

Chapter 15/16/Paper - Tail risk of contagious diseases

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One-liners

- Drowned worshippers
- Connectedness
- Avoid contagion



(Navigator, a Medieval Odyssey)

Fat-Tailed Functions

- Survival Function

$$S(x) = P(X \geq x) = L(x) x^{-\frac{1}{\zeta}}$$

- Adjusting notation

$$\zeta = \frac{1}{\alpha}$$

- Maximum-to-Sum as an indicator of fat tails

Hill estimators

- Order observations

$$X_1 \geq X_2 \geq \dots \geq X_n$$

- Hill Estimator for ζ

$$H_{k,n} = \frac{1}{k} \sum_{i=1}^k \log \left(\frac{X_i}{X_{k+1}} \right)$$

How reliable are estimates of deaths?

- Who counts as a citizen / person?
 - Women and children
 - Slaves
- Who knows how many neighbors there were?
- Who counted the vanished villages?



(Pedro Szekely)

Guns, Germs and Steel

- World becomes more connected and deadly (eg Sec XVI)
- Could improve model by comparing Empires (China, Greece, Persia, Rome) that survived with empires (Central and South America) that left no documentation / history

If we've been alive so far ...

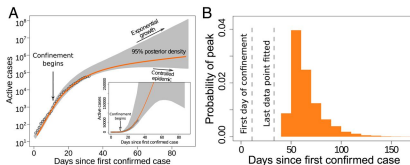
- But then again we've never been so interconnected and so fragile



What this talk was about anyway?

Pandemics are deadlier than wars

- We need to **cut off the left tail instead of wasting time about inferring the future from an early slope**



- Consider both the shadow mean and **the missing history**