Conflict in Cyberspace

Graduate Seminar, Fall 2023

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Week 04: Technology Steps in

Recap W03: Conflict Causes & Consequences

☐ **Conflict is immanent (so far):**
- ☐ Resources scarcity
- ☐ Uncertainty is global
- ☐ Role of beliefs

Conflict: Anarchy ⤳ Monopolization of Violence ⤳ State ⤳ World Order

Olson

☐ **Incentives to be Roving Bandit**
- ☐ Capacity to control the territory: <u>Low</u>
- ☐ Individual harm from: <u>Low</u>
  - ☐ 'bad investment climate
  - ☐ 'general distrust'
- ↳ **Strategy 'Steal Everything'**

☐ **Incentives to be Stationary Bandit**
- ☐ Capacity to control the territory: <u>High</u>
- ☐ Individual harm from: <u>High</u>
  - ☐ 'bad investment climate
  - ☐ 'general distrust'
- ↳ **Strategy 'Protection Racket'**

☐ **Other Factors**
- ☐ Planning horizon (short- vs long-)
- ☐ Outside competitors (#)

↳ **Stationary Bandit does not care about others, only about her own utility**

Volkov

☐ **What drives 'Iron Law' of Monopolization of Violence**
- ☐ 'Prisoner's Dilemma'
- ☐ All potential `bandits` are weak **[RB]**
- ↳ **Strategy 'Steal Everything'**
- ↳ **War of 'All-Against-All'**

☐ **1-Winner-1-Looser Mechanics**
- ☐ Monopolization ↑ ⤳ # 'Bandits'↓

☐ **When Monopolization Stops?**
- ☐ In theory: When it is complete
- ☐ In practice: not clear

North

☐ **Why [almost] no violence after the state is created?**
- ☐ Create economic monopolies
- ☐ Share rents with friends and strong

☐ **Active Conflict ⤳ Latent Conflict**
- ☐ But it does not go away!

☐ **Important Factor**
- ☐ What sectors produce the rents
- ☐ Resource-intensive
- ☐ Labor-intensive

Tilly

☐ **After the State: Roving Bandit *VS* Stationary Bandit**
- ☐ Uncertainty regarding neighbors:
  - ☐ Military capacity
  - ☐ Wealth
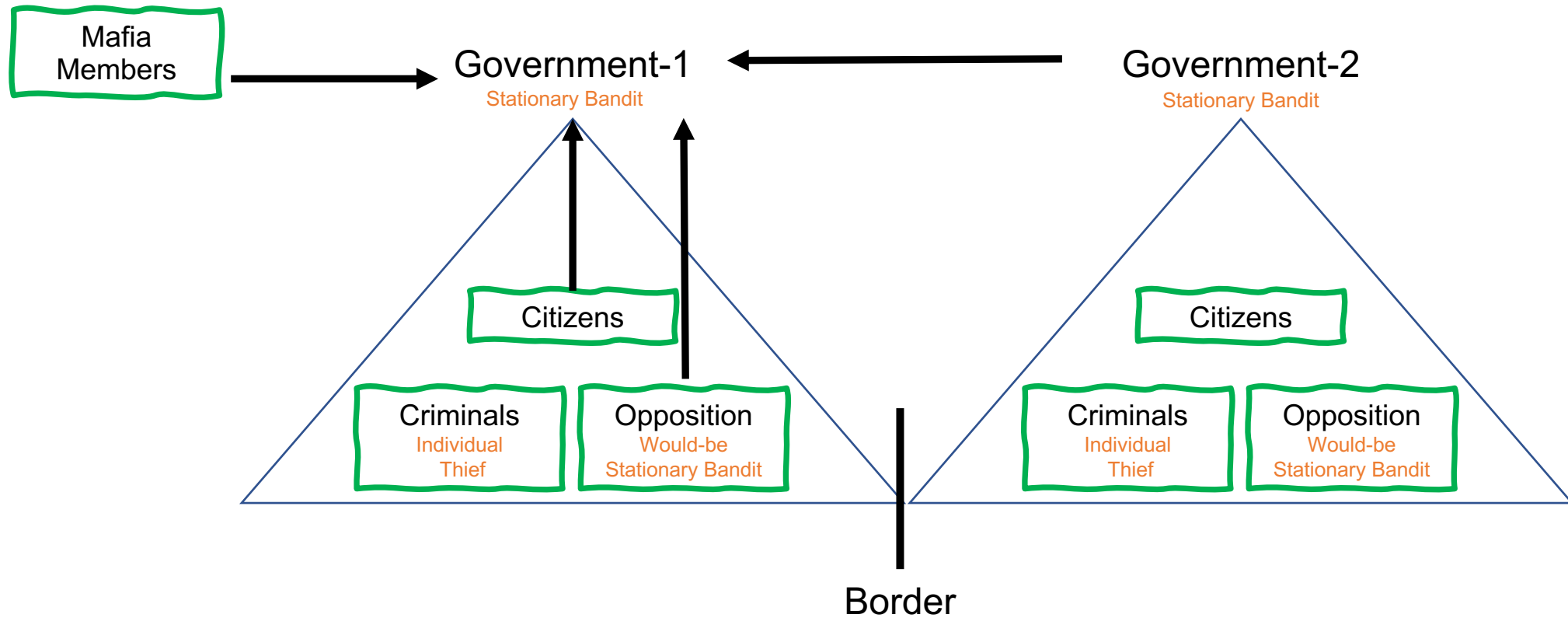
Volkov 2002, "Iron Law" of Monopolization of Violence

'Prisoner's Dilemma'

	Steal	Do not steal
Steal	[1;1]	[3;0]
Do not steal	[0;3]	[2;2]

☐ All players in similar conditions
☐ All players benefit most from: ***[No Steal, No Steal]***
☐ **['Steal']** – the best response of Player 1 to any actions
from Player 2
 ↳ **Incentives lead to worst-case scenario: *[Steal, Steal]***
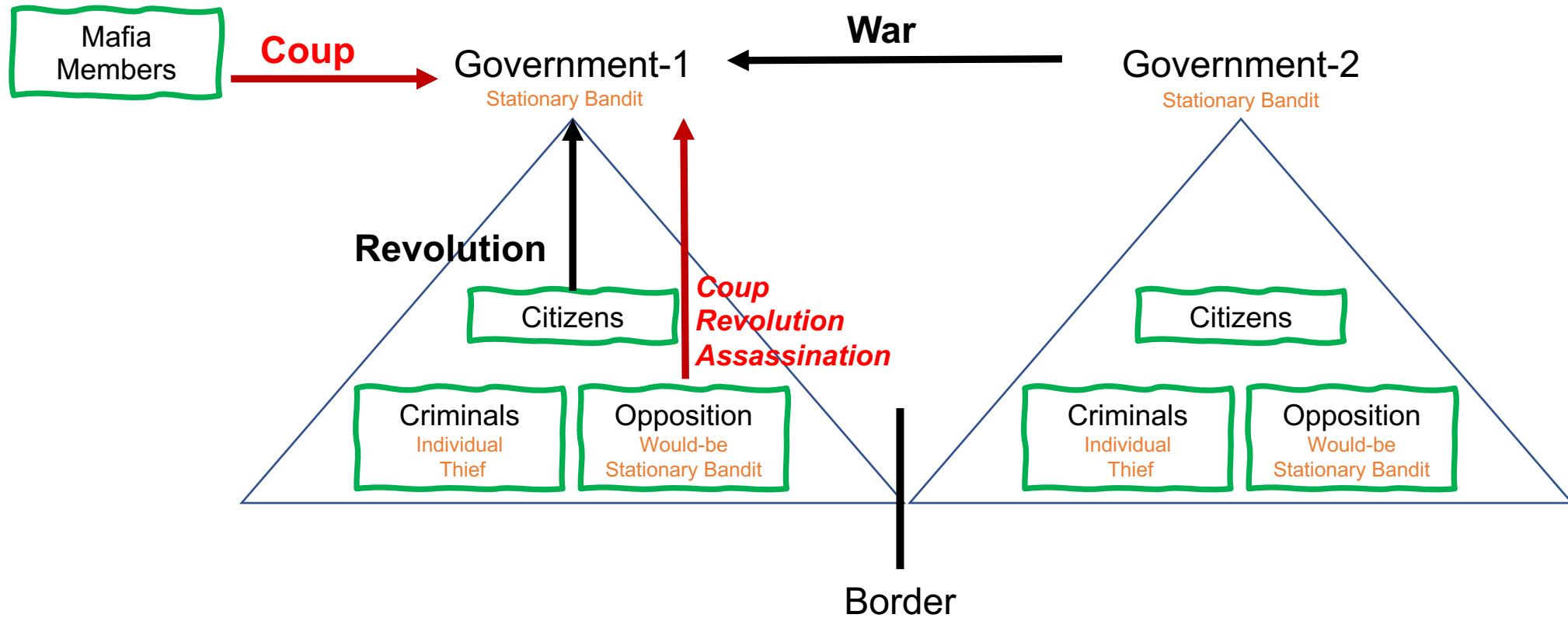 ↳ **Incentives launch War of 'All-Against-All'**

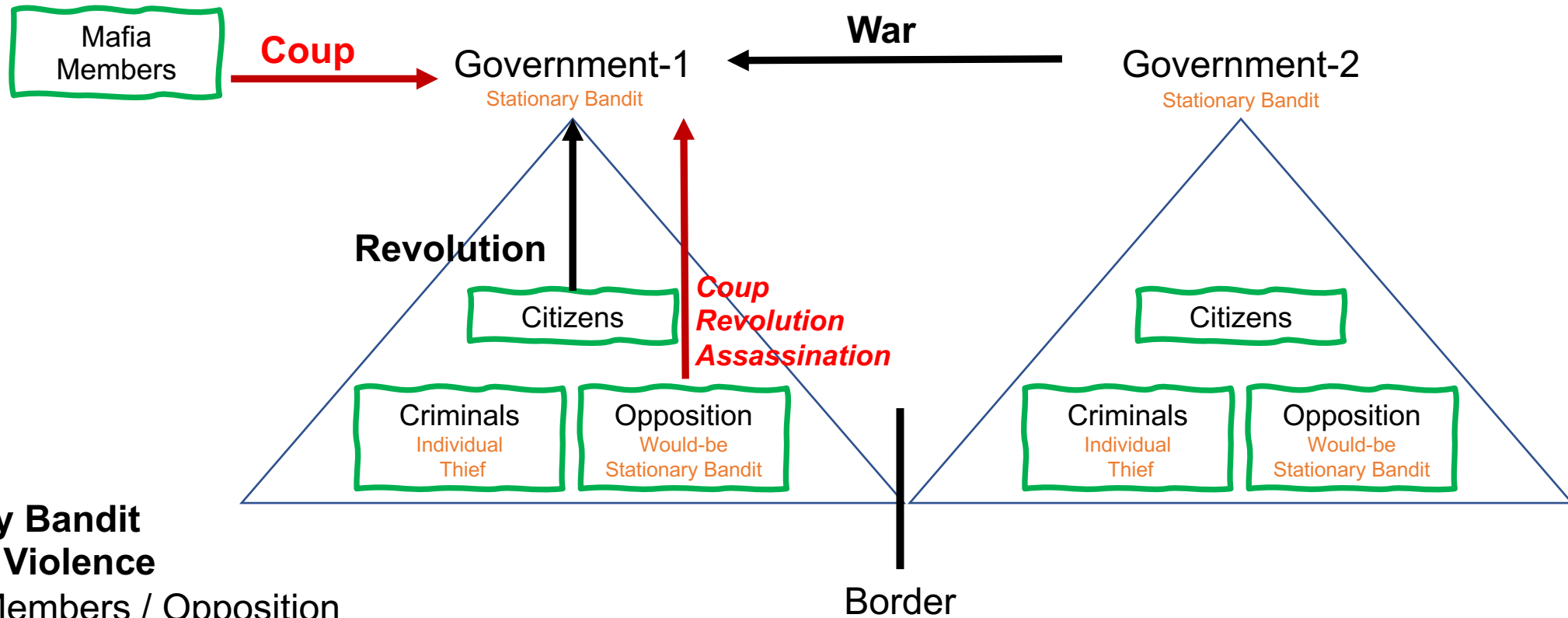# North (2009): No Violence After the State?

Risks of Violence

Mafia Members → Government-1
Stationary Bandit

Government-2
Stationary Bandit

Citizens

Criminals
Individual Thief

Opposition
Would-be Stationary Bandit

Citizens

Criminals
Individual Thief

Opposition
Would-be Stationary Bandit

Border

North (2009): No Violence After the State?

North (2009): No Violence After the State?

Risks of Violence

Mafia Members → **Coup** → Government-1 (Stationary Bandit) ← **War** ← Government-2 (Stationary Bandit)

Revolution — Citizens

Coup Revolution Assassination

Criminals (Individual Thief) — Opposition (Would-be Stationary Bandit)

Criminals (Individual Thief) — Opposition (Would-be Stationary Bandit)

Citizens

Border

Stationary Bandit Mitigates Violence
☐ Mafia Members / Opposition
↳ Economic Monopoly (⤳ Rent)
↳ Share Rent with inner circle / opposition

Pre-Digital Age Conflict: Summary
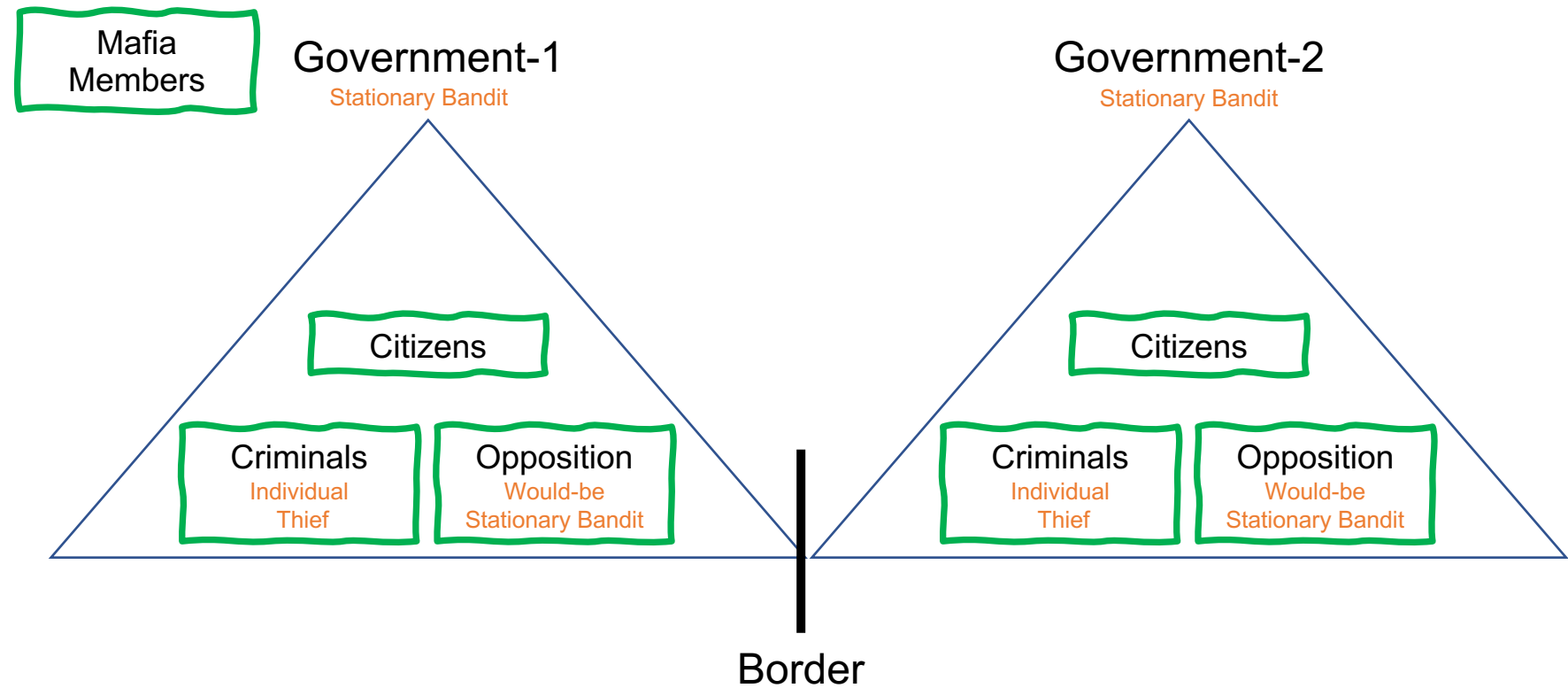
- ☐ **Identify all the conflicts**
- ☐ **Which of them are two-sided conflicts?**
  both sides can impose violence / coercion
- ☐ **Identify Stationary Bandit' strategies to mitigate them**

Pre-Digital Age Conflict: Summary
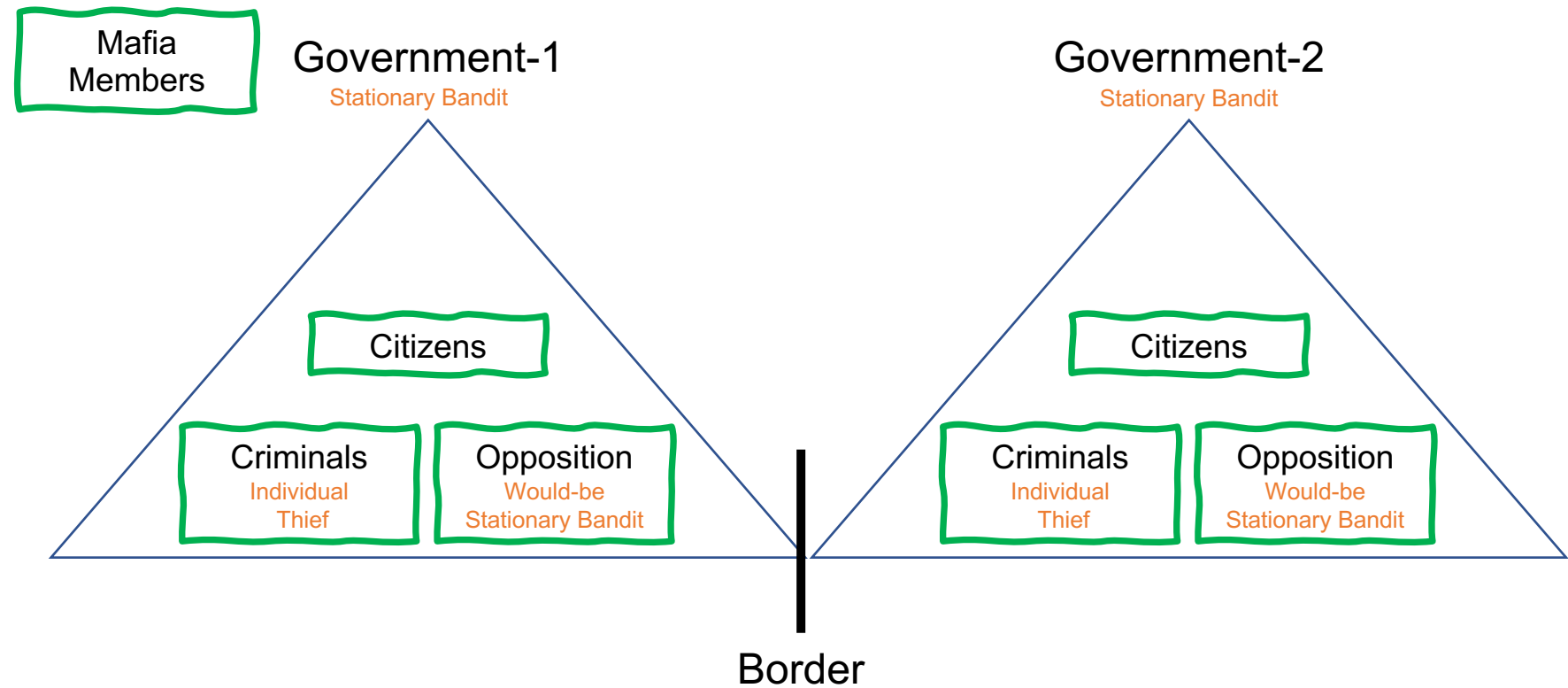
□ **Identify all the conflicts**
□ **Which of them are two-sided conflicts?**
    both sides can impose violence / coercion
□ **Identify Stationary Bandit' strategies to mitigate them**

Any expectations regarding the Cyberconflict?

How Technology Evolves
Some Speculations

**Communication Technology is a by-product!** [of what?]
☐ Writing For Saving Information in Time, not in Space!
   ☐ Earliest Artifacts are not 'diplomatic correspondence'
                 but 'barn books'!

☐ **Technology restricts:**
   ☐ Territorial Control: Costs
   ☐ Equilibrium:
      ☐ Bandits ☐ States ☐ Borders

☐ Technology Penetration **VS**
   Monopolization of Coercion

History of Technology: Pre-Internet?

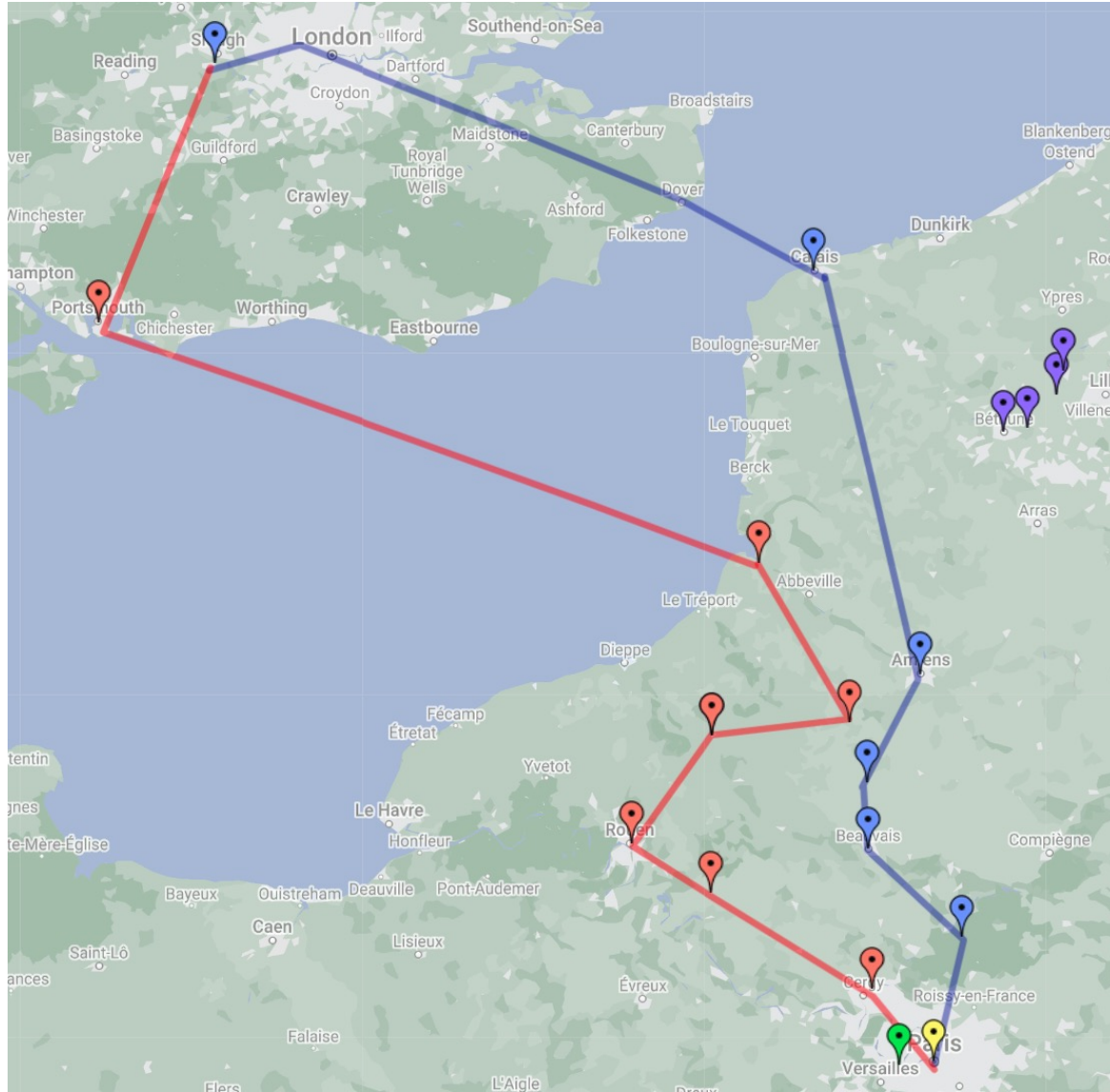(a) Post Towns and Sub-Post Towns   (b) Post Towns and Post Roads
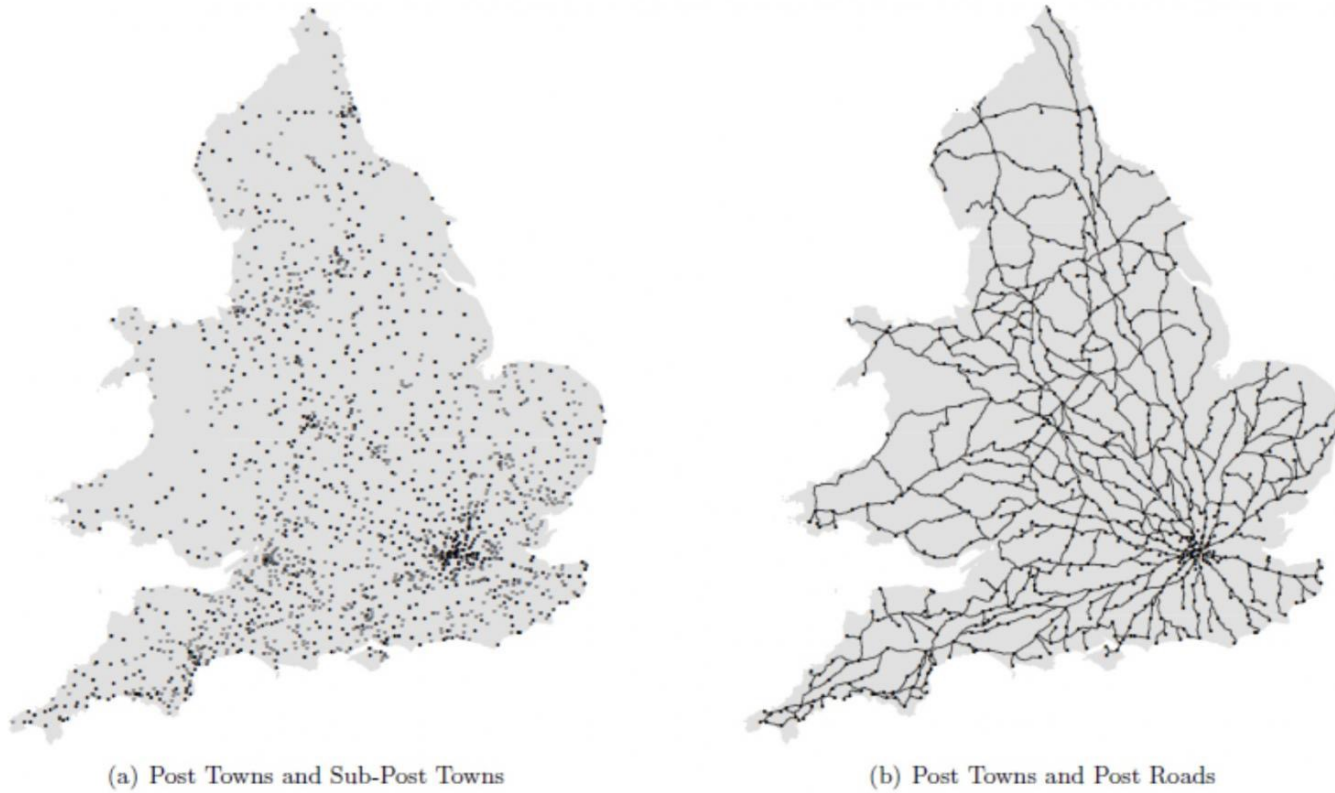
Note: The maps show England and Wales. Panel (a) shows post towns (black dots) and sub-post towns (grey crosses) observed around 1838. Panel (b) shows post towns (black dots) and postal roads digitized from maps around 1838.
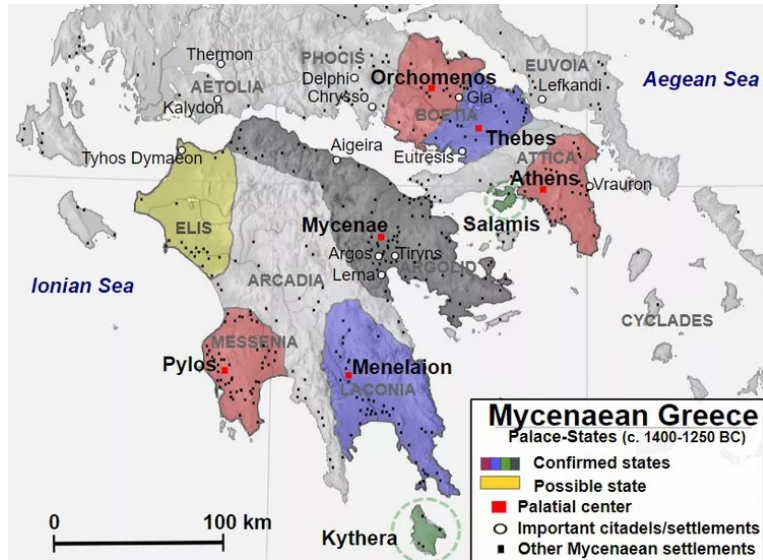
Figure 2 Post towns, sub-post towns, and post roads in the UK around 1838

How Technology Evolves
Some Speculations

Technology Steps In:

Communication & Monopolization of Violence

Mycenaean Greece
Palace-States (c. 1400-1250 BC)

☐ Ostracism as Punishment

☐ Technology restricts
    ☐ Costs of Territorial Control
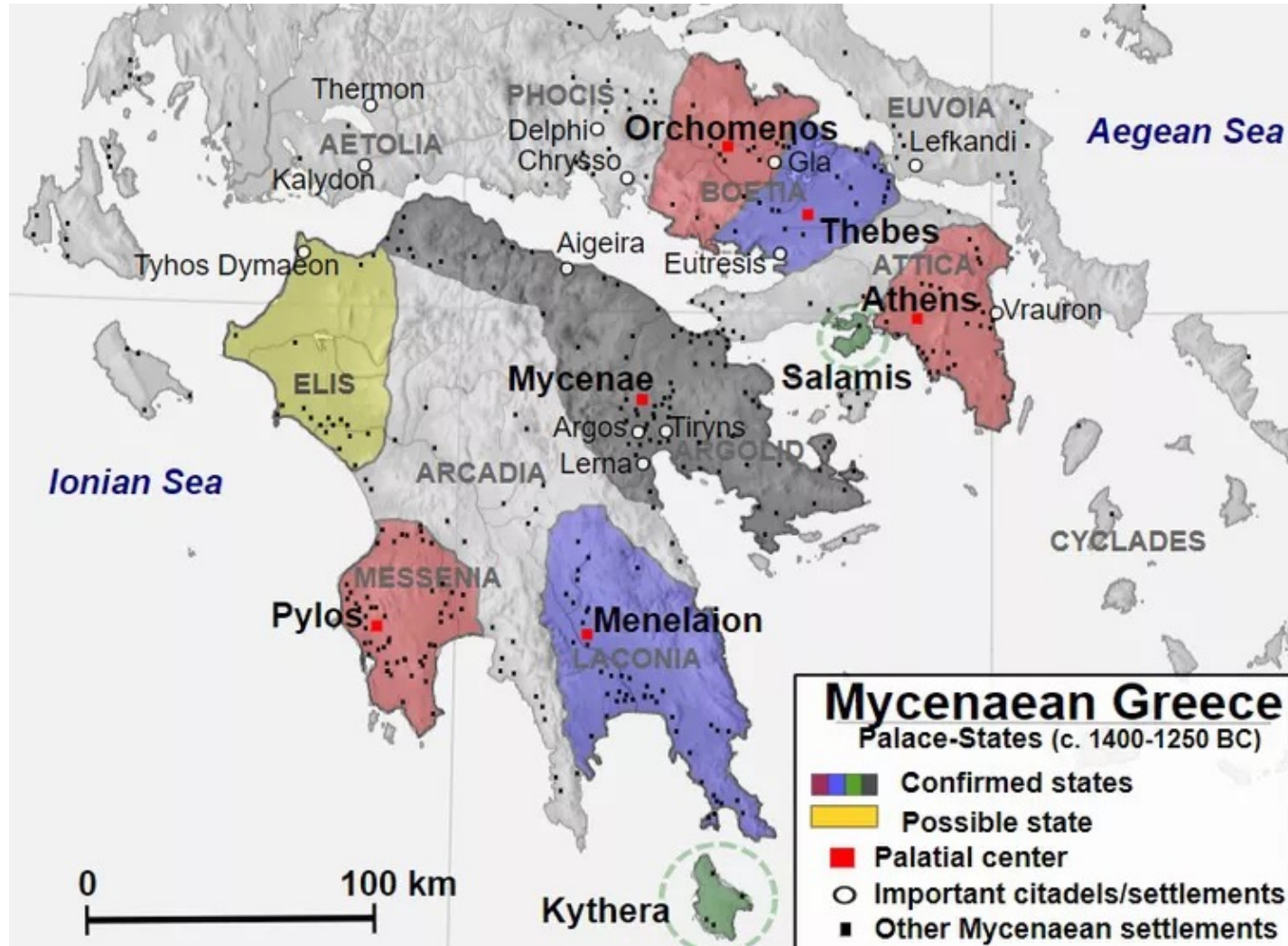   ☐ Equilibrium:
        ☐ # Bandits / # States
        ☐ Borders

☐ Identify Stationary Bandit' strategies to mitigate them

Technology Steps In: Communication & Monopolization of Violence

☐ Ostracism as Punishment

☐ Technology restricts
   ☐ Costs of Territorial Control
   ☐ Equilibrium level of

☐ Identify Stationary Bandit' strategies to mitigate

Mycenaean Greece
Palace-States (c. 1400-1250 BC)
Confirmed states
Possible state
■ Palatial center
○ Important citadels/settlements
▪ Other Mycenaean settlements

Cyber Changes Nature of Power:

☐ Borders/Walls as Prevention

☐ Technology restricts
    ☐ Costs of Territorial Control
    ☐ Equilibrium level of

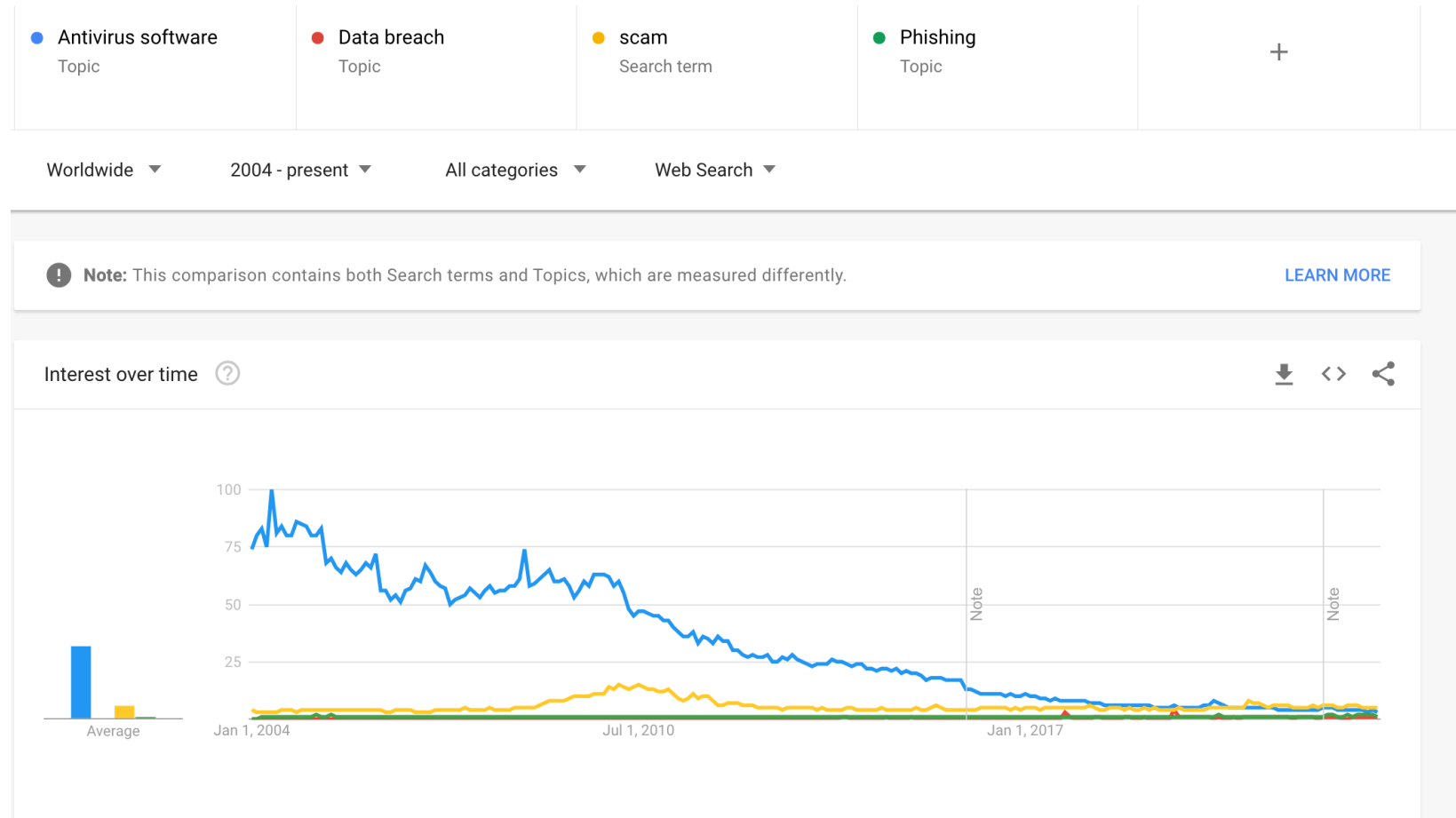☐ Identify Stationary Bandit' strategies to mitigate
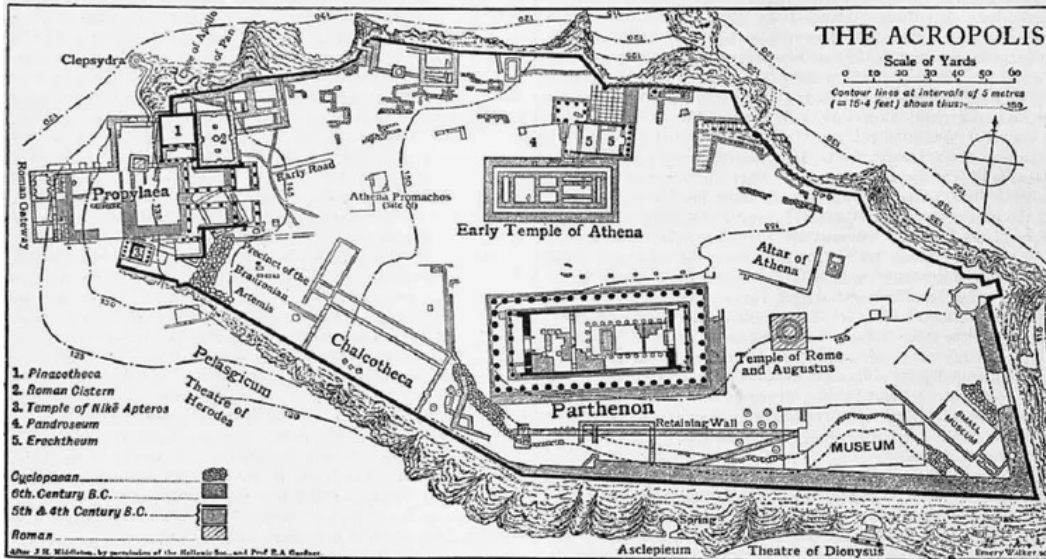
Technology Steps In: Summary

Figure II. RTLM radio coverage
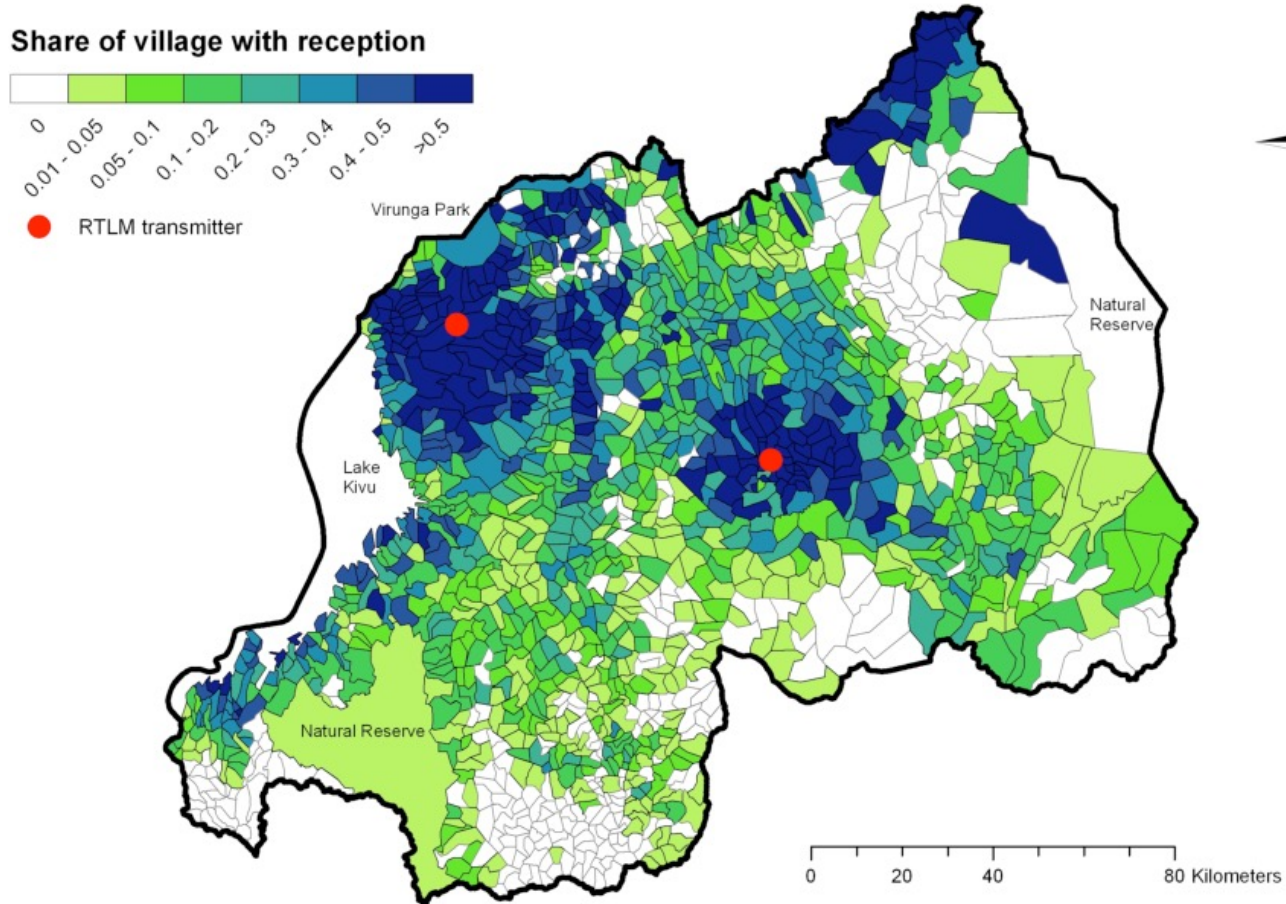
First guess is wrong:
Monopolization of violence does not work in CyberSpace

Although this perspective was looked different 15 years ago: Viruses and Antivirus Companies as Protection-Racket Business

Technology Steps in

☐ **Physical Space**
    ☐ not only lead to a conflict but also triggers the development of the technologies
    ☐ Geography completely determines the communication due to costs it creates
    ☐ Role of beliefs

☐ **Observed Patterns**

Writing -> Beacons, Semaphores -> Books -> Invention of print press ->
Telegraph -> Phones -> Modems -> Internet -> Web -> Social Media

☐ **Important Trends**

1. Increase efficiency of information diffusion due to cheaper and faster technologies
2. One-to-one -> one-to-many -> many-to-many
3. Shift in a relative importance of substantive technologies and communication technologies -> communications and logistics use to be auxiliary things