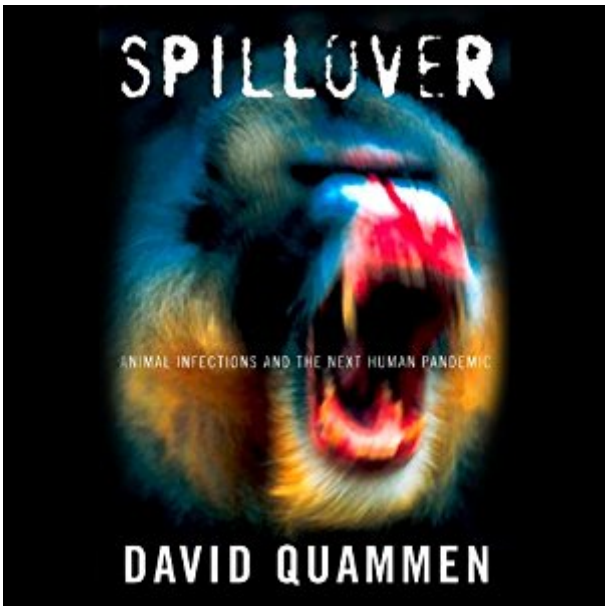
Spillover



Synopsis

A masterpiece of science reporting that tracks the animal origins of emerging human diseases. The emergence of strange new diseases is a frightening problem that seems to be getting worse. In this age of speedy travel, it threatens a worldwide pandemic. We hear news reports of Ebola, SARS, AIDS, and something called Hendra killing horses and people in Australia - but those reports miss the big truth that such phenomena are part of a single pattern. The bugs that transmit these diseases share one thing: they originate in wild animals and pass to humans by a process called spillover. David Quammen tracks this subject around the world. He recounts adventures in the field - netting bats in China, trapping monkeys in Bangladesh, stalking gorillas in the Congo - with the world’s leading disease scientists. In Spillover, Quammen takes the listener along on this astonishing quest to learn how, where from, and why these diseases emerge, and he asks the terrifying question: What might the next big one be?

Book Information

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Customer Reviews

The jargon of diseases can be boring, tedious. There are a lot of acronyms and big words. Worse, we often don’t know as much as we’d like -- and usually we aren’t very certain of what we do know. Telling a good story given those constraints is hard. But Spillover repeatedly provides gripping stories that still impart a good understanding of what we know about zoonotic (animal-origin) diseases. Even better, the author ties disparate stories together to describe some general trend and possible causes for seemingly new infectious diseases. But I don’t want to summarize the

conclusions: I want you to go read it. You won’t be bored and you’ll learn a lot (most definitely even if you’ve read books like The Hot Zone or the Coming Plague).Some other notes:* The author has a less human-centric attitude and a lot of sympathy for the animals, like horses or apes, who sometimes are actually the first animal a disease spills over into only to later infect humans.* He has a wry tone. When noting the euthanasia of a large number of monkeys (even ones likely not infected with a disease), he notes no humans were euthanized despite equal exposure.* He provides full references. Some of those papers are quite readable by a non-expert such as this review ([...]) of the importance of bats as reservoirs for infectious diseases.* The stories are often told from the perspective of the scientists trying to figure out what the heck is really going on. The author is also not afraid to explain when scientists just don’t know -- and how they might figure it out more.* The author went on several field collections where he might have been exposed to a disease being investigated.If I had any criticisms I would have two:* The author notes the problem of calling African hunted wild meat "bush meat" which has unsavory connotations to many Europeans and Americans despite Europeans and Americans also hunting wild animals for food. And then he still calls it that repeatedly for the rest of the book (hunted animals are a major source for new infections). I realize this makes it easier to read but it was a bit jarring.* There is a long, imagined story in the chapters on the origin HIV that is, essentially, imagined entirely with details about a possible river fisherman who gets infected with HIV early on and brings it downstream to the (then) Belgian capitol of the Congo. Elsewhere in the book when the explanation for the origin of a disease required some imagination to fill in a plausible sequence of events, the imaginary stories were a lot less elaborate. I don’t think the story detracts from the accuracy of the book: something like that had to have happened to explain the origin of HIV (specifically HIV-1). I was also perfectly entertained and learned a bit about the cultures in the region, but it stood out. It might annoy some so I note you can safely skip ahead when you hit it.I call these two things out, but even so the book is still excellent. I have some interesting papers I want to read. I also feel I know more about how infectious diseases "work". Best of all, I am less fearful of them as well.

Gripping, fascinating science written in a flowing, easily digested style. To say I enjoyed this book would be an understatement. I was utterly enthralled by this book. You’ll find the familiar subjects here; Ebola, HIV, etc. But you’ll also find viruses you’ve likely never heard of, learn how biological reservoirs work (as much as they are understood at least), and the vital role of amplifiers in the lives of certain viruses. The various viruses are almost characters in and of themselves as the author delves into how, and why, they do what they do. Even the largely speculative chapter on how HIV

might have gotten out of rural Africa and into the cities is fascinating.If you loved The Hot Zone, this is that book’s bigger, brainier sibling. If you are at all interested in biology and physical science, you MUST read this book.

This reads like a detective novel. I had a hard time putting this book down as I kept wanting to see what the next piece of information would be on the next page. This was an informative, educational and entertaining read.This book not only gives a basic understanding of zoonotic disease but will inspire a generation of up and coming scientists to develop our understanding of how species are interlinked by diseases that cross species in this world. I would highly recommend this book to anyone interested in the etiology and spread of disease but especially to young people who may wish to find there love or passion in increasing our knowledge of disease pathology.

One review contained inside this book asserts, "David Quammen is one of that rare breed of science journalists who blends exploration with a talent for synthesis and storytelling." Another simply states, "The scariest book you’ll read this year." Both reviews are accurate.A spillover is a disease that has crossed from another species to humans (a zoonosis). About 150 -200 zoonotic diseases are known. Notorious ones explored in this book include the Ebola and Marburg hemorrhagic fevers, Lyme disease, malaria, SARS, HIV, and notably, influenza.Quammen complements a detailed chronology of events with scientific findings and discoveries to create spillover stories with the feel of detective mysteries. Enter the investigator at the scene of an outbreak or aftermath. The challenge is to identify patient zero, the first infected human that led to the outbreak; then, the methods of contagion, consequences, and gained knowledge. A key becomes discovering the "reservoir species": the host animal in which the disease lives when it is not infecting humans. Identifying this species can help determine where and how the pathogen infected patient zero.The author uses these stories to introduce higher-level concepts. He discusses the discovery of mathematical relationships called models, which can predict the impact of an outbreak. He describes the labeling of flu virus subtypes, which reflects the virus’s ability to adapt to a particular species. And, he explains that, the way viral genetic information is stored influences whether an outbreak will be transient or persistent.Finally, Quammen draws these powerful conclusions.* Randomness is unavoidable in zoonotic outbreaks.* The effects of human activities on ecological resources can determine whether and how outbreaks will occur.* The human species is one integrated part of the living world’s evolving future.The reader will find Quammen visiting with breakthrough experts, trapping suspect infection carriers, and trekking to the remote sites of

epidemic outbursts. It seems appropriate to characterize him as a witness as well as an author. Nevertheless, Quammen tries hard to present technical material in plain English.It’s hard to imagine learning so much while reading for pleasure.

Spillover: Animal Infections and the Next Human Pandemic Spillover