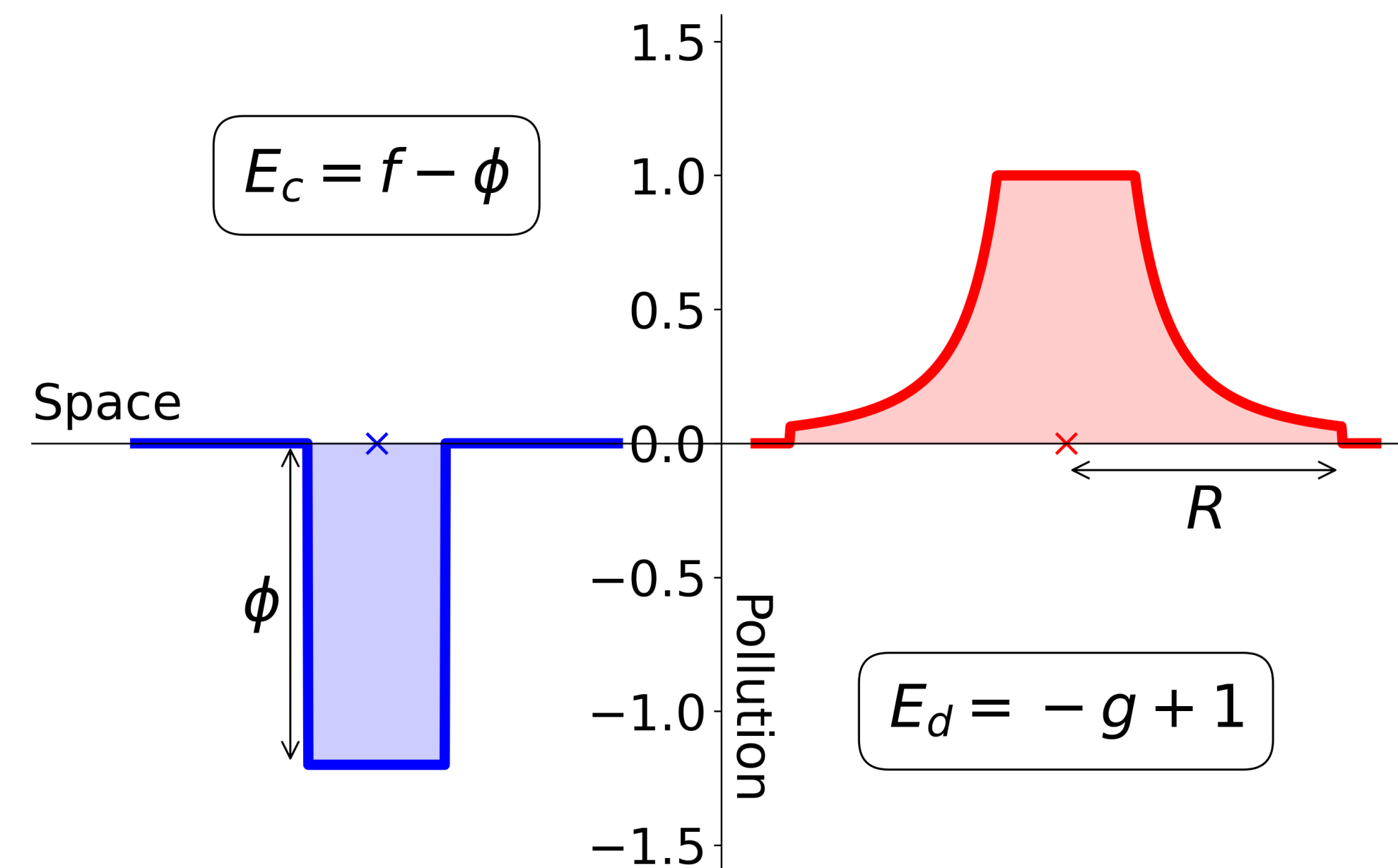


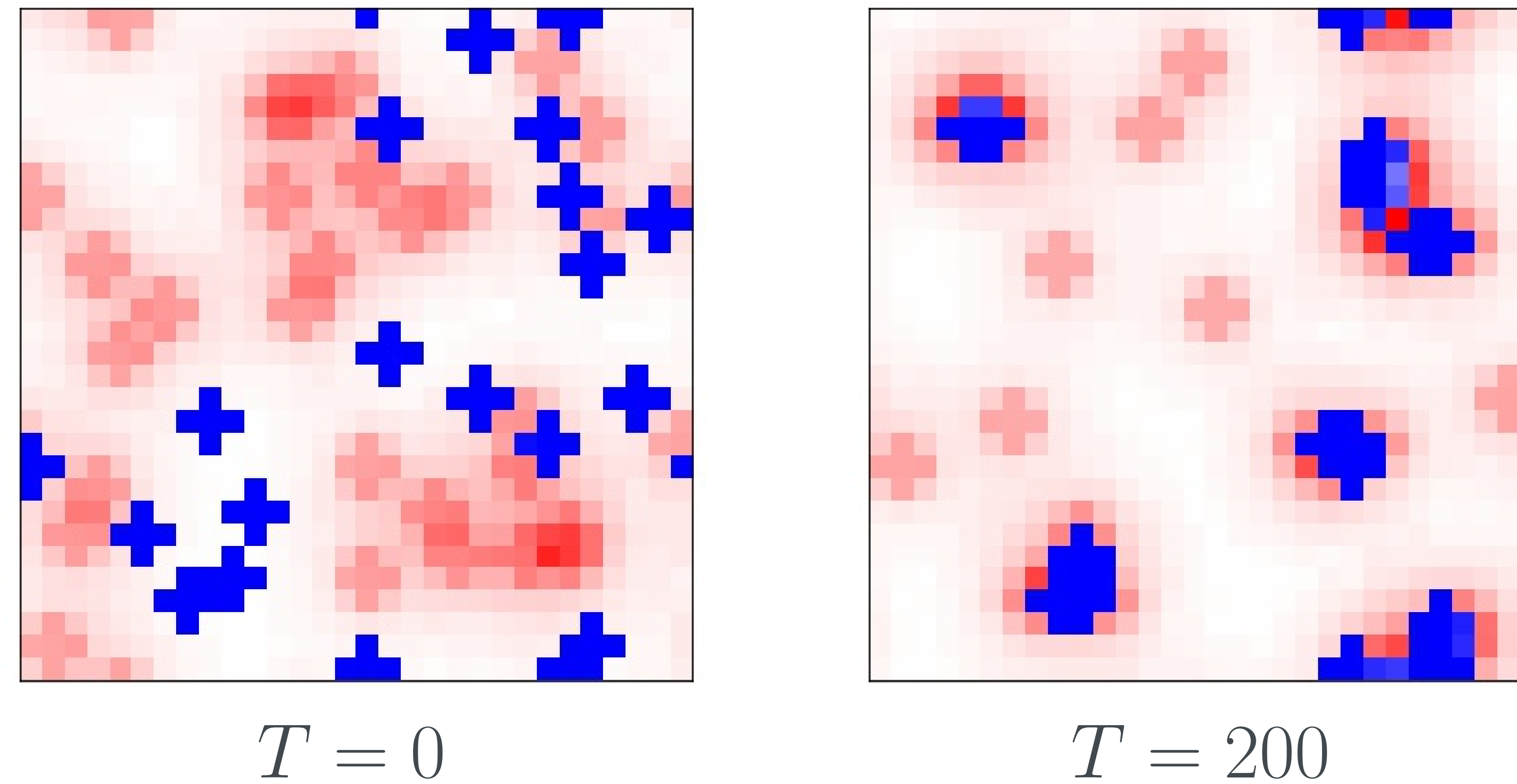
# The Role of Space, Density and Migration in Social Dilemmas

Jacques Bara<sup>1</sup>, Fernando Santos<sup>2</sup>, Paolo Turrini<sup>1</sup>

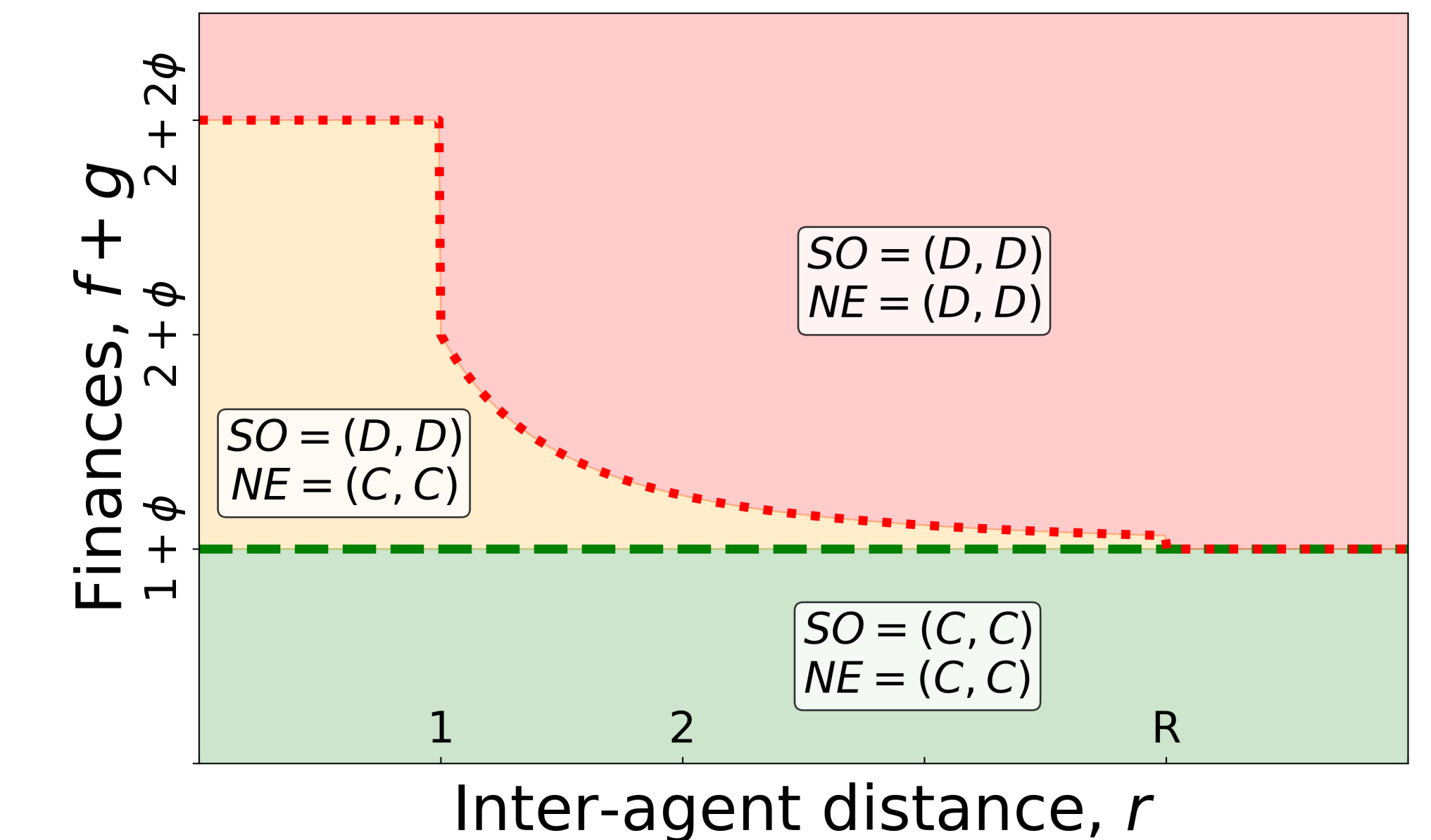
## Cooperate or Defect



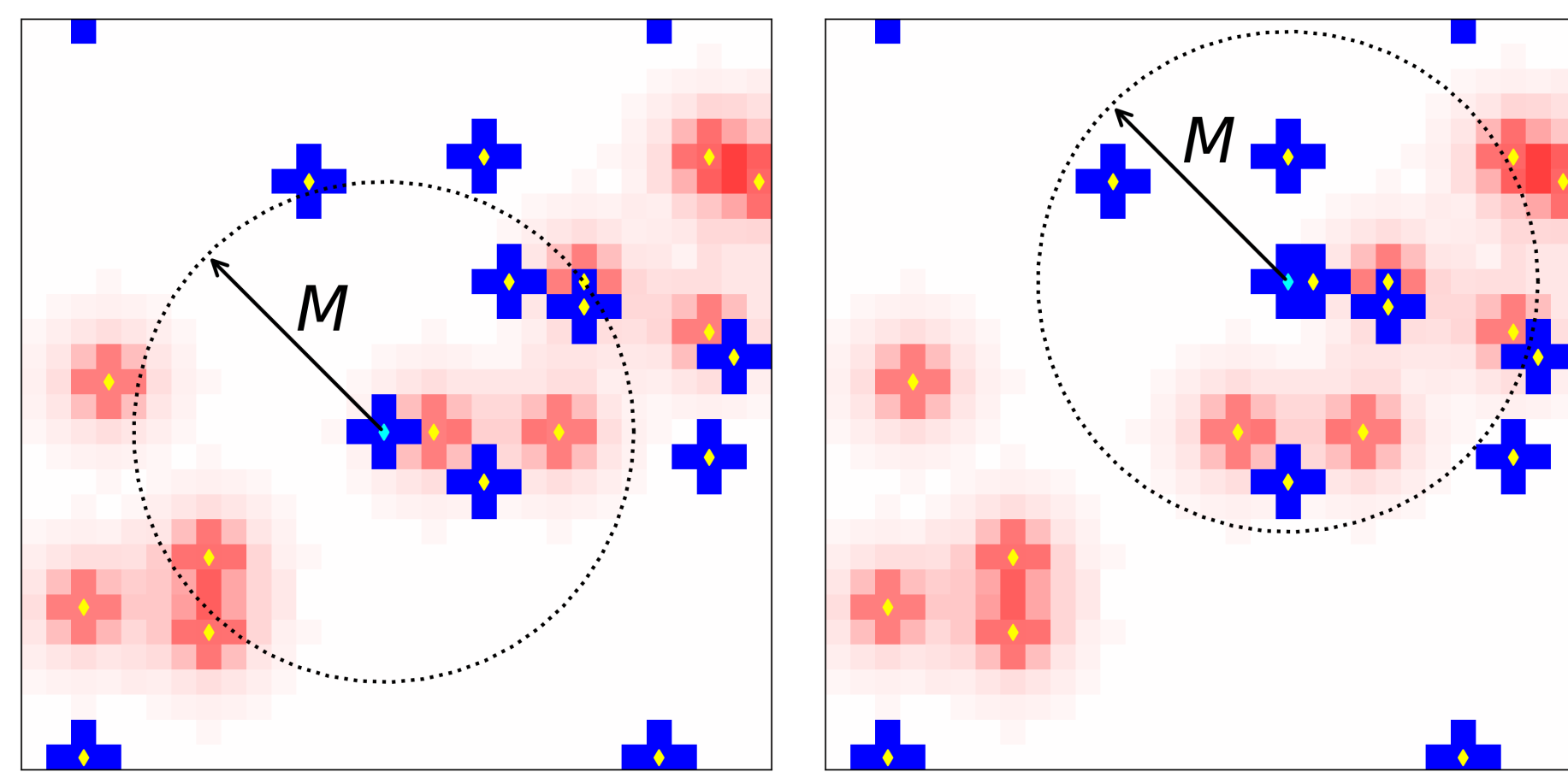
## Migration produces Clusters



## Two-Player Social Dilemma

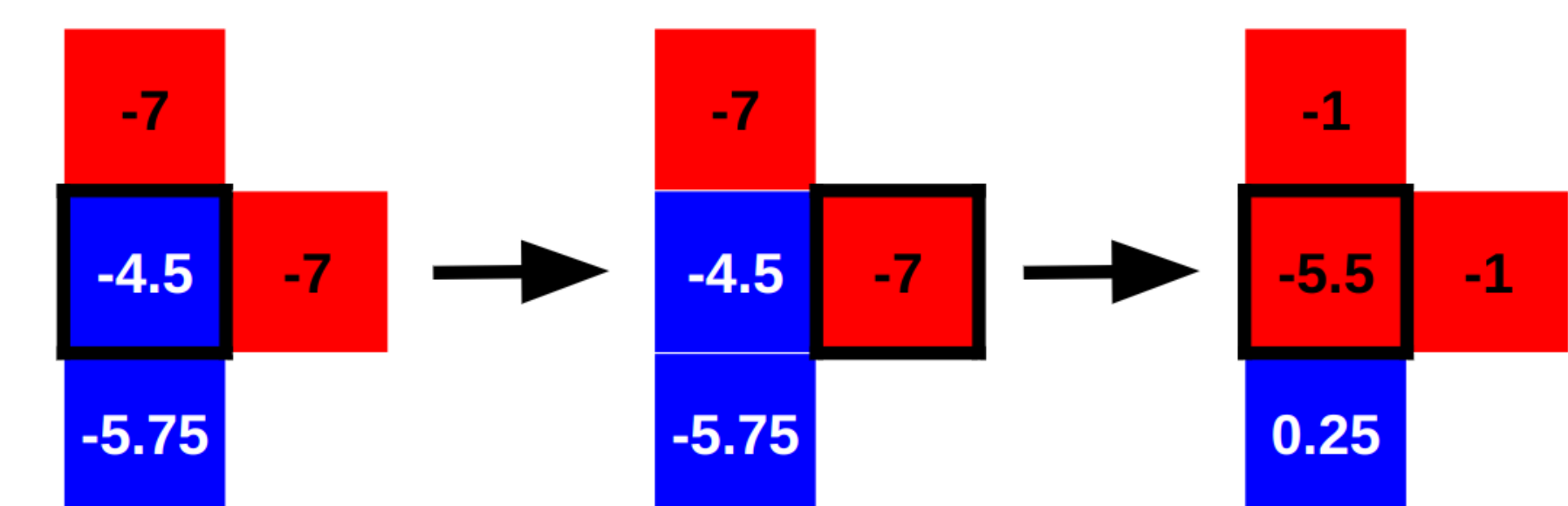


## Migrate to Minimise Pollution



Migrate to empty site in  $M$  with lowest pollution.

## Imitate to Minimise Expense

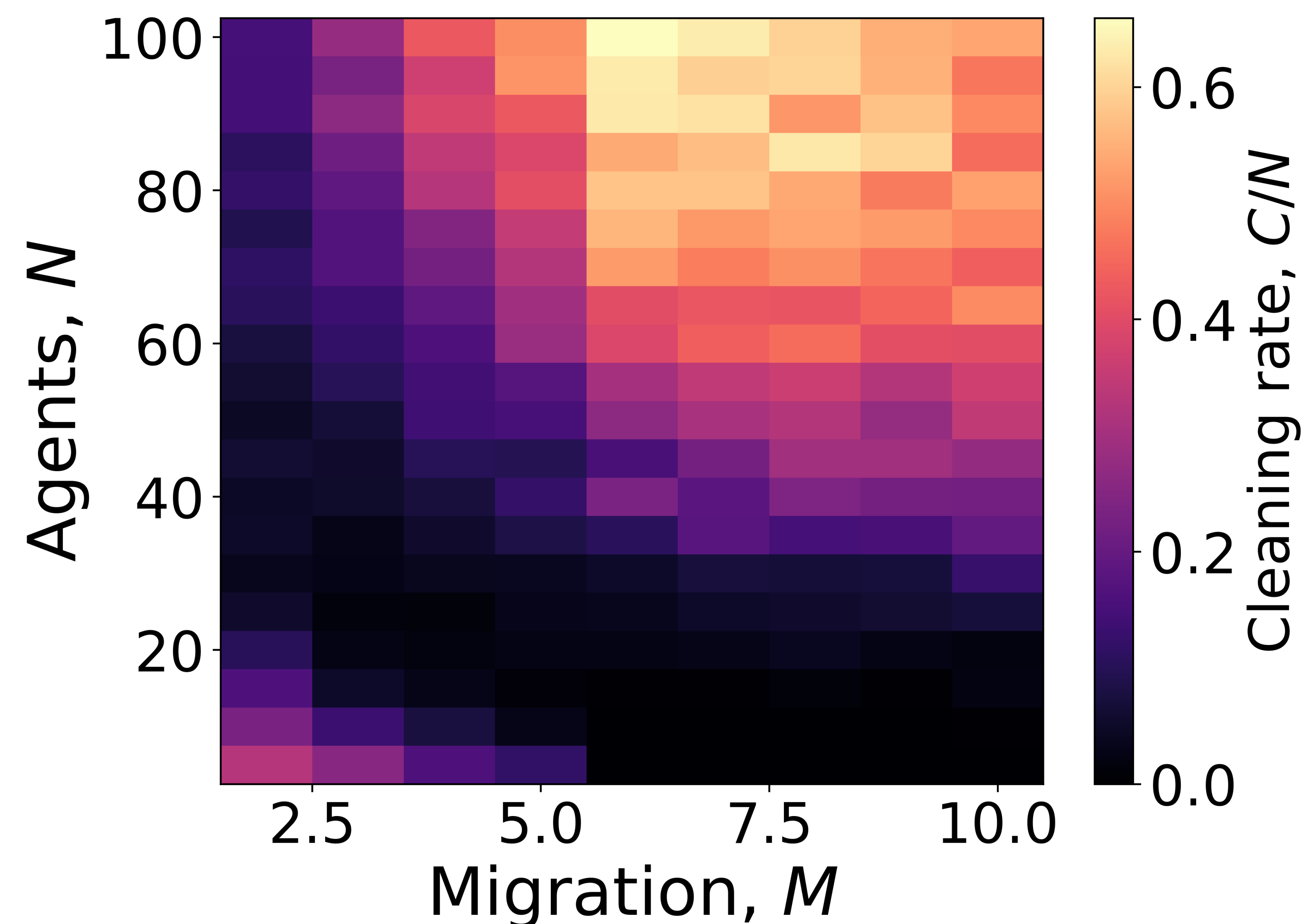


Imitate nearest neighbour with lowest expense.  
Mutate with probability 0.01.

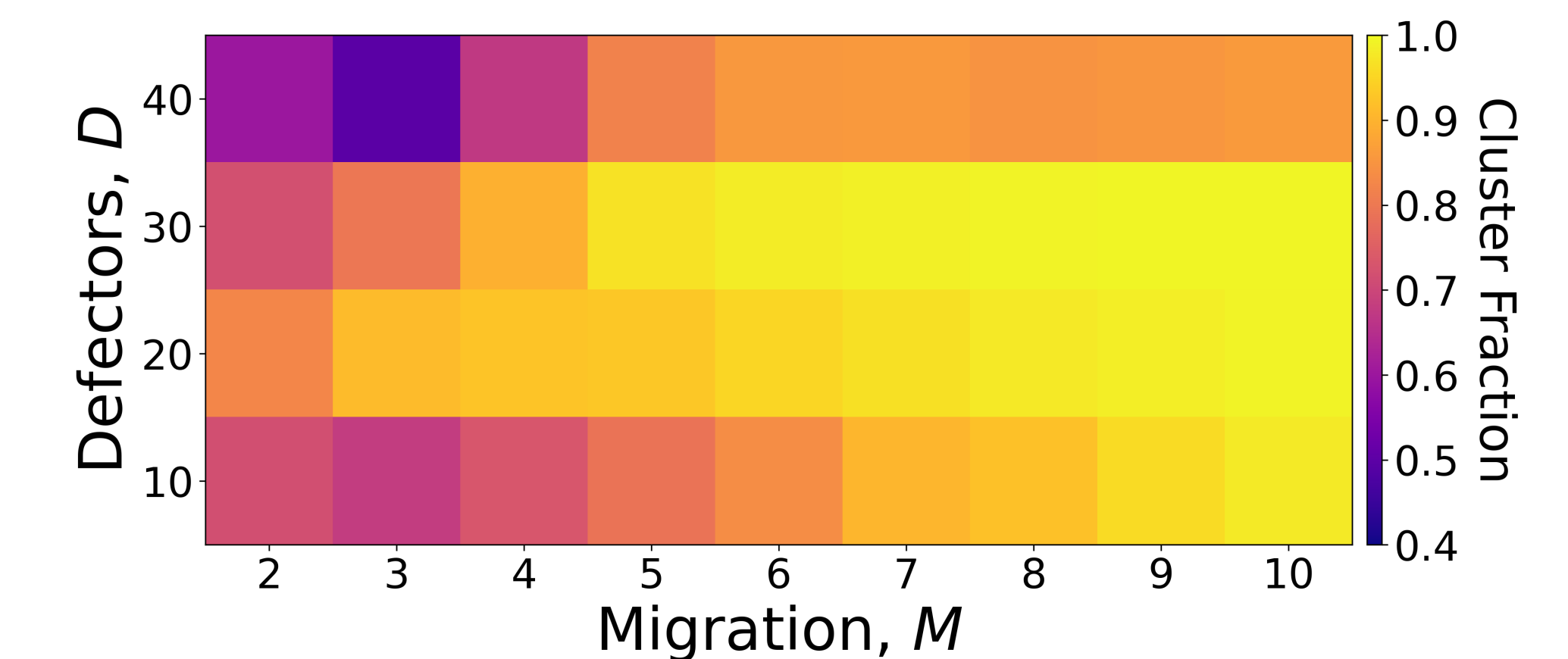
## Scan Me: Poster & Paper



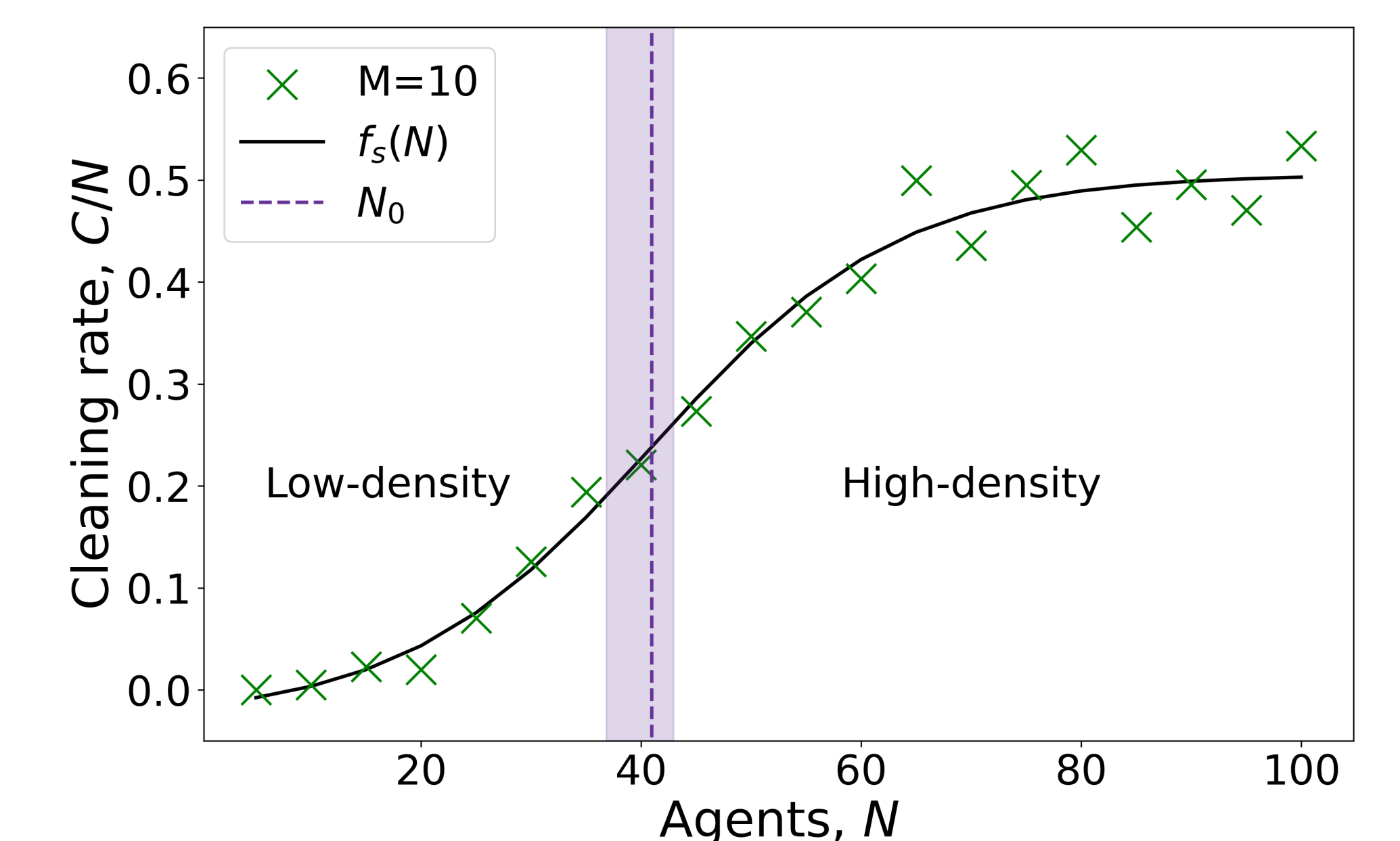
## Clusters promote Cooperation in Dense Cities



## Clusters under Fixed Strategies



## What is a "Dense City"?



## Acknowledgements

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