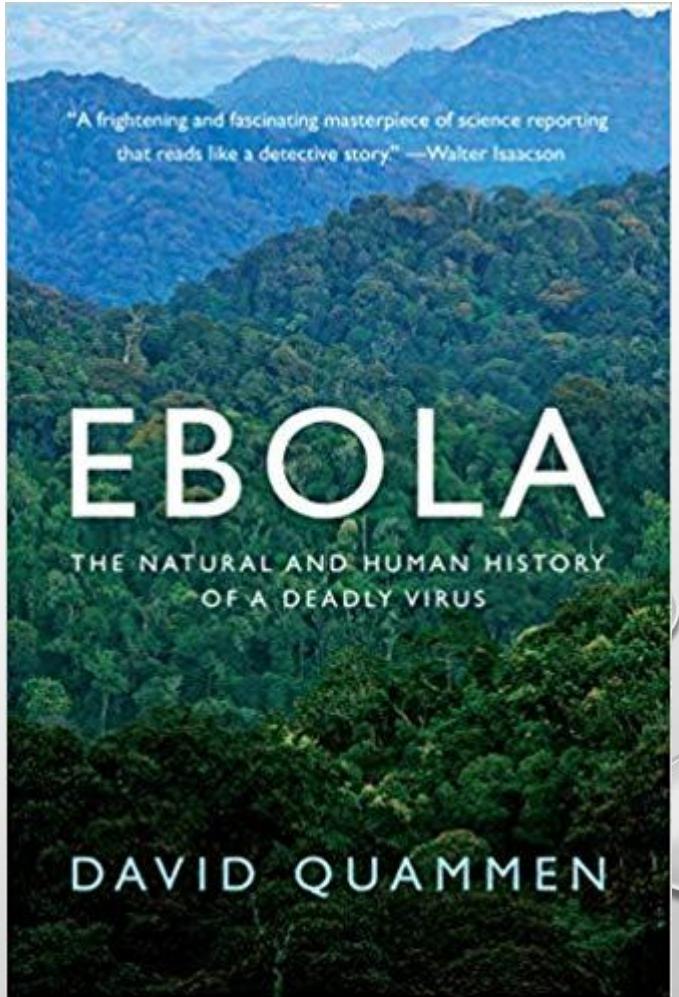


**EBOLA, ZOONOTIC DISEASE, CONTAGION,  
INFECTION, IMMUNOLOGY, VIROLOGY,  
SPILLOVER, EPIDEMIOLOGY, CLIMATE  
CHANGE, ECOLOGY, RESERVOIR HOST,  
EVOLUTION, ADAPTATION**



<https://www.youtube.com/watch?v=L6jTMaczkl> What Was the 1918 Influenza Pandemic?

[https://www.youtube.com/watch?v=3x1aLAw\\_xkY](https://www.youtube.com/watch?v=3x1aLAw_xkY) Spanish Flu: a warning from history

<https://www.youtube.com/watch?v=yS9vDFKDXMo> PBS Why another flu pandemic is likely just a matter of when

<https://www.pbs.org/wgbh/frontline/film/hunting-the-nightmare-bacteria/> Frontline, Hunting Nightmare bacteria

<https://www.youtube.com/watch?v=gf2bObJGFkg> Deadliest viruses

<https://www.youtube.com/watch?v=F9b4KTJM8ps> How industrial farming techniques can breed superbugs

<https://www.youtube.com/watch?v=ob5wTekutg8> Ebola, Nat Geo

<https://www.youtube.com/watch?v=DP1- qjKSbc> David Quammen on the Ebola outbreak

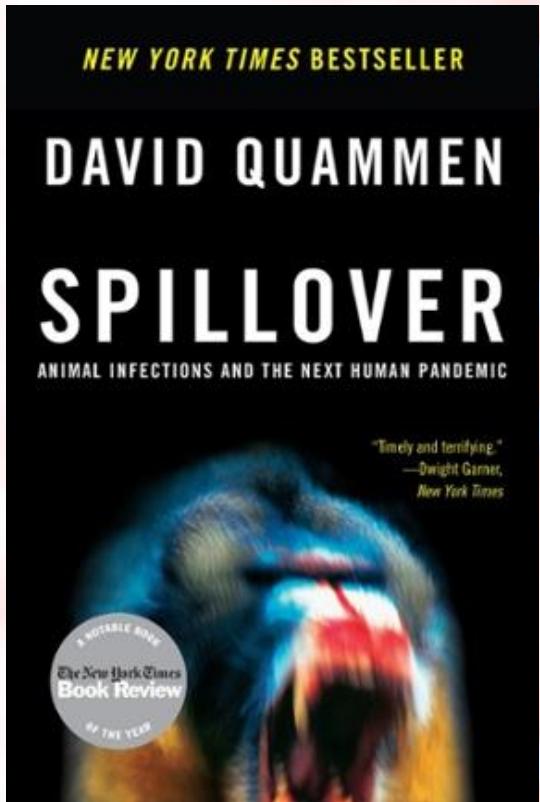
<https://www.youtube.com/watch?v=rl11hHOya34> Thirteen Dead Gorillas: Emerging Diseases and the Next Human Pandemic : David Quammen at TEDxBozeman

<https://www.youtube.com/watch?v=ikZQPB45Zbw> Superbug - Antibiotic-Resistant Bacteria: Dr. Karl Klose at TED

[https://www.youtube.com/watch?v=ygKCCMJP\\_wU](https://www.youtube.com/watch?v=ygKCCMJP_wU) Ecoli

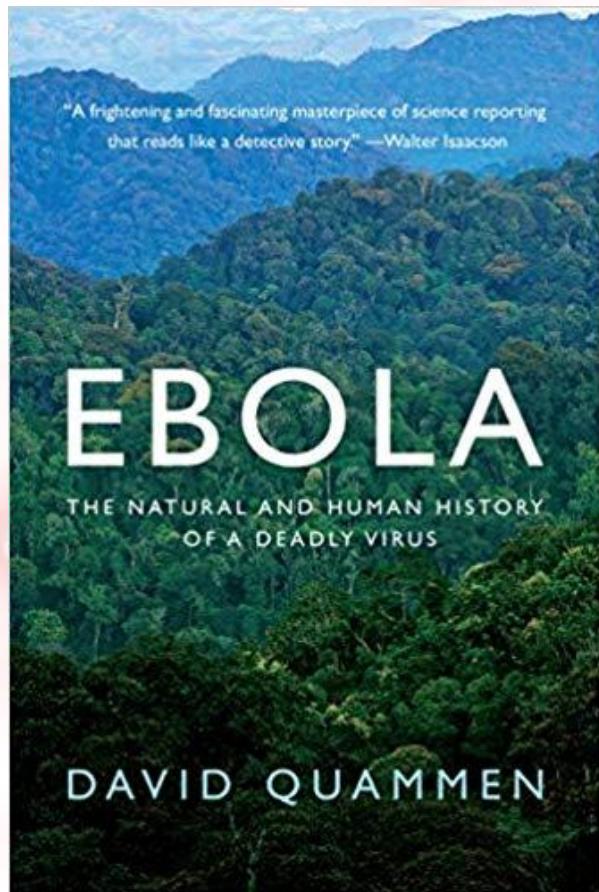
<https://www.youtube.com/watch?v=gx3zq8ihOO8> Smallpox, The Deadliest Disease in History

<https://www.youtube.com/watch?v=Vg4N0wUeUWo> Smallpox in the U.S.

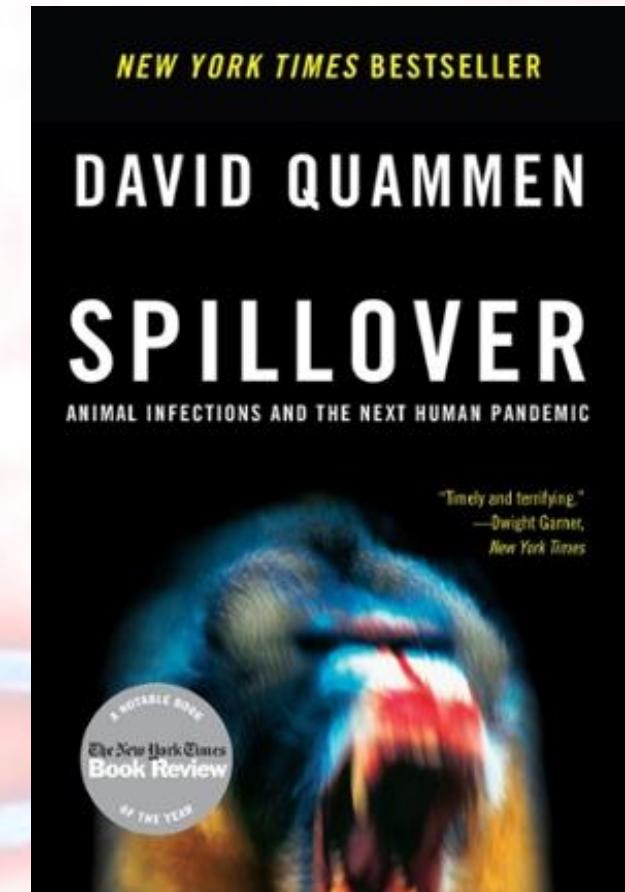


p. 4 – What does Quammen mean when he says, “By the cold Darwinian logic of natural selection, evolution codifies happenstance into strategy.”

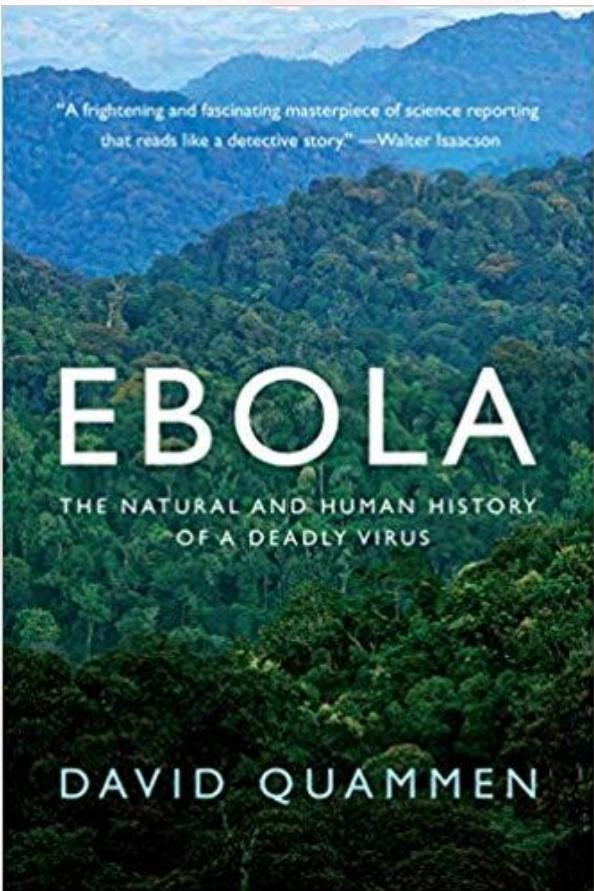




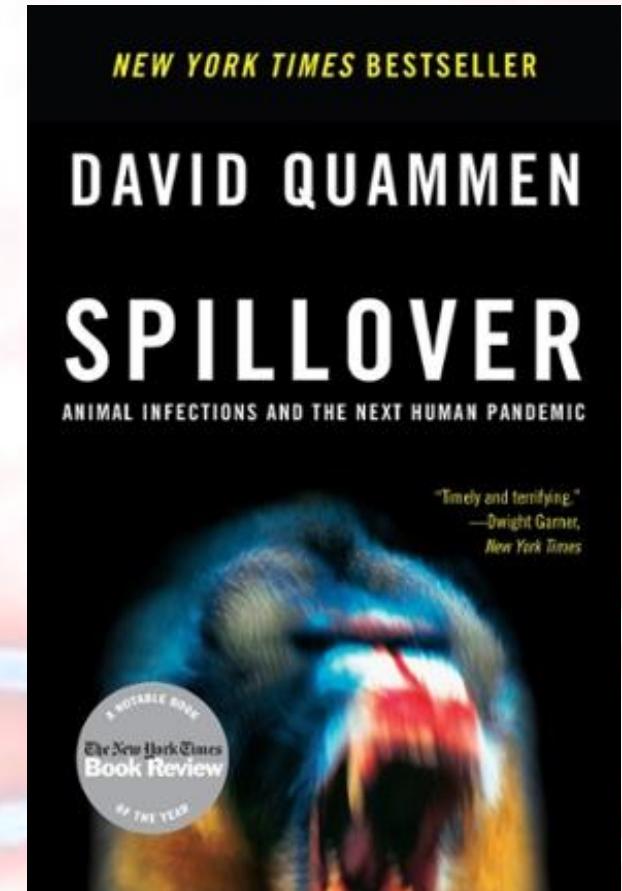
p. 4 – “To reside undetected within a reservoir host is probably easiest wherever biological diversity is high and the ecosystem is relatively undisturbed. The converse is also true: Ecological disturbance (like climate change, logging, over development, clear cut farming) causes diseases to emerge.”



<https://www.youtube.com/watch?v=UmH5vUpufyA> the evolution of viruses, Nat Geo

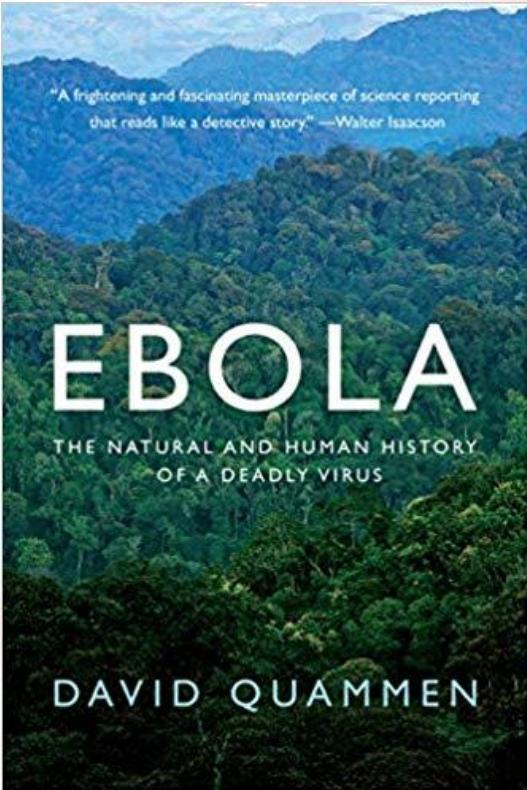


p. 12 – “Scientific data are another matter, very different from anecdotal testimony. Scientific data don’t shimmer with poetic hyperbole and ambivalence. They are particulate, quantifiable, firm. Fastidiously gathered, rigorously sorted, they can reveal emergent meanings.” What is the difference between scientific thinking and poetry. Why are both important? Do scientists who understand poetry make better scientists? Do poets who understand science make better poets?

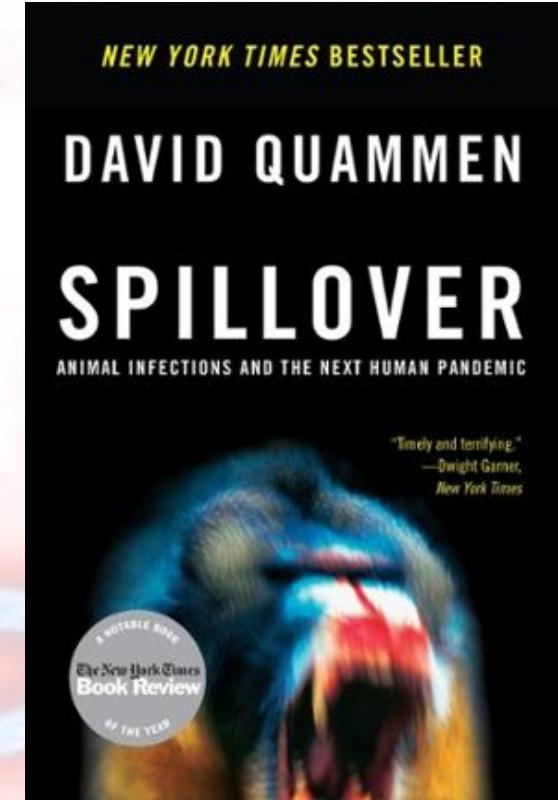


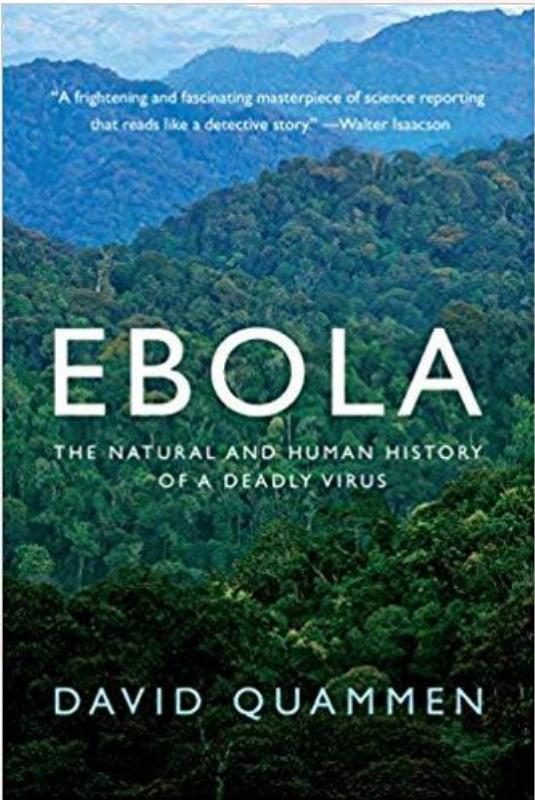
p. 12 – Zoonosis – pathogen transfer from animal to human.

Anthroponosis – pathogen transfer from human to animal.



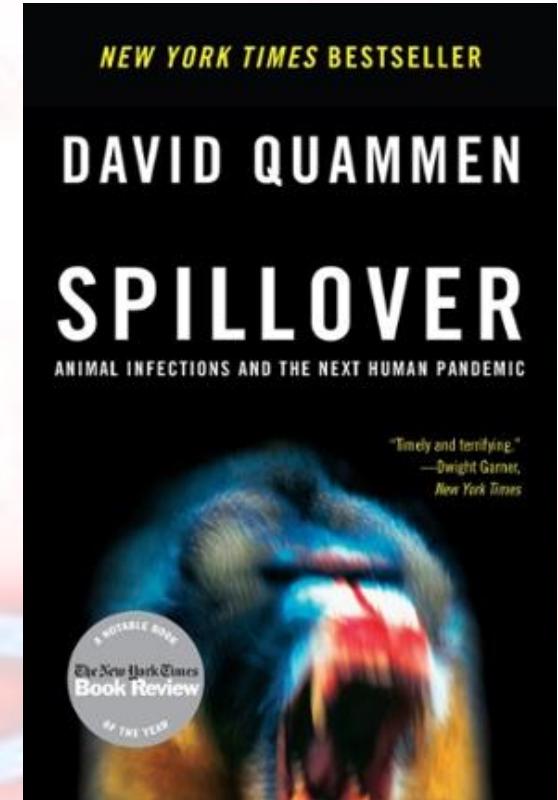
What is the relationship between disease and culture? Remember the AIDS epidemic? Maybe not, but when AIDS first broke out it flourished in the homosexual community and some conservative zealots started blaming homosexuality for the disease, when in fact it is sexually transmitted through heterosexual relationships just as easily. There were actually people out there who believed that homosexuals were being punished by God. Take Ebola, so far it has generally been confined to Africa and Africans, those with dark skin color, pretty far removed from white dominated America. Do you think we worry about it less because of that, or are things starting to change any why?

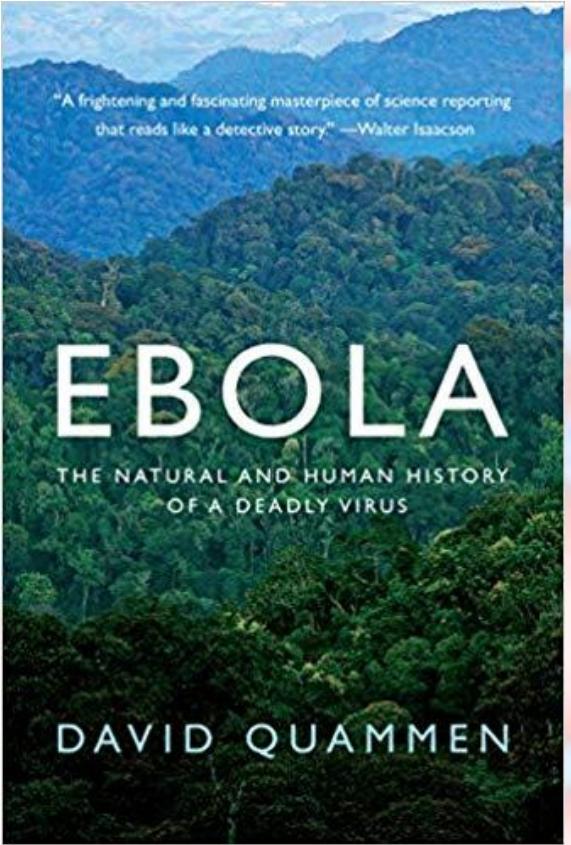




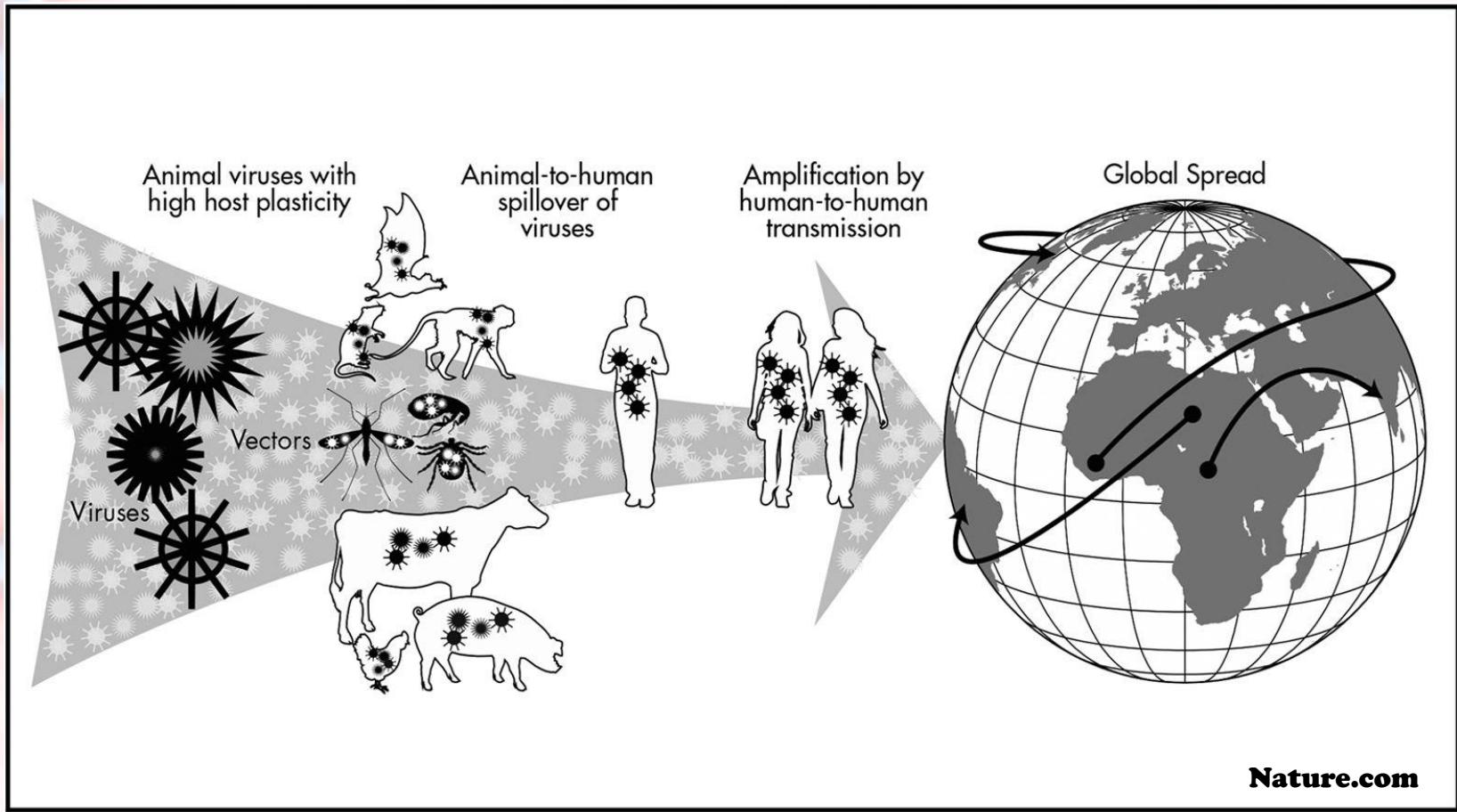
p. 36 – “Like other zoonotic viruses, ebolaviruses have probably adapted to living tranquilly within their reservoir (or reservoirs) replicating steadily but not abundantly and causing fatal devastation ... Some scientists use the term ‘dead-end-host’ to describe humanity’s role in the lives and adventures of ebolaviruses. What the term implies is this: Outbreaks have been contained and terminated, in each situation the virus has come to a dead end leaving no offspring. Not the virus *it toto*, throughout its range of course, but this lineage of virus, the one that has spilled over, betting everything on this gambit—it’s gone, kaput. It’s an evolutionary loser. It hasn’t caught on to become an endemic disease within human populations.”

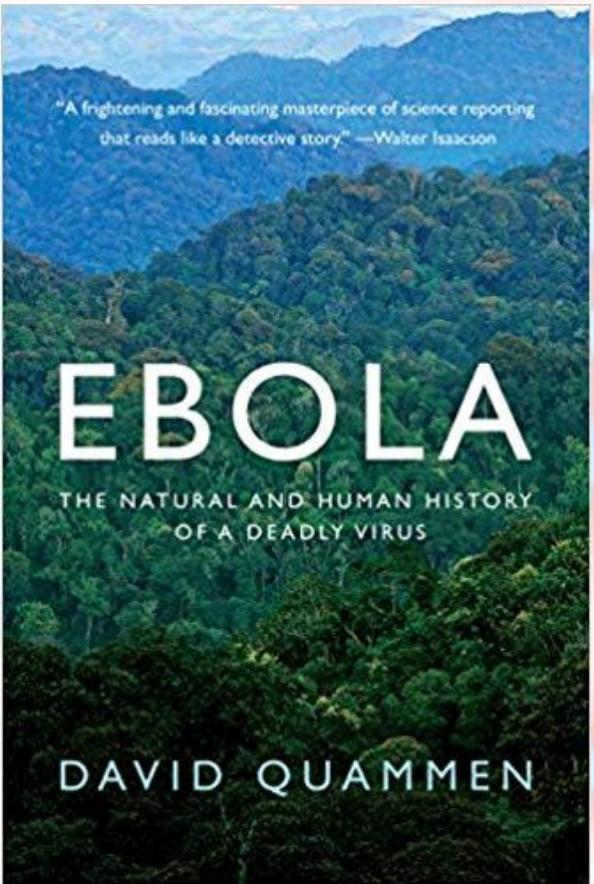
Why do you think this has happened, or why does it happen with some viruses and not with others?





Chapter 14 – Explain in detail the differences between the “wave” and “particle” theories of Ebola’s outbreak and spread in Central and West Africa starting in the mid-1970s.

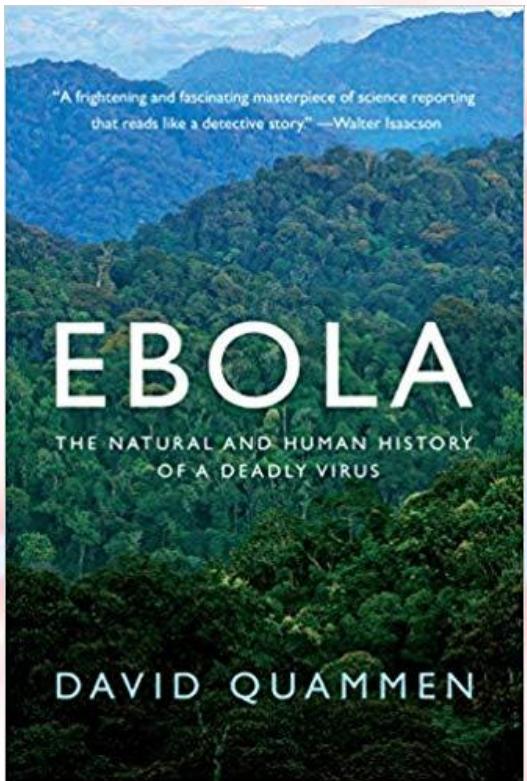




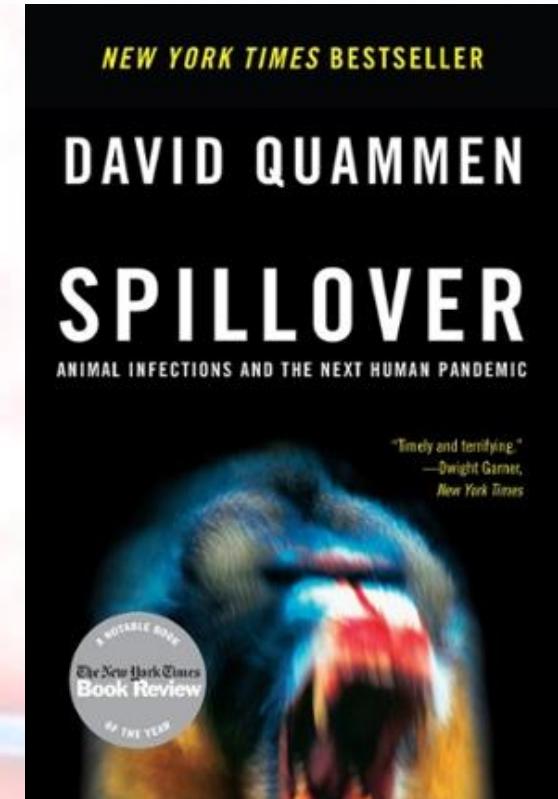
Chapter 16 – Quammen speculates, in this chapter, on why bats have become some of the animal kingdom's most efficient viral hosts. Write an essay response summarizing his speculations on why bats are nature's great reservoir hosts of viral disease.



<https://batworld.org/bats-and-ebola-the-facts/> why do bats carry so much disease?



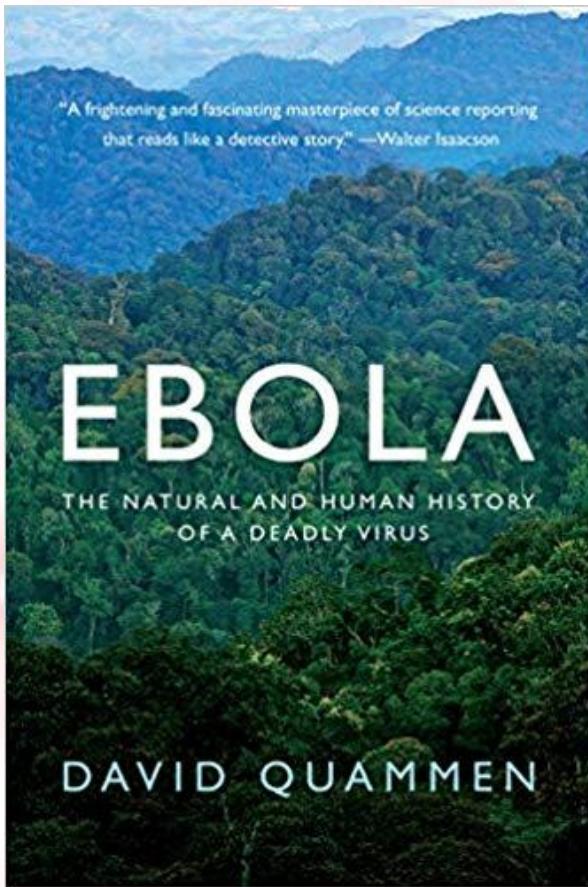
Epilogue – Quammen's writes: “Ebola as we know it is just not the right sort of virus to spread around the world, as influenza regularly does, and as another respiratory bug such as SARS coronaviruses might, causing tens of thousands of deaths, not just in poor countries but also in wealthy ones with all the advantages of strong governance and rigorous health care.” Explain why this is currently so.



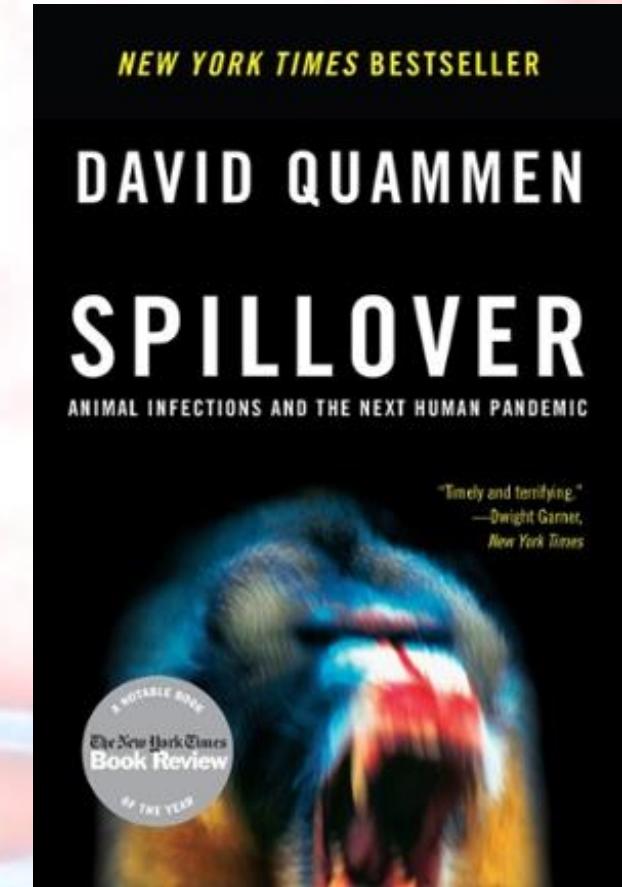
<https://www.youtube.com/watch?v=K-QiTrPcw4g> SARS - A Crisis That Bonded A Nation

<https://www.youtube.com/watch?v=UG8YbNbdaco> How Pandemics Spread

<https://www.youtube.com/watch?v=JBagOaneLeo> Ten years on, the SARS outbreak that changed HK



Epilogue – Reflect on Quammen’s comments: “What we should recognize, what we should remember, is that the events in West Africa (so far) [2014] tell us not just about the ugly facts of Ebola’s transmissibility and lethality; they tell us also about the ugly facts of poverty, inadequate health care, political dysfunction, and desperation in three West African countries, and of neglectful disregard of those circumstances over time by the international community.” Lifespans are way up in the U.S. Are we winning the “war” against infectious disease?



<https://www.vaccinestoday.eu/stories/humans-vs-viruses-the-battle-continues/> HUMANS VS VIRUSES: THE BATTLE CONTINUES

<https://www.tedxsandiego.com/ending-the-arms-race-with-infectious-diseases-janelle-ayres-at-tedxsandiego-2016/> Ending the Arms Race with Infectious Disease – Janelle Ayres at TED in San Diego, 2016