, but rather a phenomenon of extraordinarily complex self-eco-organization that produces autonomy. From now on, he writes, it is evident that anthropo-social phenomena cannot obey principles of intelligibility that are less complex than those henceforth required for natural phenomena. We must face the ensuing antro-po-social complexity, and not dissolve or dissimulate it.

The Book’s Potential Uses

This book can be used as a set of essays in a wide range of settings—academia, business, and organizations, and at a wide level of academic stages—from late high school or undergraduate straight through graduate and professional analysis. It will challenge thinkers at different stages in different ways. While the introduction is longer, most of the eight essays are between ten and twenty pages in length. The format is ideal for bringing these ideas into the classroom, the boardroom, the agency or institute. The essays here have the qualities of brev-

ity and clarity that render them much more valuable as introductions to Morin’s ideas than many of the longer essays throughout his other books.

The Book’s Contributions

For social scientists, philosophers and trans-disciplinarians, Morin’s work fills in myriad long-standing gaps in Anglophone complexity studies. Morin offers a certain passionate and far-reaching philosophical view of the whole of complexity theories and what they imply for the future of knowledge, education, and addressing global issues. For all thinkers, Morin provides a rare combination of expanse of deep knowledge in diverse disciplines and a strong grasp of the entire range of disciplines that gave him such a unique ability to analyze the more underlying meaning and significance of complexity theories in biological systems, ecosystem, and social systems, as well as philosophy.

Moreover, one of Morin’s important contributions is the development of an epistemological lens of complexity that is ensconced in and applicable to the range of natural sciences, social sciences, and humanities. Morin provides the basis for applying his ideas to ontology and epistemology, and for parsing the concepts of the subject and the system. In addition, the book is an excellent addition to the literature on complexity in such fields as business management, organizational theory, pedagogy, health systems, and political theory, contextualizing each of these a bit more deeply in the greater frame of complexity as worldview, as paradigm. For those wishing to improve the sophistication of their use of complexity in any field, Morin is necessary reading.

The book leaves some threads hanging. A few significant chapters are quite short. Business theorists will be disappointed to find that the chapter on complexity and enterprise is just six pages and that on complexity and action only four pages. Although, significant details on organizations and information are to be found in some of the longer, more theoretical chapters, especially Chapter Two, “Complex Theory and Design.” In this sense, this is a broad-brush treatment that does not provide a

detailed new trove of specifics in all areas.

All this just underscores that the book is truly intended as an introduction; readers interested in more detail will have to turn to his longer books, and in some cases, wait for the English version. The more elaborate sections in this book are those that provide the best overall sense of Morin's vision. With respect to further glimpses of Morin's work, it is worth the wait.