

DISOBEDIENCE AS A MECHANISM OF CHANGE

David Burth Kurka¹, Jeremy Pitt¹, Peter Lewis², Alina Patelli² and Anikó Ekárt²

¹Department of Electrical and Electronic Engineering, Imperial College London

²Aston Lab for Intelligent Collectives Engineering, Aston University

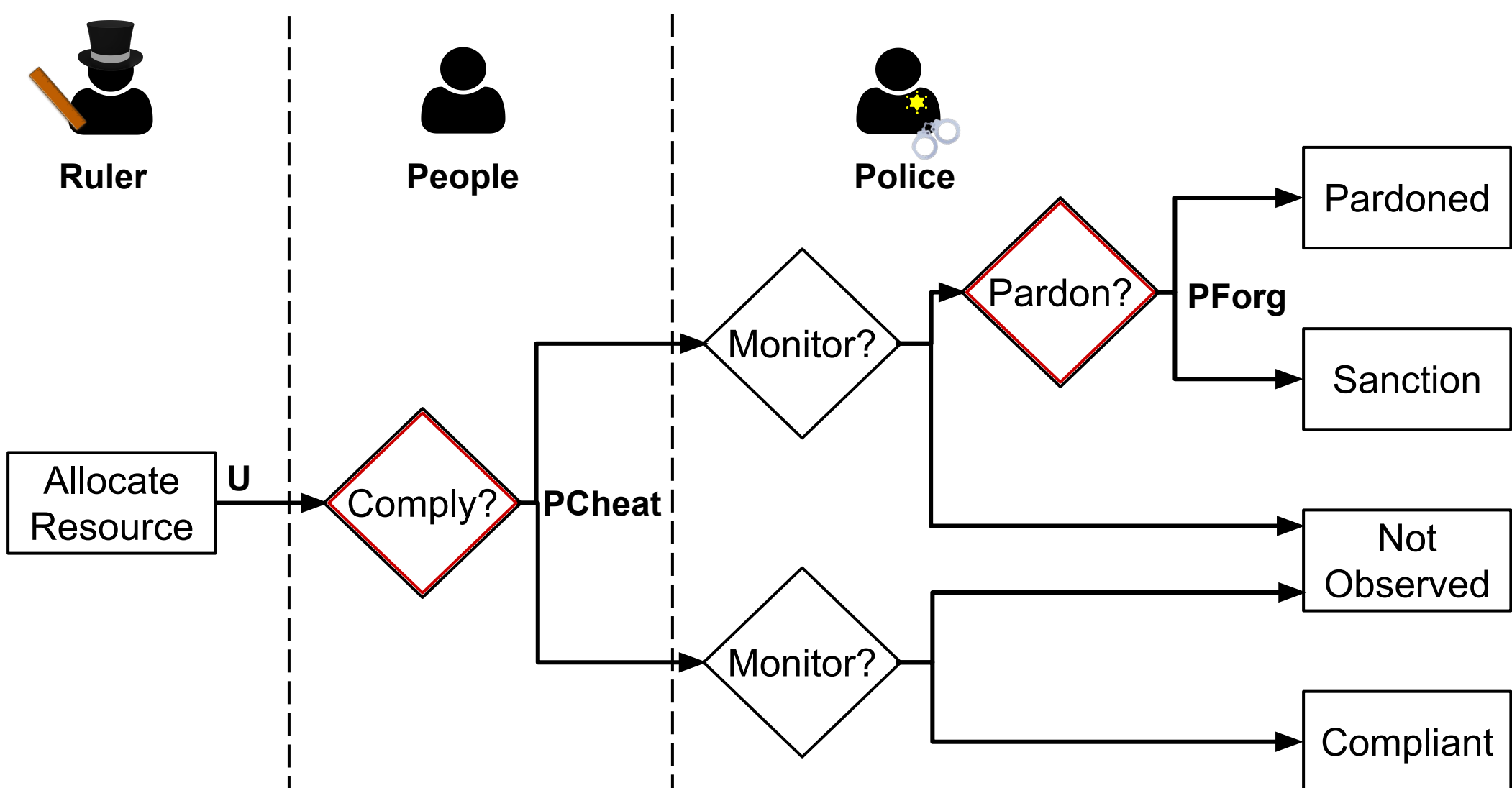
DISOBEDIENCE IN SOCIETY

- **Disobedience** has been used historically as a form of resistance and call for change in unfair regimes.
- Among the factors that motivate widespread disobedience are:
 - **The iron law of oligarchy** – The tendency of rulers to change norms to their own benefit.
 - **Principled violation of policy** – Selective common-sense non-application of a sanction.

DISOBEDIENCE AS LEARNING MECHANISM

- Can these notions be applied to **norm-governed MAS**?
- Can disobedience be a form of **social learning**, enabling the construction of adaptive systems?
- How can those concepts enable **rule- or ruler-change** of corruptive systems?

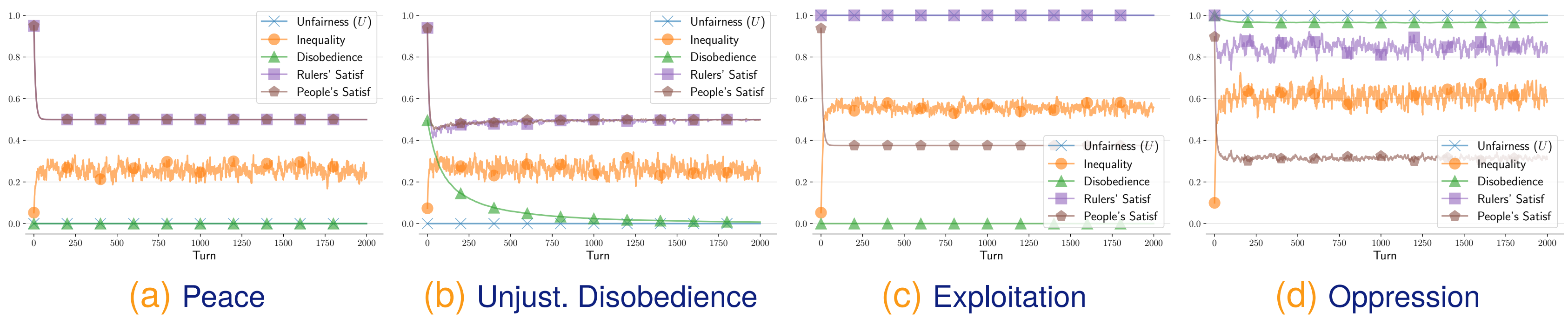
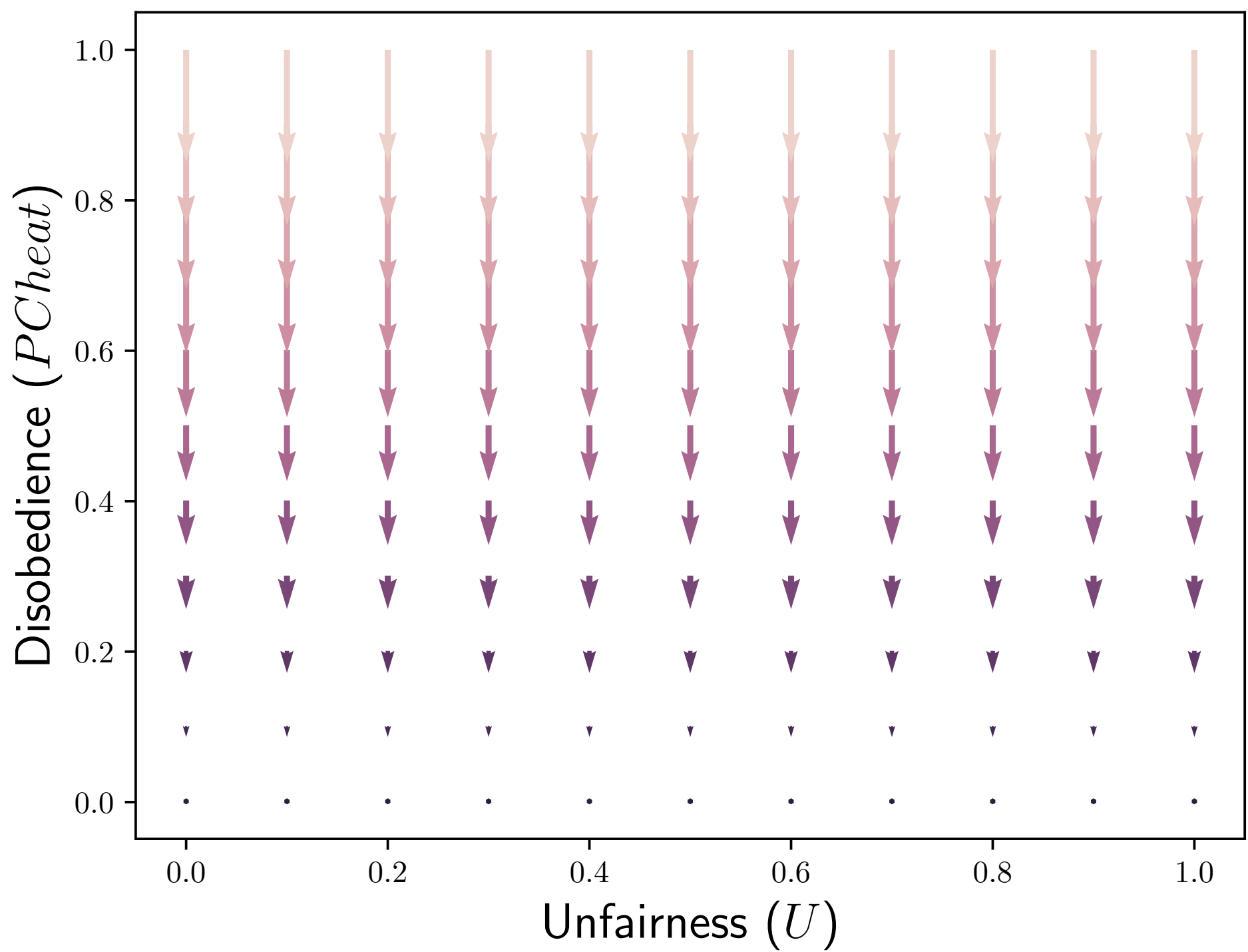
BASE PREMISES AND OPERATIONALISATION



Base Premises	P1 - A norm is in place P2 - Compliance decision P3 - Monitoring and Sanctions	Rulers - Resource Allocation Policy People - Appropriation of resource Police - Check if appropriation = allocation
Disobedience Premises	P4 - Fairness decay over time (corruption) P5 - Possibility of pardon by law enforcers	U - Corruption of allocation policy towards clique first $PCheat$ - Decision of compliance as reaction of system's feedback (<i>sanction, pardon, not caught</i>) $PForg$ - Probability of pardon as function of perceived unfairness ($PForg = f(Gini)$)
Transformation Premises	P6 - Rule Destitution	Satisfaction - Individual satisfaction as function of allocated (political) or received (apolitical) resources Reformation - If disobedience is above a threshold (lost of governability), new Rulers and Police are appointed

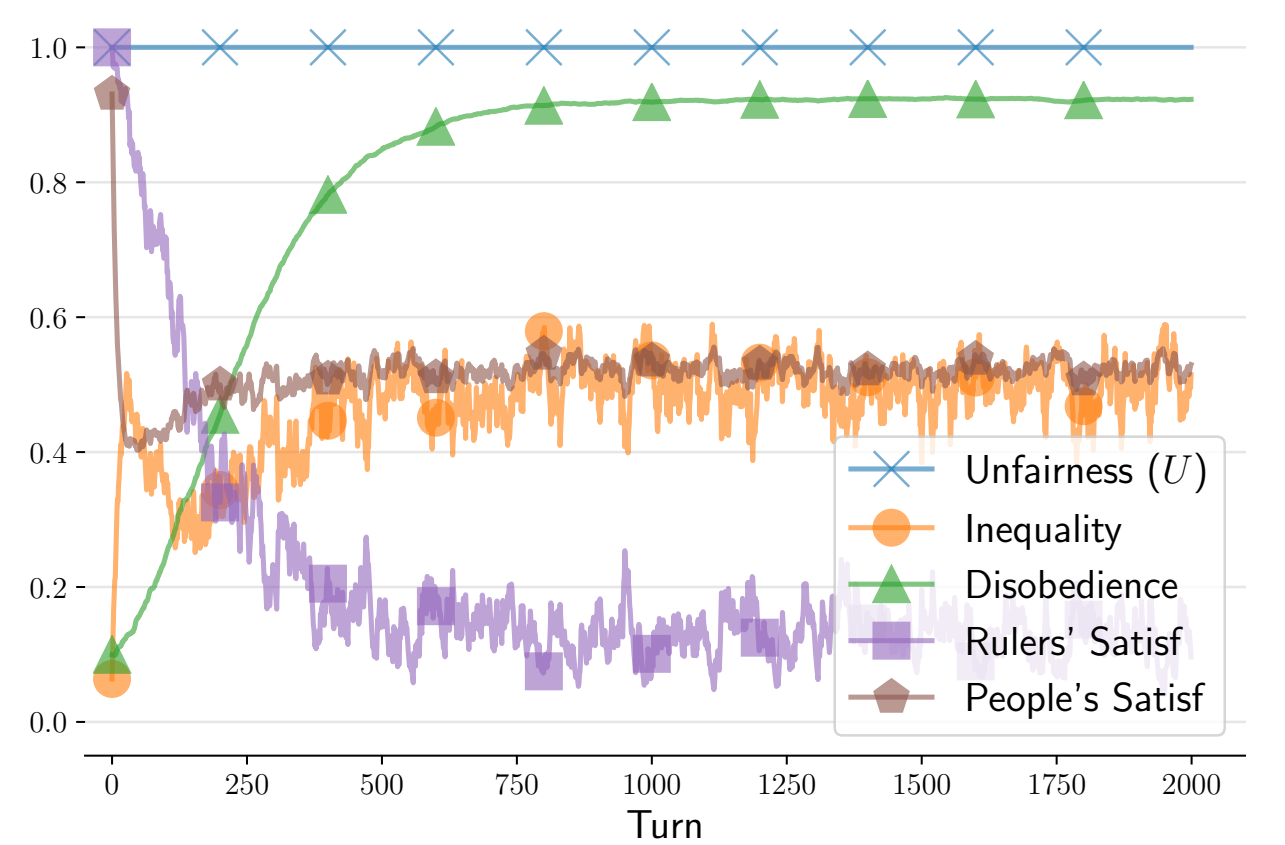
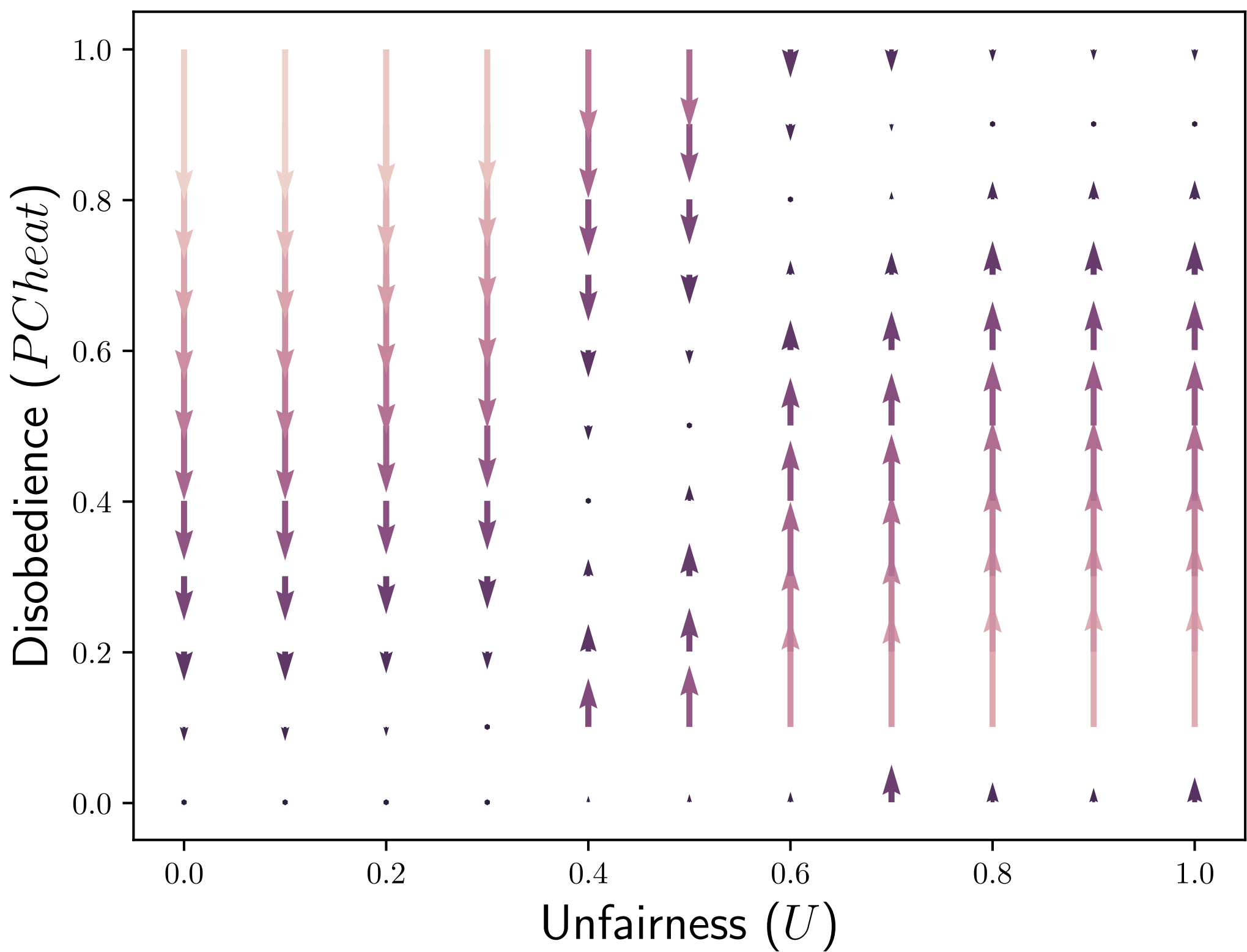
BASE GAME

Without pardoning or reformation, People stay at the mercy of rulers, not having another rational choice than obeying, no matter how unfair is the current policy.



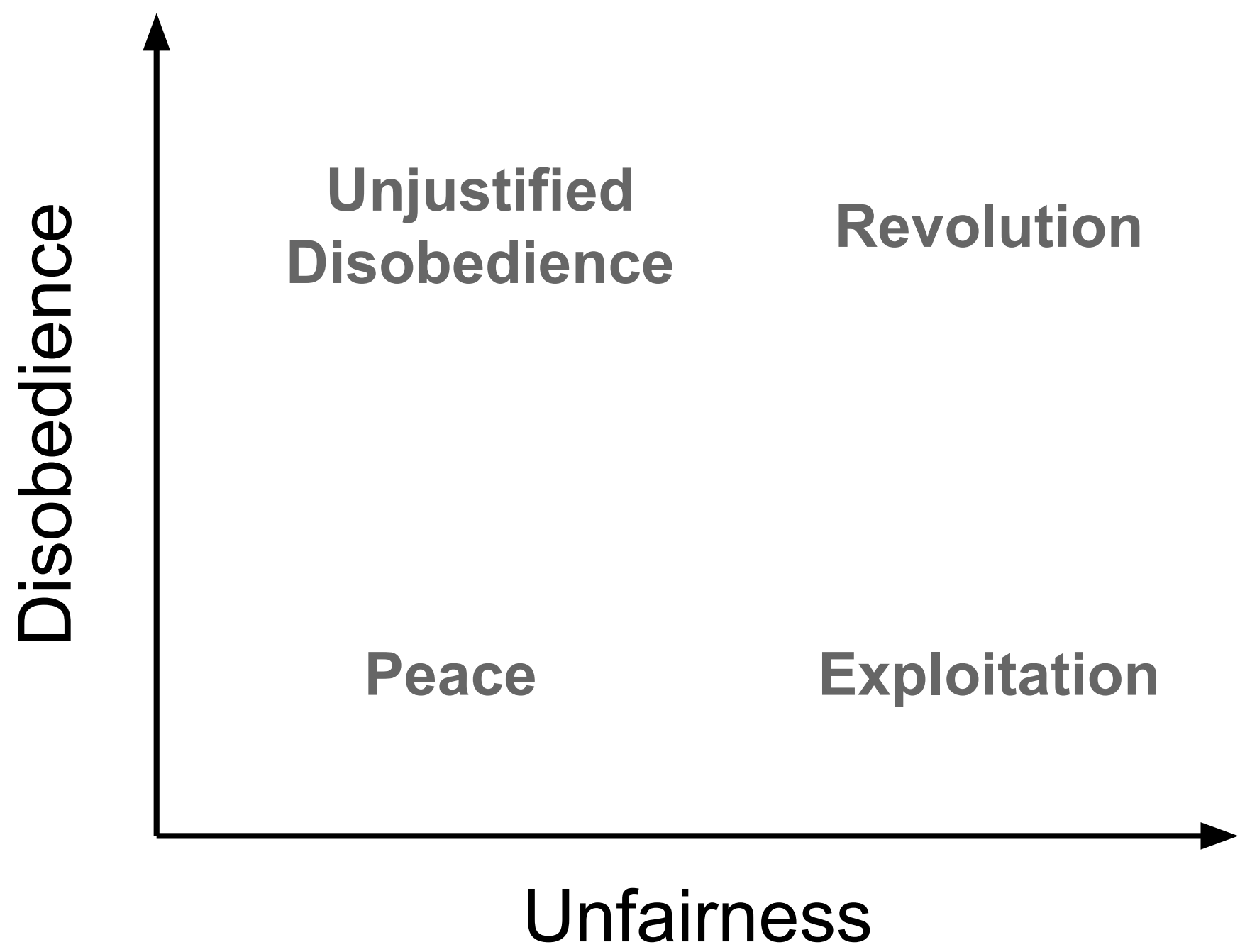
FIRST EXTENSION – PARDONING

Obedience is now conditioned to unfairness level: if fair, agents obey; if unfair, agents tend to non-compliance. Given unfair allocation policy, Police validate norms disobedience, pardoning transgressions.



Agents can protest by freely demonstrating their dissatisfaction and appropriating resources, restoring the environment's fairness.

EXPLORATORY SPACE



SECOND EXTENSION – REFORMATION

Three possible dynamic equilibria:

