Small Worlds: The Dynamics of Networks between Order and Randomness (Princeton Studies in Complexity)

Duncan J. Watts

Small Worlds: The Dynamics of Networks between Order and Randomness (Princeton Studies in Complexity)

Duncan J. Watts

Small Worlds: The Dynamics of Networks between Order and Randomness (Princeton Studies in Complexity) Duncan J. Watts

Everyone knows the small-world phenomenon: soon after meeting a stranger, we are surprised to discover that we have a mutual friend, or we are connected through a short chain of acquaintances. In his book, Duncan Watts uses this intriguing phenomenon--colloquially called "six degrees of separation"--as a prelude to a more general exploration: under what conditions can a small world arise in any kind of network?

The networks of this story are everywhere: the brain is a network of neurons; organisations are people networks; the global economy is a network of national economies, which are networks of markets, which are in turn networks of interacting producers and consumers. Food webs, ecosystems, and the Internet can all be represented as networks, as can strategies for solving a problem, topics in a conversation, and even words in a language. Many of these networks, the author claims, will turn out to be small worlds.

How do such networks matter? Simply put, local actions can have global consequences, and the relationship between local and global dynamics depends critically on the network's structure. Watts illustrates the subtleties of this relationship using a variety of simple models---the spread of infectious disease through a structured population; the evolution of cooperation in game theory; the computational capacity of cellular automata; and the sychronisation of coupled phase-oscillators.

Watts's novel approach is relevant to many problems that deal with network connectivity and complex systems' behaviour in general: How do diseases (or rumours) spread through social networks? How does cooperation evolve in large groups? How do cascading failures propagate through large power grids, or financial systems? What is the most efficient architecture for an organisation, or for a communications network? This fascinating exploration will be fruitful in a remarkable variety of fields, including physics and mathematics, as well as sociology, economics, and biology.

Download and Read Free Online Small Worlds: The Dynamics of Networks between Order and Randomness (Princeton Studies in Complexity) Duncan J. Watts

---

From reader reviews:

Irma Patterson:

Reading a publication can be one of a lot of activity that everyone in the world adores. Do you like reading book so. There are a lot of reasons why people fantastic. First reading a guide will give you a lot of new details. When you read a e-book you will get new information since book is one of various ways to share the information or even their idea. Second, studying a book will make you actually more imaginative. When you reading through a book especially fictional book the author will bring that you imagine the story how the figures do it anything. Third, it is possible to share your knowledge to some others. When you read this Small Worlds: The Dynamics of Networks between Order and Randomness (Princeton Studies in Complexity), you are able to tells your family, friends and soon about yours guide. Your knowledge can inspire average, make them reading a reserve.

Jon Gomes:

Spent a free the perfect time to be fun activity to complete! A lot of people spent their spare time with their family, or all their friends. Usually they accomplishing activity like watching television, planning to beach, or picnic from the park. They actually doing ditto every week. Do you feel it? Will you something different to fill your current free time/ holiday? Can be reading a book is usually option to fill your free of charge time/ holiday. The first thing that you will ask may be what kinds of reserve that you should read. If you want to consider look for book, may be the e-book untitled Small Worlds: The Dynamics of Networks between Order and Randomness (Princeton Studies in Complexity) can be great book to read. May be it might be best activity to you.

Margaret Soto:

Small Worlds: The Dynamics of Networks between Order and Randomness (Princeton Studies in Complexity) can be one of your beginning books that are good idea. Many of us recommend that straight away because this publication has good vocabulary that can increase your knowledge in vocab, easy to understand, bit entertaining but still delivering the information. The copy writer giving his/her effort to get every word into satisfaction arrangement in writing Small Worlds: The Dynamics of Networks between Order and Randomness (Princeton Studies in Complexity) nevertheless doesn't forget the main level, giving the reader the hottest in addition to based confirm resource data that maybe you can be among it. This great information can drawn you into completely new stage of crucial pondering.

Floyd Brown:

With this era which is the greater individual or who has ability to do something more are more special than other. Do you want to become one among it? It is just simple method to have that. What you are related is just spending your time little but quite enough to experience a look at some books. One of several books in the top listing in your reading list is Small Worlds: The Dynamics of Networks between Order and

Randomness (Princeton Studies in Complexity). This book and that is qualified as The Hungry Hills can get you closer in growing to be precious person. By looking up and review this book you can get many advantages.

Read Small Worlds: The Dynamics of Networks between Order and Randomness (Princeton Studies in Complexity) by Duncan J. Watts for online ebook

Small Worlds: The Dynamics of Networks between Order and Randomness (Princeton Studies in Complexity) by Duncan J. Watts Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Small Worlds: The Dynamics of Networks between Order and Randomness (Princeton Studies in Complexity) by Duncan J. Watts books to read online.

Online Small Worlds: The Dynamics of Networks between Order and Randomness (Princeton Studies in Complexity) by Duncan J. Watts ebook PDF download

Small Worlds: The Dynamics of Networks between Order and Randomness (Princeton Studies in Complexity) by Duncan J. Watts Doc

Small Worlds: The Dynamics of Networks between Order and Randomness (Princeton Studies in Complexity) by Duncan J. Watts Mobipocket

Small Worlds: The Dynamics of Networks between Order and Randomness (Princeton Studies in Complexity) by Duncan J. Watts EPub