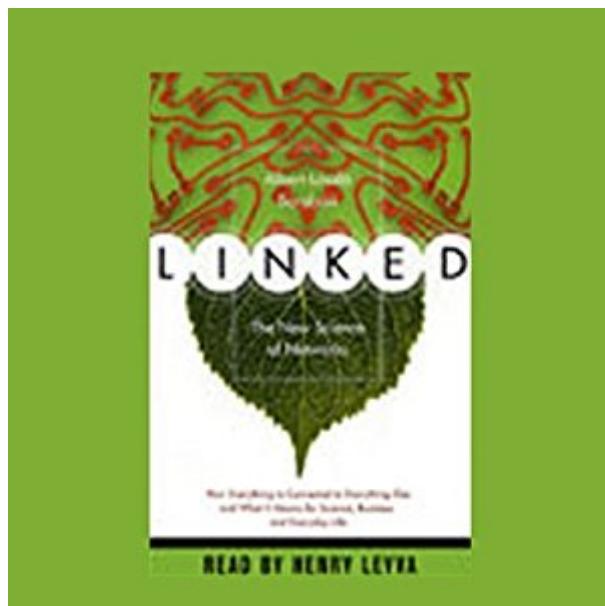


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# Linked: The New Science Of Networks



## Synopsis

In the 1980's, James Gleick's *Chaos* introduced the world to complexity. Now, Albert-László Barabási's *Linked* reveals the next major scientific leap: the study of networks. We've long suspected that we live in a small world, where everything is connected to everything else. Indeed, networks are pervasive--from the human brain to the Internet to the economy to our group of friends. These linkages, it turns out, aren't random. All networks, to the great surprise of scientists, have an underlying order and follow simple laws. Understanding the structure and behavior of these networks will help us do some amazing things, from designing the optimal organization of a firm to stopping a disease outbreak before it spreads catastrophically. In *Linked*, Barabási, a physicist whose work has revolutionized the study of networks, traces the development of this rapidly unfolding science and introduces us to the scientists carrying out this pioneering work. These "new cartographers" are mapping networks in a wide range of scientific disciplines, proving that social networks, corporations, and cells are more similar than they are different, and providing important new insights into the interconnected world around us. This knowledge, says Barabási, can shed light on the robustness of the Internet, the spread of fads and viruses, even the future of democracy. Engaging and authoritative, *Linked* provides an exciting preview of the next century in science, guaranteed to be transformed by these amazing discoveries. From *Linked*: This book has a simple message: think networks. It is about how networks emerge, what they look like, and how they evolve. It aims to develop a web-based view of nature, society, and technology, providing a unified framework to better understand issues ranging from the vulnerability of the Internet to the spread of diseases. Networks are present everywhere. All we need is an eye for them...We will see the challenges doctors face when they attempt to cure a disease by focusing on a single molecule or gene, disregarding the complex interconnected nature of the living matter. We will see that hackers are not alone in attacking networks: we all play Goliath, firing shots at a fragile ecological network that, without further support, could soon replicate our worst nightmares by turning us into an isolated group of species...*Linked* is meant to be an eye-opening trip that challenges you to walk across disciplines by stepping out of the box of reductionism. It is an invitation to explore link by link the next scientific revolution: the new science of networks.

## Book Information

Audible Audio Edition

Listening Length: 8 hours and 8 minutes

Program Type: Audiobook

Version: Unabridged

Publisher: Random House Audio

Audible.com Release Date: November 27, 2002

Whispersync for Voice: Ready

Language: English

ASIN: B00007KSET

Best Sellers Rank: #79 in  $\Delta$  Books > Science & Math > Physics > Chaos Theory #161 in  $\Delta$  Books > Business & Money > Human Resources > Knowledge Capital #422 in  $\Delta$  Books > Business & Money > Industries > Computers & Technology

## **Customer Reviews**

I found the book quite interesting. You don't need to be an expert math person to understand it. The book examines many types of networks such as webpages, citation networks, molecule delays, Airline Routing, Income Distribution, Popular Press Literature, Distance over which atoms communicate, Phase transitions in materials, and Experimental data. These are examples of Power Distribution and not Bell Curve distribution networks, as most people believe them to be. The author explains in detail how the different types of networks can be sensitive to deliberate forms of attack. It is interesting how the internet just expanded by its self and became organized in a way no one expected.

I read this book when taking a course on Social Network Analysis as an introduction to the various mathematical concepts explained in plain terms. The book is very engaging and well written, although it does lose a little bit of steam towards the end. It serves as a great introduction into the topics and history of the social network analysis science. You can read it in a day. Unfortunately, by now, the book is dated in some areas of research (for example, the book is pre-facebook and the social network research that FB opened up). Most foundational concepts are still very much applicable, however. I would love to see an updated copy / chapters.

There are some good ideas in here -- like the importance of weak links -- but you could probably cut the book length by 60% and not lose anything...For instance the first three chapters, it seems to me, can be pared down to "Life seems random, but it's really not" and "Everyone is separated by an average of six people...." There's a lot of fluff concerning the lives of Hungarian mathematicians and poets, and so on, that drags the book down -- meaning you want to put the book down and do

something else...

Excellent exploration into the science of networks, or the new science of networks, the network society, economy, geopolitics and overall social change that is enabled by this phenomena (the World Wide Web).

I ordered this book for my Kindle. It was easy to order and I am enjoying reading about the "marvels" of network theory. The presentation, at least as far as I have read so far (about half of the book), avoids math and jargon, which is good for the lay reader. I think the presentation and understanding could have been improved if more mathematical foundations were presented and more diagrams were analyzed.

Starting from random networks, the author traces the developments of the latter half of the last century in the field of networks in layman terms. It is a fantastic read for mathematicians, physicists and engineers. However, the length of the book could have been significantly trimmed without losing much. The first 100 pages contain the bulk, the rest is just applications.

It is fascinating to go back and read these early books on complexity. Barabasi is a leader in this field and so much of his earliest work has stood the tests of time and research.

The book gives many examples of how various network-like characteristics can be found in just about anything in the universe. This is the greatest strength of the book. In my opinion, there aren't many other noteworthy strengths. If some phenomenon resembles a certain kind of network, then great. But then the question "So what?" comes about. The text doesn't shed much light there. Similar network characteristics between two phenomenon might have no practical significance. I'm not sure there's a good reason to believe there would be a significance, in general. This isn't a slam on the book per se, rather a slam on the field itself. The material is reasonably entertaining, though.

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