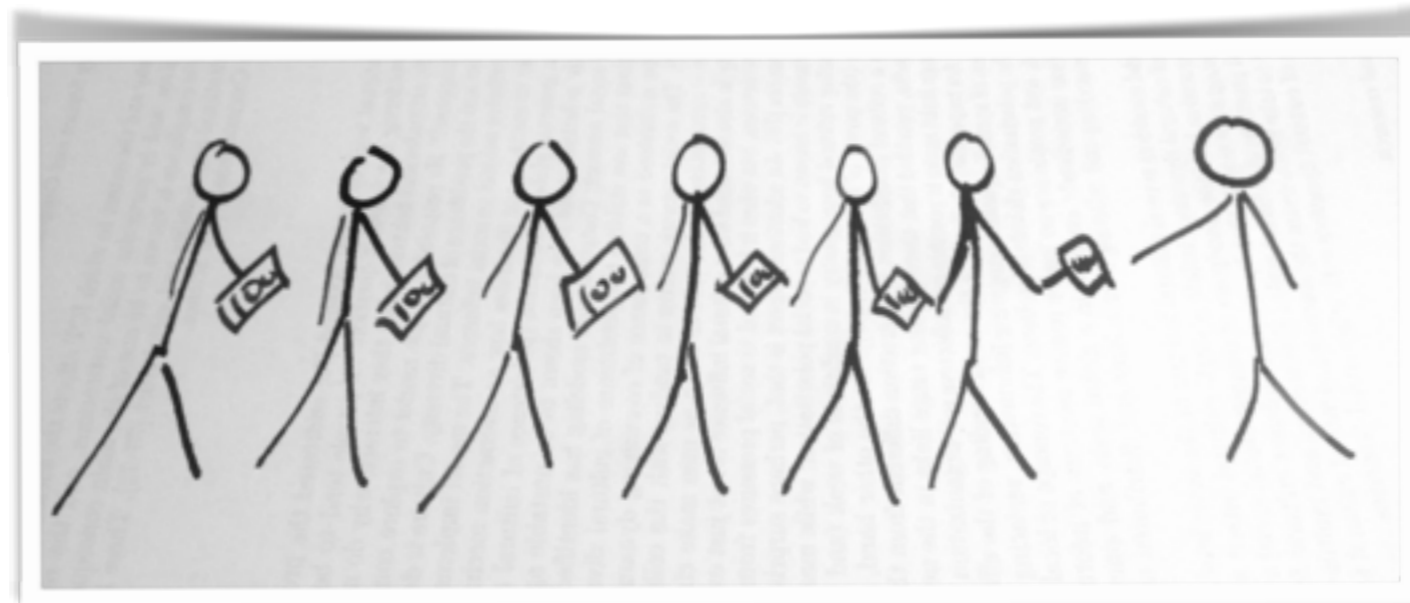


Modelling Extortion Rackets

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CSS, Lucca, September 2014

The Next 10 Min

1. Team Reasoning
2. **GLO**bal **D**ynamics of **E**xtortion **R**acket **S**ystems
3. An ABM of Team Reasoning in Extortion Rackets
4. Conclusions

1. Team Reasoning

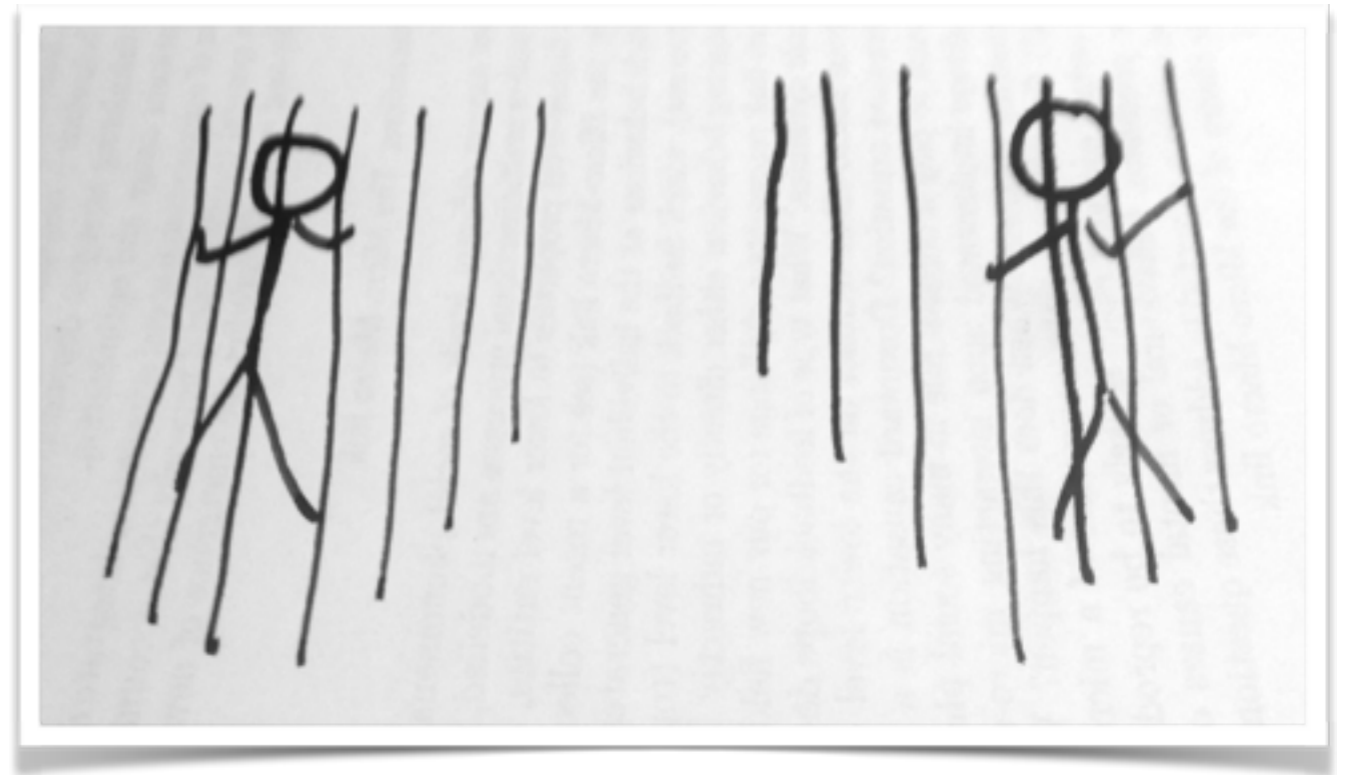
Game Theory

C's Choice

	C	D
C	3,3	0,5
D	5,0	1,1

R's Choice

Prisoner's Dilemma



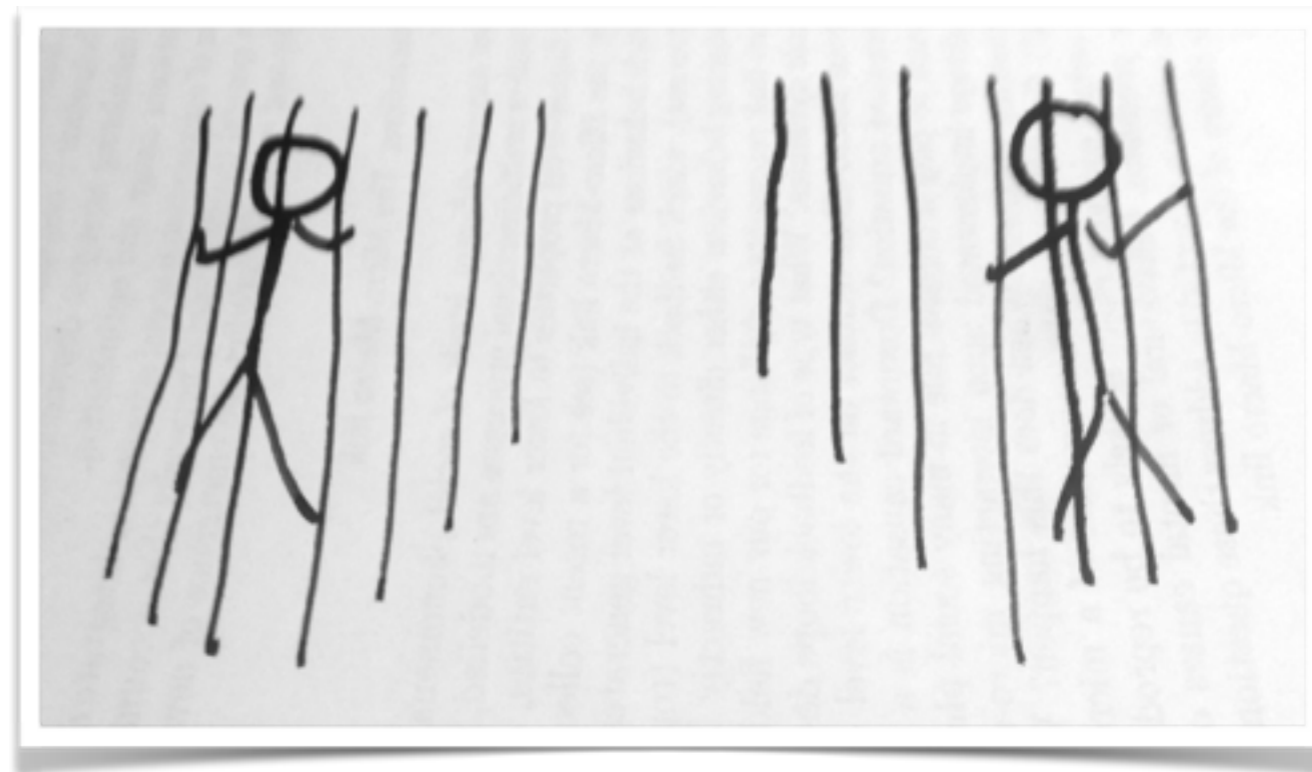
Basic Assumptions:

- *Individuals are rational.*
- *Individuals are rational if they maximise their utility.*
- *Individuals assume the other player(s) are rational.*
- *What is rational for one agent to do depends on what is rational for another agent.*
- *Equilibria are solution to games.*

A choice

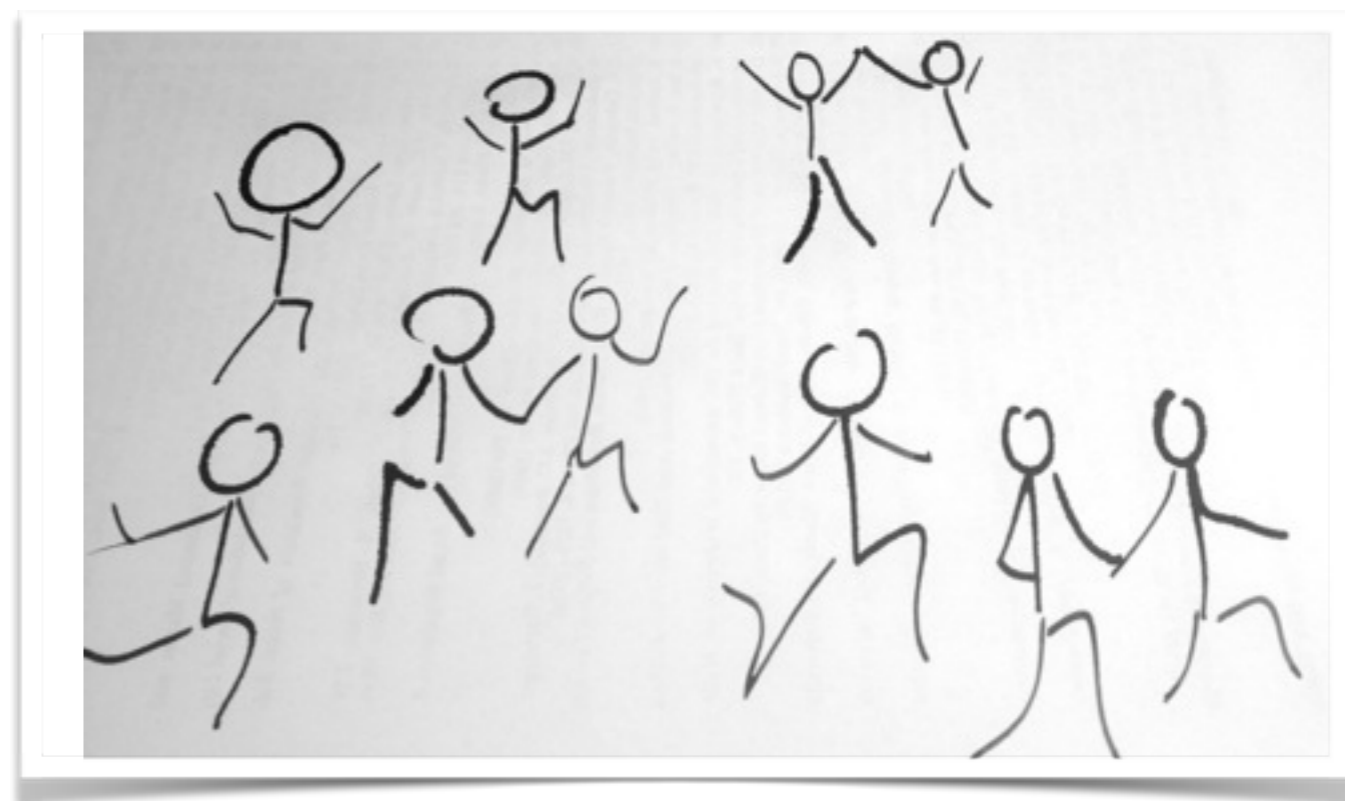
3,3	0,5
5,0	1,1

The individual lines



3,3	0,5
5,0	1,1

The collective diagonal



Team Reasoning

Bacharach: Team reasoning is triggered by *strongly interdependent games*. A game is strongly interdependent if a Nash equilibrium is dominated by a Pareto optimal solution. Team reasoning “just happens” when the game is of the right kind, but it is conditional.



Rationality is reinterpreted as seeing the collective diagonal in a strongly interdependent game.

Sugden: Mutually assured team reasoning

1. (1) I am a member of S.
2. (2) I identify with S and acknowledge U as its objective.
3. (3) In S, there is reciprocal reason to believe that each member of S identifies with S and acknowledges U as the objective of S.
4. (4) In S, there is reciprocal reason to believe that each member of S endorses and acts on *mutually assured* team reasoning.
5. (5) In S, there is common reason to believe that A uniquely maximizes U.

I should choose my component of A.

Rationality is a choice to be made given a social group situation.

GL**NDERS**

Global Dynamics of
Extortion Racket Systems

GLODERS

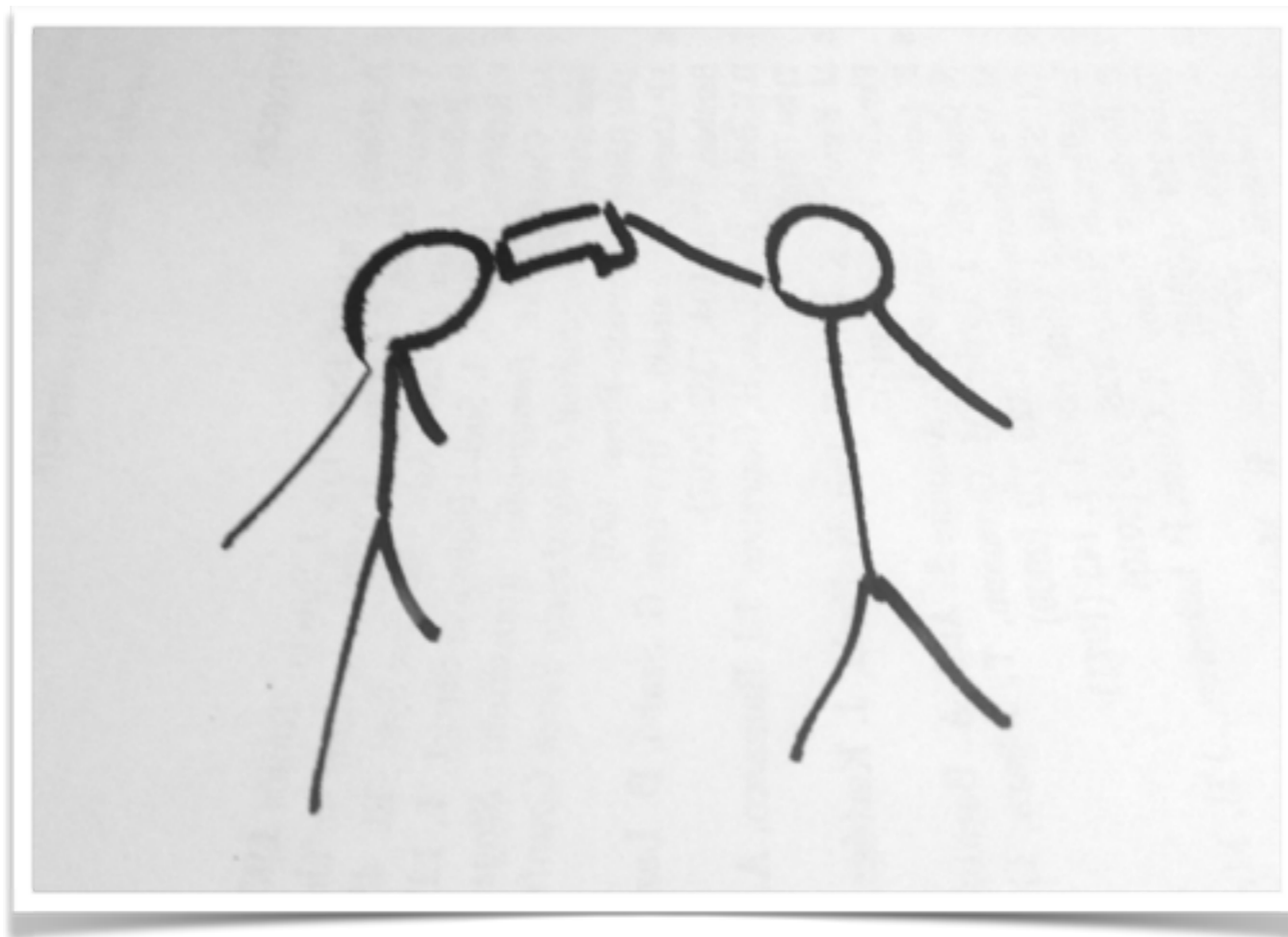


- Underlying dynamics of extortion rackets
- Societal conditions for success of extortion rackets
- Database of extortion cases in Sicily (Palermo)
- Simulation of Extortion Racket Systems (Rome)
- Qualitative data analysis of court files (Koblenz)
- Theoretical work, scenario building and testing (Surrey)
- Stakeholderboard (International Organised Crime Specialists)

Extortion and Extortion Rackets

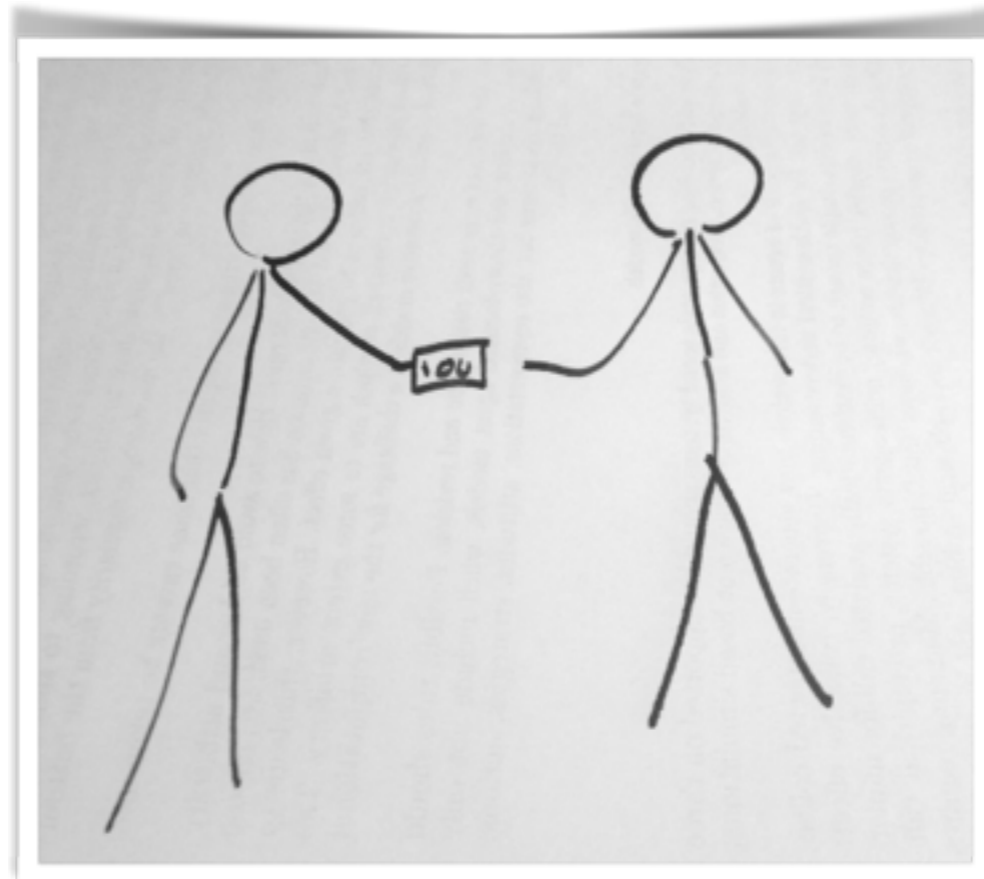
Extortion is the extraction of money/favours from a victim **using** (the threat of) **violence**.

An extortion racket is a **systematic and continuous** extortion of **several victims**.



Extortion as a Collective Dilemma

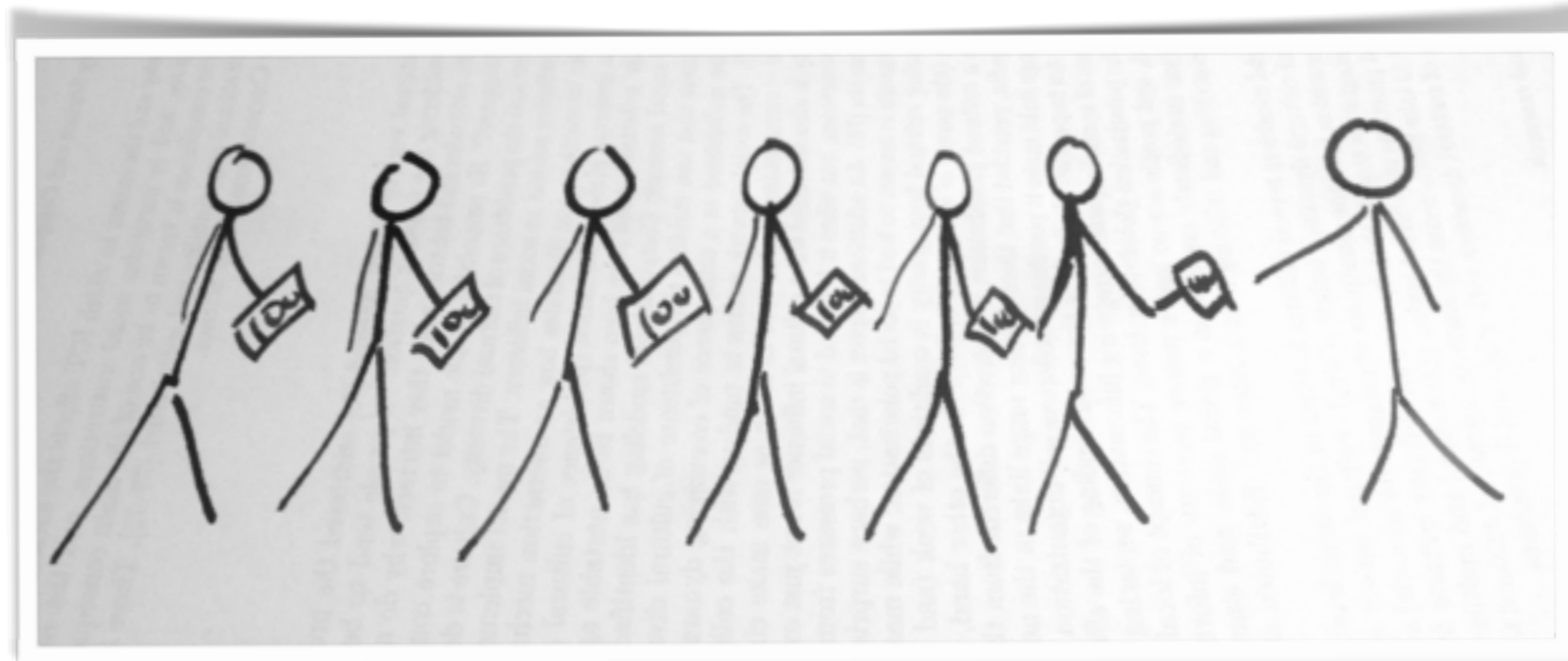
The best thing for each *individual* is to pay and thus not to be punished but for everyone around them not to pay (and take the risk of punishment) draining the Mafia of income. The best thing for the *group* is to not pay the pizzo. . .



Extortion as a Collective Dilemma

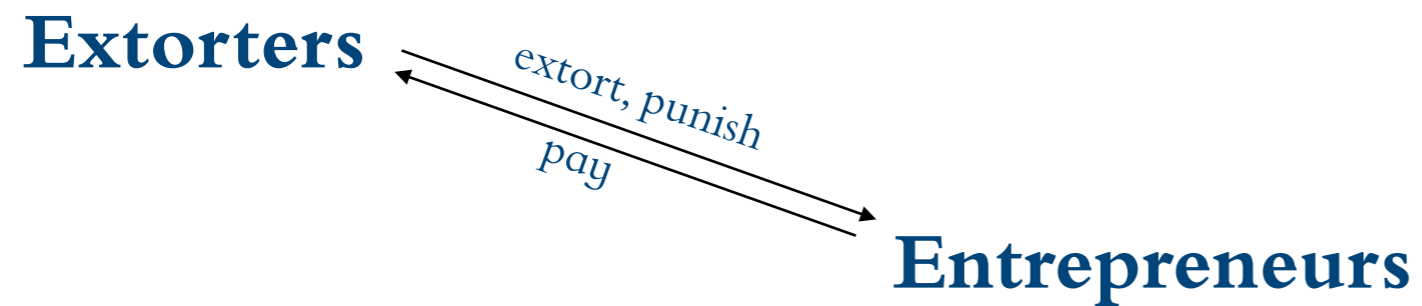
The best thing for each *individual* is to pay and thus not to be punished but for everyone around them not to pay (and take the risk of punishment), draining the Mafia of income. The best thing for the *group* is to not pay the pizzo. . .

This makes it a public goods game.

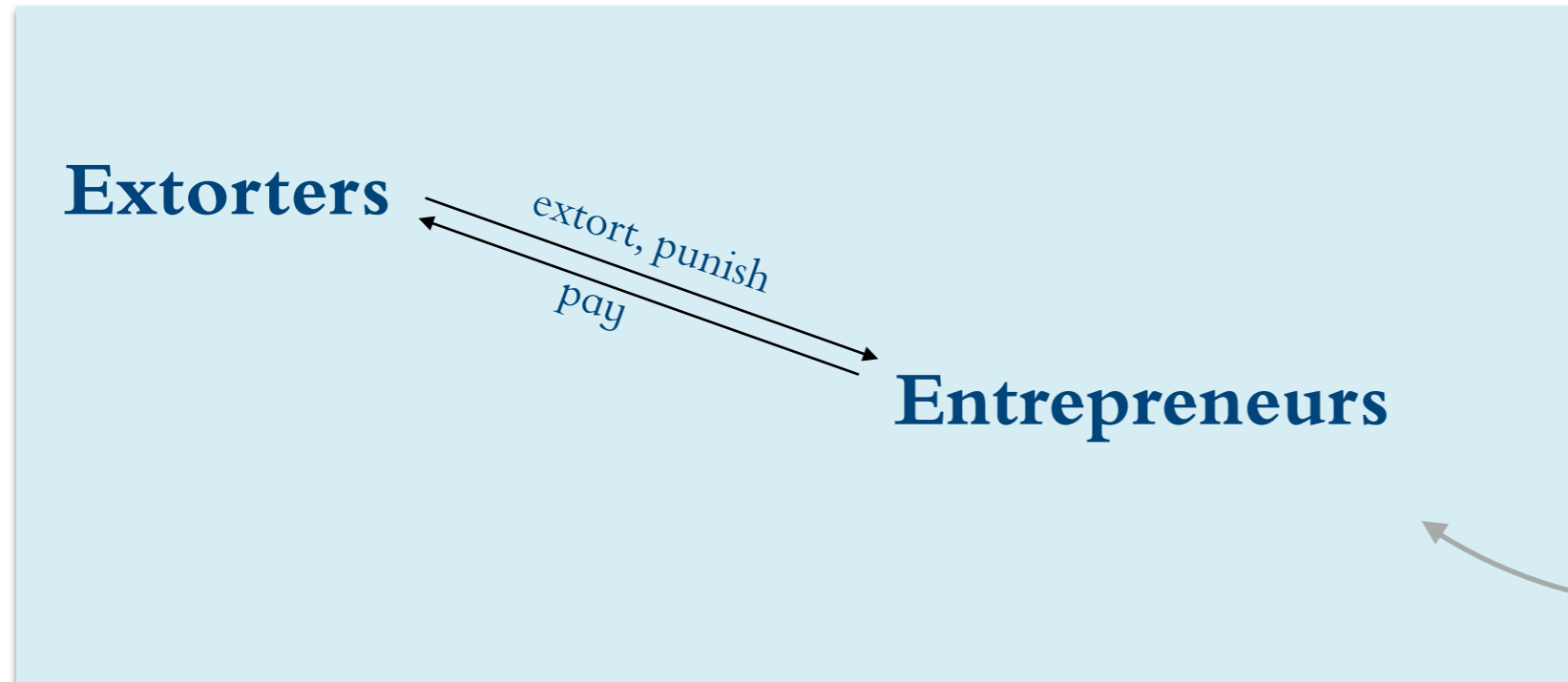


3. *ABM of Extortion Racket Systems*

An Existing Model

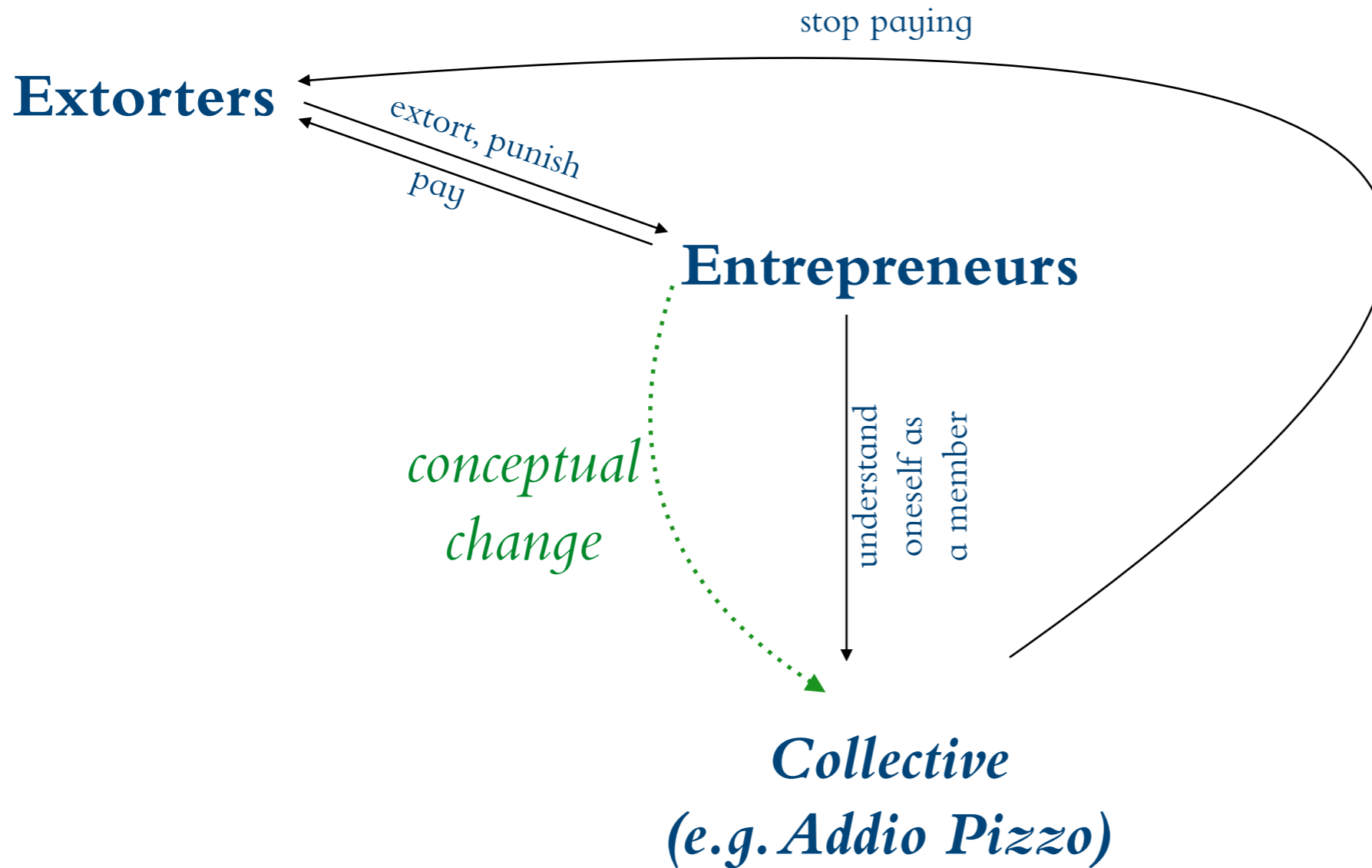


An Existing Model



Individualist Model

Team Reasoning in Extortion Rackets



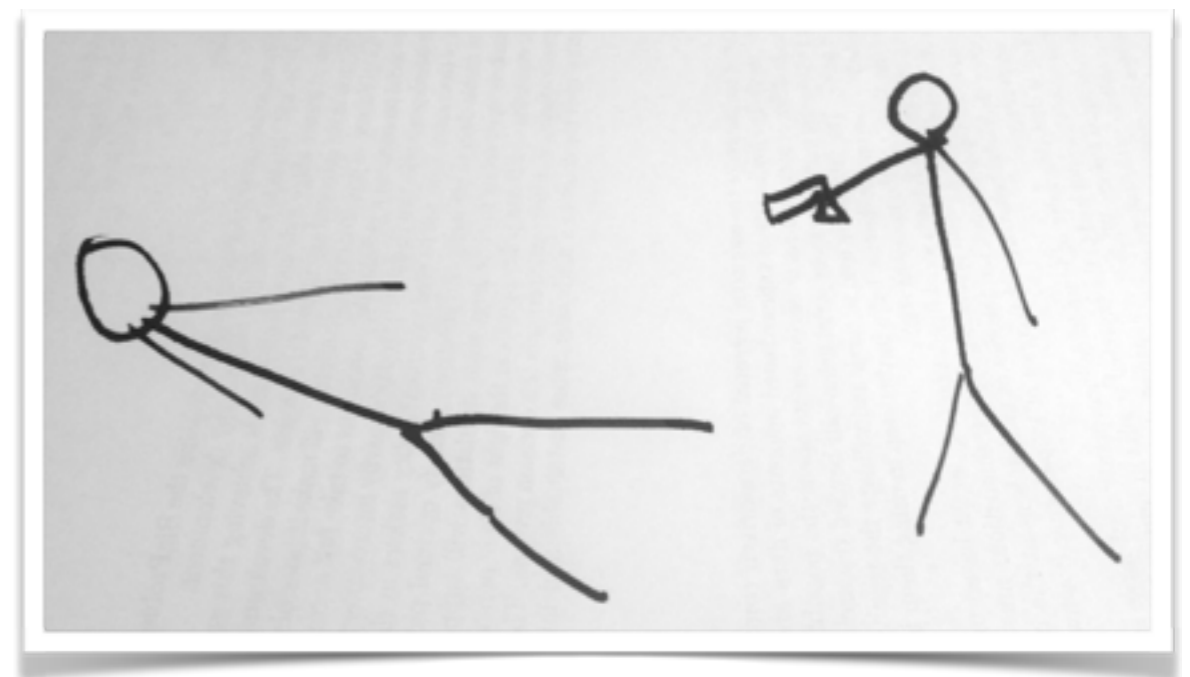
Team Reasoning in Extortion Rackets

- Extorters
- Entrepreneurs: **Collectivists or Individualists**

If $p_{punishment-probability} * possible-damage < p_{izzo} refuse$.

If $p_{punishment-probability} * possible-damage < group-wealth + group-pizzo refuse$.

- Income, *Pizzo*, Punishment Cost, Damages (kept constant)
- Extorter Radius
- Neighbourhood Radius
- Group Radius
- Number of Entrepreneurs
 - Ratio of Collectivists and Individualists
- Number of Extorters



Team Reasoning in Extortion Rackets

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- **Neighbourhood Radius**
- **Group Radius**
- Number of Entrepreneurs
 - **Ratio of Collectivists and Individualists**
- Number of Extorters



Analysis

	0% Collectivists	50% Collectivists	100% Collectivists
Overall	Low resistance, low punishment	Increased resistance , low punishment	High resistance , low punishment
Extorter Radius	Increases lead to resistance increase and punishment increase	Increases lead to resistance and punishment increases but less pronounced	Increases increases resistance only for high neighbourhood radii
Neighbourhood Radius	Increases lead to resistance decrease and punishment decrease	Similar but for low extorter radii increases lead to increased resistance	Increases lead to resistance increase
Group Radius	n/a	Increases lead to increased resistance	Increases lead to increased resistance

Scenario: Bottom-Up and Top-Down

- Bottom-up: Grass Roots Movement of *Addio Pizzo*

Entrepreneurs joining together in no longer paying the pizzo

About a 10% point reduction in pizzo payments since 2004

In Model: Increasing numbers of Collectivists



- Top-down: Italian State fighting the Mafia

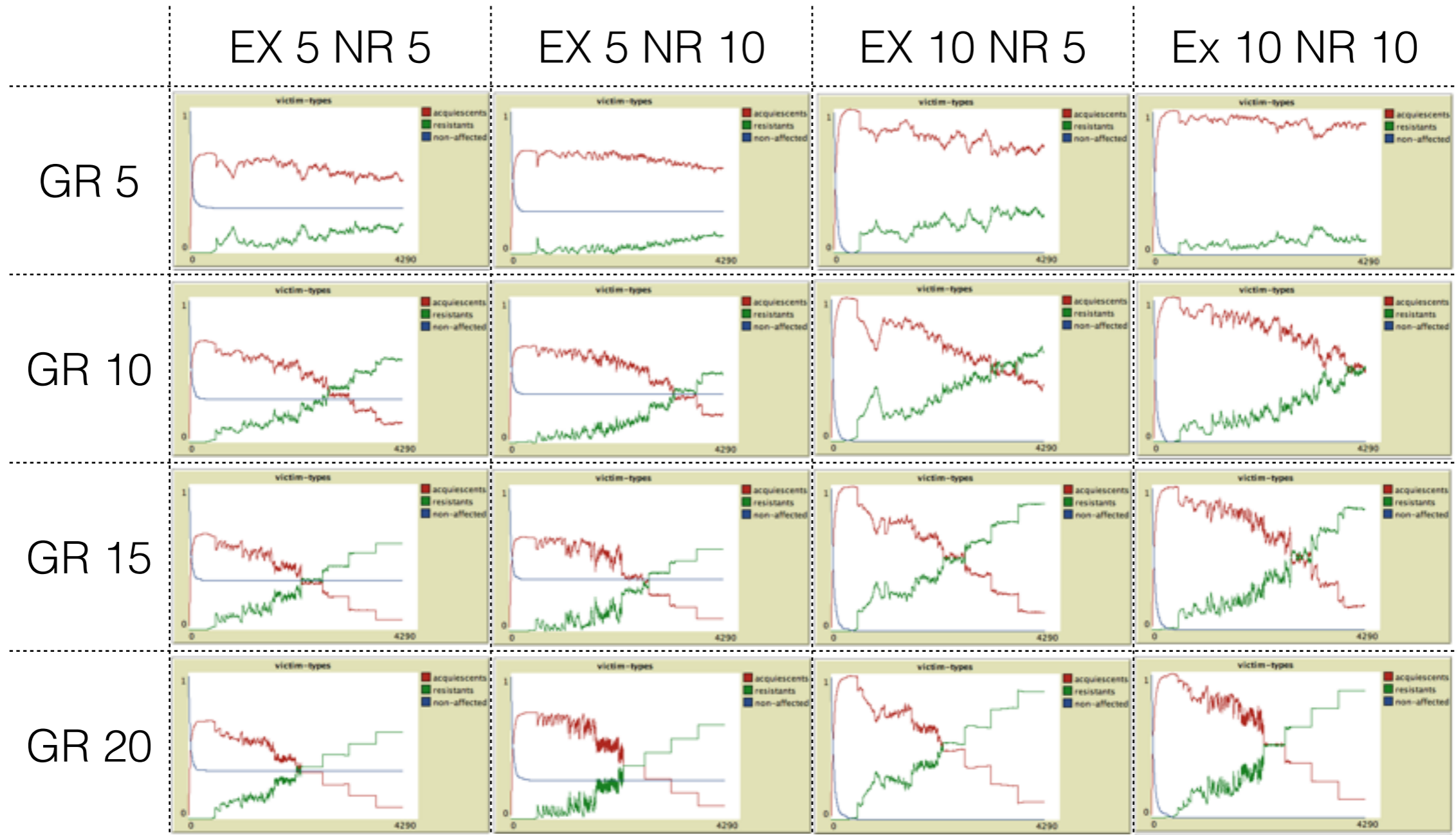
Wealth confiscated

Mafioso imprisoned

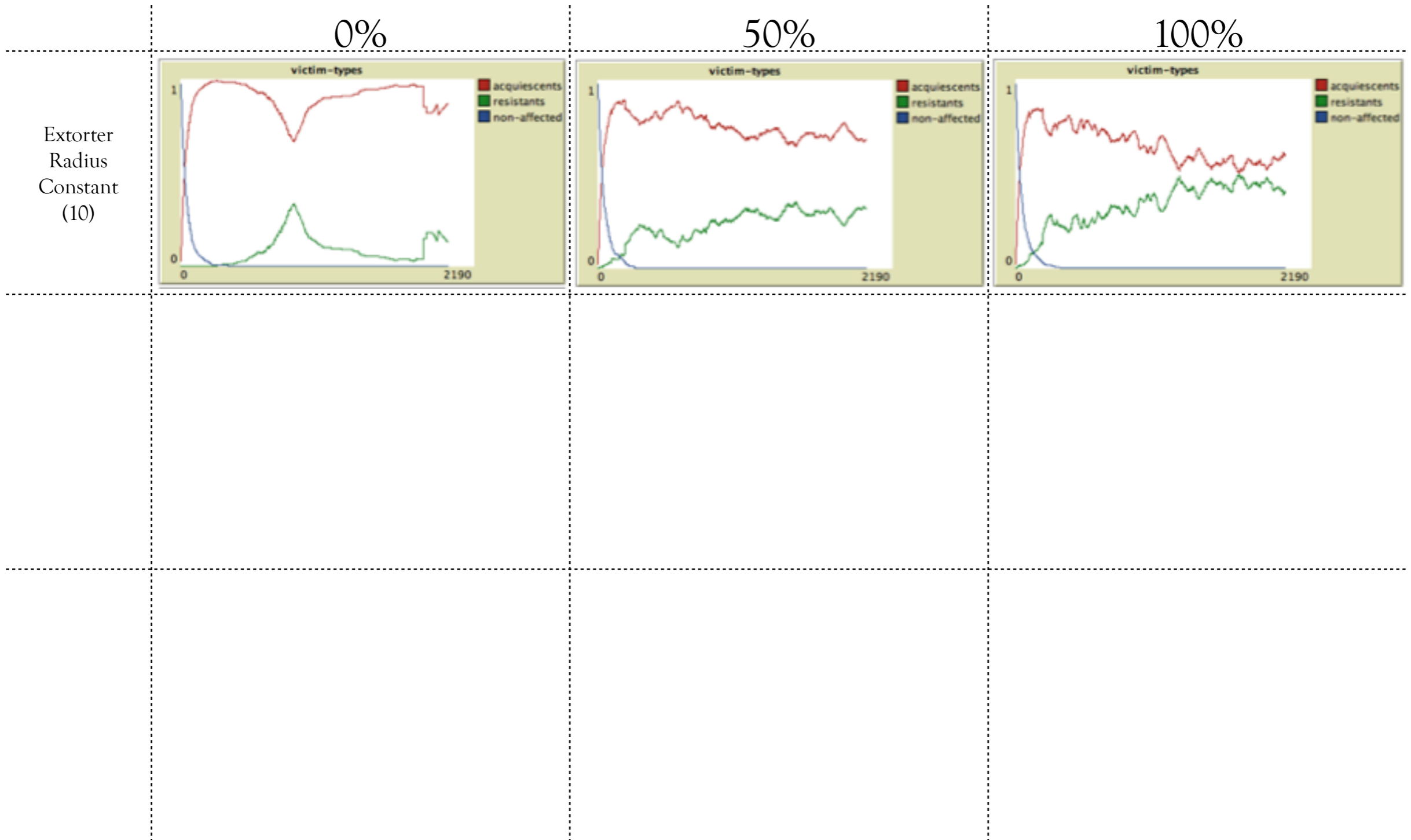
In Model: Decreasing extorterter radius (reduced step by step)

Mafiosi can no longer punish (taken out one by one)

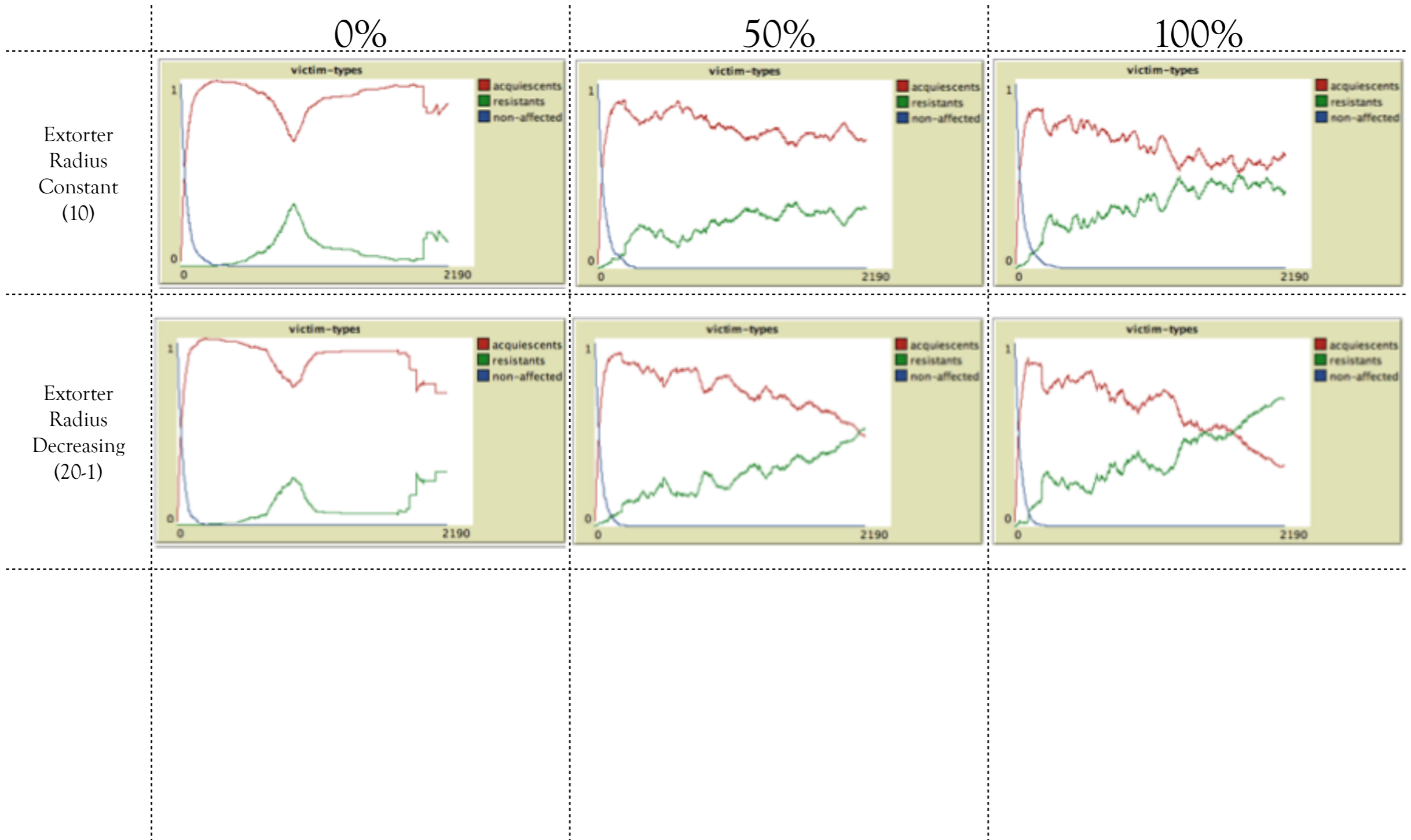
Typical Runs - Resistance Levels



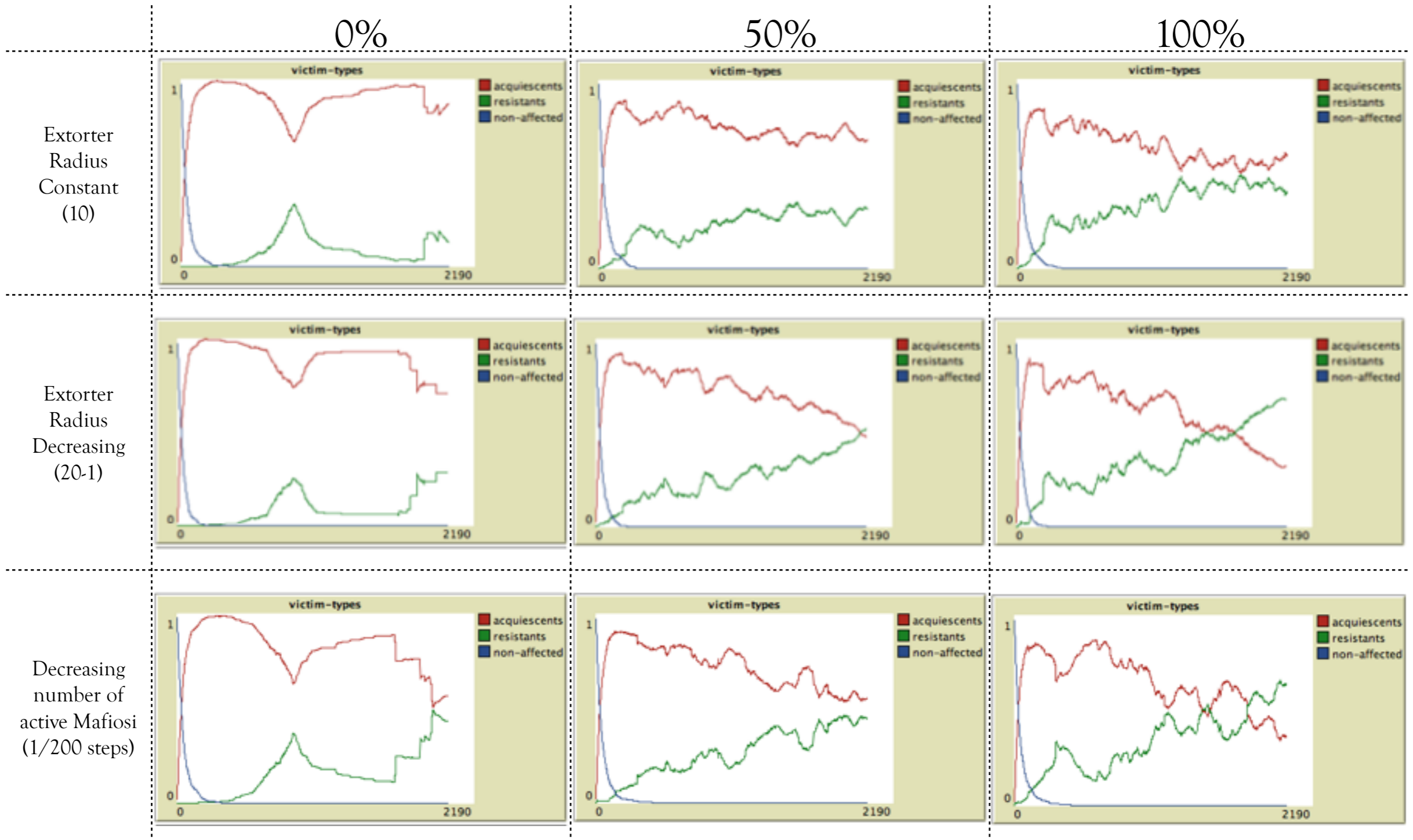
Typical Runs - Bottom-Up and Top-Down



Typical Runs - Bottom-Up and Top-Down



Typical Runs - Bottom-Up and Top-Down



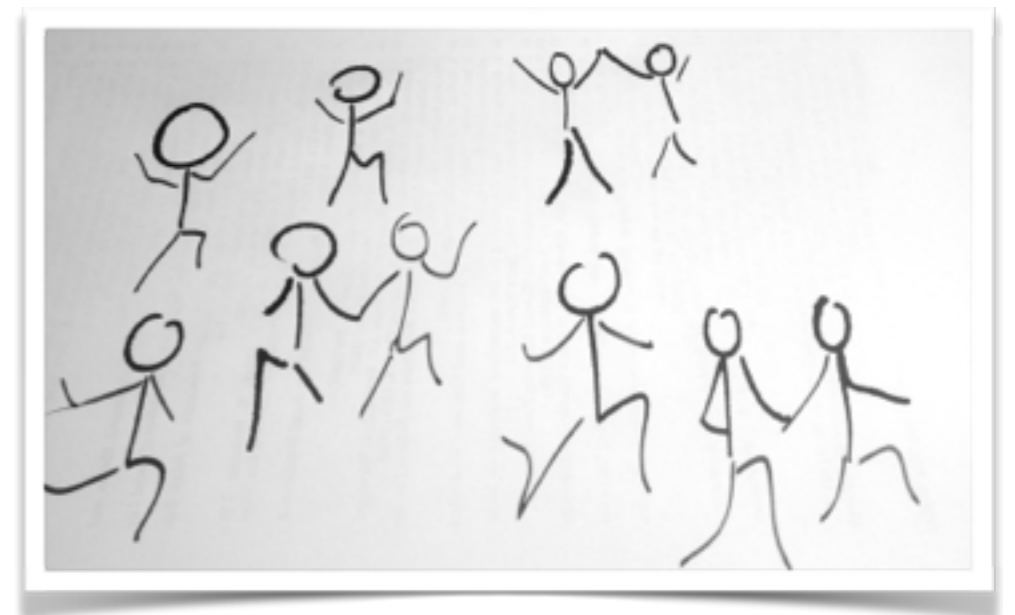
Conclusions and Future Work

Conclusions

- Conceptualising ERS as **collective dilemmas** can give a **societal explanation**
- Applying **Team Reasoning** shows that collective solutions are **possible**
- Scenario: Collectives increase resistance
- Resistance increases become particularly pronounced when collective action is combined with judicial measures
 - A decreasing radius curbing extorter territory
 - Increasing the Mafiosi on strict surveillance so they can extort but no longer punish

Future Work

- Generalise the model to implement Team Reasoning as a genuine decision mechanism (*Collective Reasoning as a Moral Point of View*)





Thanks!