Book reviews

COMPLEXITY FOR CLINICIANS EDITED BY TIM HOLT

Radcliffe Publishing, 2004
PB, 169 pages, £27.95, 1 85775 855 2

In the late 1990s, a small number of GPs came together under the auspices of the Complexity in Primary Care Group. United by a common concern for the limitations of the prevailing approach to evidence-based practice, they took their inspiration from the emerging field of non-linear systems dynamics. Converging from an array of disciplines ranging from meteorology to biology and reflected in the study of chaos and complexity theory, it offered new and exciting avenues for exploration that resonated with our perspective of the world from primary care.

With time, individuals developed areas of special interest, but for Tim Holt the pathway seemed clear from the outset of our early meetings. His was to be a pursuit of the application of chaos theory to clinical medicine, a journey that has been characterised by single mindedness and a clarity of thought in an area where others of us have invariably struggled.

In *Complexity for Clinicians*, Tim explores the theory and practical implications of this new way of thinking from the perspectives of clinical mechanisms and delivery. He suggests that they can offer alternative and in some cases more adequate understanding of health and disease from the perspective of prediction, planning and intervention. These are bold claims in an era of increasing uncertainty and his objective is to bring these theoretical insights to the attention of clinicians while highlighting their practical potential for everyday practice.

The book is constructed in three parts. Part one deals with basic theory. What do we mean by complexity? What is non-linearity? How does chaos differ from randomness? These are difficult and often contested areas which are addressed in a way that is accessible to the general reader.

Part two applies complexity to clinical scenarios and it is here that the book will find most resonance with practitioners. GP, Andrew Innes, explores the application of complexity to the central core of our work — the consultation. He argues that complexity principles resonate with the experience of practitioners in the undifferentiated environment of primary care and can offer a coherent theoretical framework that is more relevant than existing models. Physiology has been termed the 'mother of chaos' and the remaining chapters in this section address applications to cardiology, diabetes and mental health. Although studies in all these areas are at a very early stage in their development, the opportunity for classification, pathophysiological understanding and treatment are exciting and potentially of great significance.

The final section explores the way in which complexity modelling might improve the delivery of care at population level by recognising the interactive patterns of clinical variables and their dynamic evolution over time. Although this area is clearly important, the lay reader will find this section challenging and in many areas it lacks the coherence and accessibility of earlier chapters.

It is inevitable that a text in this difficult area will be compromised at times by the conflicting dictates of accessibility for a general readership and a need for academic credibility and rigour. For me, the book's major achievements are twofold. First, it offers an important and unique overview of the potential of complexity science for the clinician. But perhaps, its most important achievement is reflected in the nature of its production. Although Tim Holt is now a lecturer in the Centre for Primary Healthcare Studies at the University of Warwick, the book was conceived and written while he was a full-time GP in rural North Yorkshire; a project that was accomplished during his weekends and without any formal support. From this perspective, *Complexity for Clinicians* shines out as a beacon for the historical model of general practice research — a witness to the fact that in an era of healthcare re-engineering and academic consolidation, it is still possible to ignite the embers of free-thinking and independent general practice research.

DAVID KERNICK

COMPLEXITY AND HEALTHCARE ORGANISATION: A VIEW FROM THE STREET DAVID KERNICK

Radcliffe Publishing, 2004
PB, 392 pages, £29.95, 1 85775 814 5

The second of three in a series of books on complexity theory from Radcliffe Publishing, this substantial work describes how complexity theory may be applied to healthcare organisation.

The editor, David Kernick, needs no introduction to regular readers of this Journal. A GP based in a research practice in Exeter, he has played a major role in the leadership of the Complexity in Primary Care Group, established in 2000. His connections have garnered a wide authorship for this book, whose 28 chapters and many illustrations give undoubted value for money. The foreword by Helen Bevan of the NHS Modernisation Agency reflects the support her organisation has given to complexity research in recent years. Contributors include practitioners and academics from (primary and secondary) health and social care, management consultants, policy makers, philosophers and artists.

As well as the authorship, the book's scope and content are broad. I

particularly enjoyed the coverage of systems theory, organisational learning, educating for capability, and the critical care programme. The chapter on community regeneration provides a clear example of complexity principles improving the lives of individuals and communities. The artists' contributions work well, and a further chapter, written more or less as an unplanned conversation, similarly transfers the principles of responsive communication and adaptation to the layout (and not just the message) of the book.

Arising from mathematics and the physical sciences, complexity theory has readily (and usefully) been transferred to management and social sciences, but it is often claimed that there is then little resemblance to the concepts and terms as originally defined. As an example, the term 'attractor' tends to be used a little too liberally for my own taste, and this book is no exception, although I note that some of its authors share my view. This is an issue for any author or teacher of the subject. Many feel that to adhere too strictly to purist terminology excludes access for the majority to an important development of the 20th century. This view is justifiable in the areas covered by this book, which is generally about complex phenomena in large organisations, where the sociological insights are more important than hard mathematical theory. It is less justifiable in the study of clinical and physiological systems, where the models can be tested by more quantitative means, and mathematical rigor is then more of a help than an obstacle. This spectrum from 'hard' to 'soft' approaches is well covered in chapter 4 of this book, and both provide opportunities for the application of complexity principles, depending on the context and the availability of numerical data. The editor begins with a well pitched introduction to the theory, and finishes with a glossary in which unfamiliar terms are defined. There are a few mathematical footnotes, but no-one should be put off this work because of mathematical naivety.

So who should buy this book? There is something here for any healthcare manager, commissioner, practitioner or allied health professional. It will also interest teachers of health care, as a resource for students of medicine, nursing, healthcare management studies, health policy and health economics. But one word of warning: don't expect to finish it in an evening. This work is lengthy, for all the right reasons, not because the authors have become entrenched in opaque or inaccessible theory, but because it is stuffed full of examples of applications in everyday situations. David Kernick makes this intention clear in his well chosen subtitle: this is a view from the street, accessible to anyone, particularly those, to use his own favourite metaphor, working knee-deep in the swampy lowlands of primary care.

TIM HOLT