SHOULD PEOPLE HOLD A GRUDGE? WHAT IS THE OPTIMAL PLAY IN A WAR? SOUTH AND NORTH JOIN HANDS TO DEFEAT THE NIGHT KING?

GAME THEORY IS THE STUDY OF STRATEGY INTERACTIONS. THE PRISONERS DILEMMA IS A GAME USED TO UNDERSTAND THE EVOLUTION OF CO-OPERATIVE BEHAVIOUR.

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

	1	2	3	4	5	6
SneakyTitForTat	*C*	*C*	*D*	*D*	*C*	*C*
Grudger	*C*	*C*	*C*	*D*	*D*	*D*

```
import axelrod as axl

first_match = axl.Match([axl.TitForTat(),
                         axl.SneakyTitForTat()])
second_match = axl.Match([axl.Grudger(),
                          axl.SneakyTitForTat()])

play = first_match.play()
first_match.final_score()
(297, 297)

play = second_match.play()
second_match.final_score()
(295, 60)
```

Assume a colice of your is forgetful and Defcts againsts. SHould a person hold a grudge or should let their collide retailete? The Axelrod Python library allow you to create a match between a 'Sneaky' player and allow us to compare the results of two diffrent actions of ours.

MORE INFORMATION

- In case you missed me:
- Github: https://github.com/Axelrod-Python

ABOUT ME

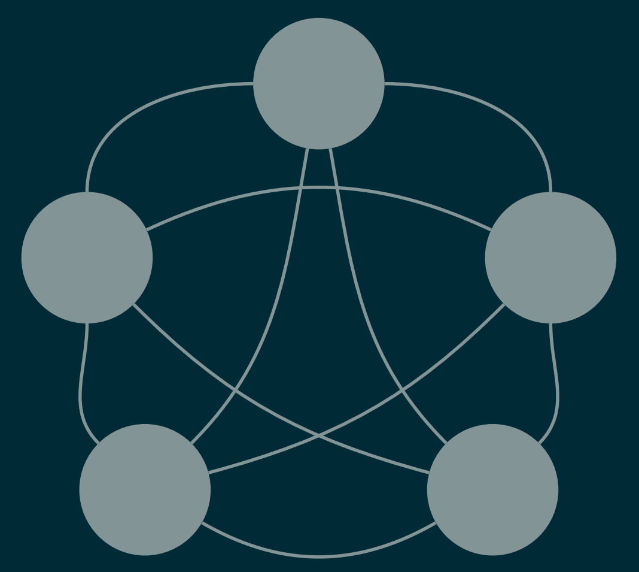
NikoletaGlyn

Nikoleta-v3

In a game of war several players collide. The players interact with the rest players and that's when a question rises:

'What is a player's optimal strategy?'

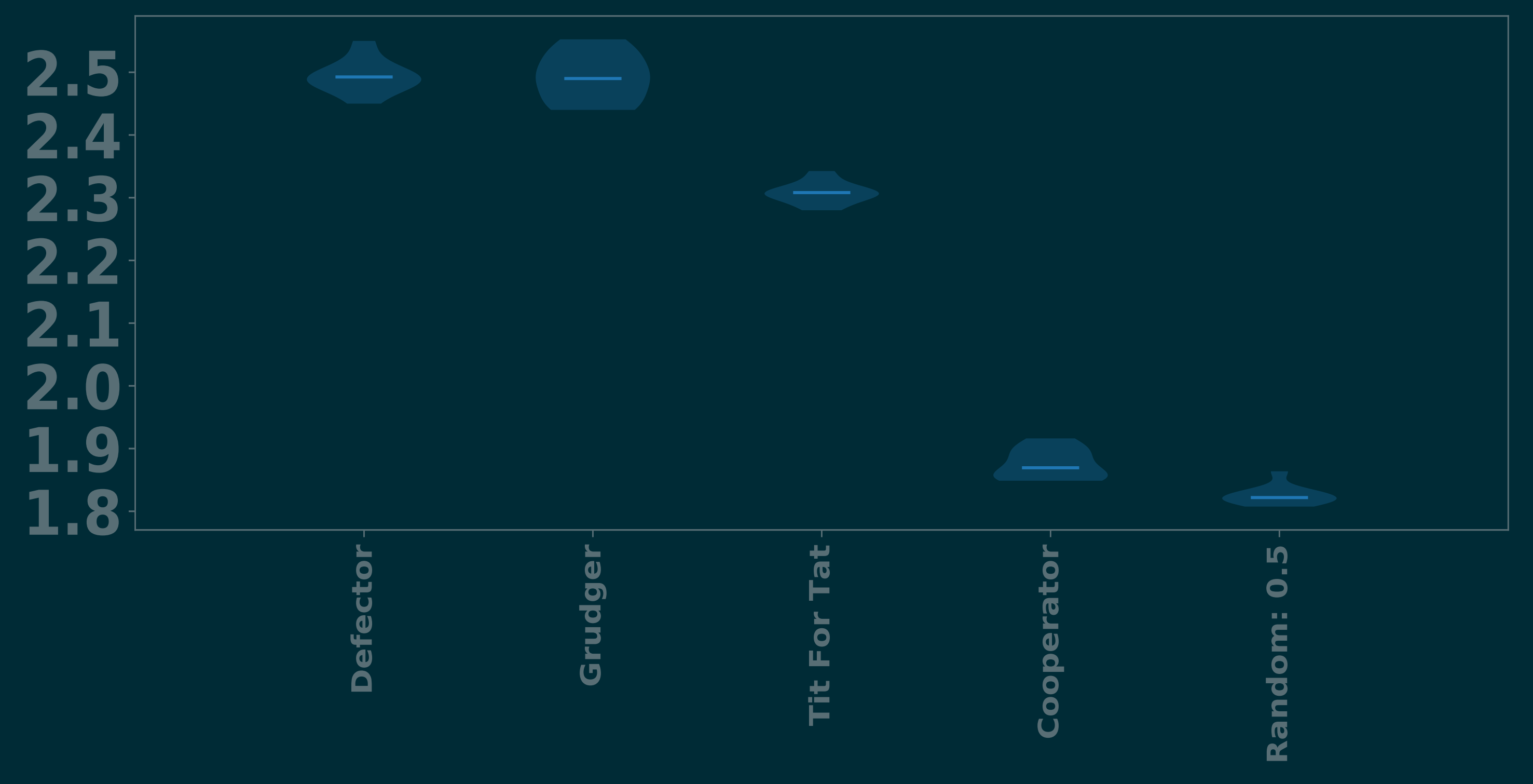
The Axelrod Python Library allows us to create different enviroments, tournaments, and choose from over 200 different strategic plays. This allow us to explore different possible war scenarios and winners.

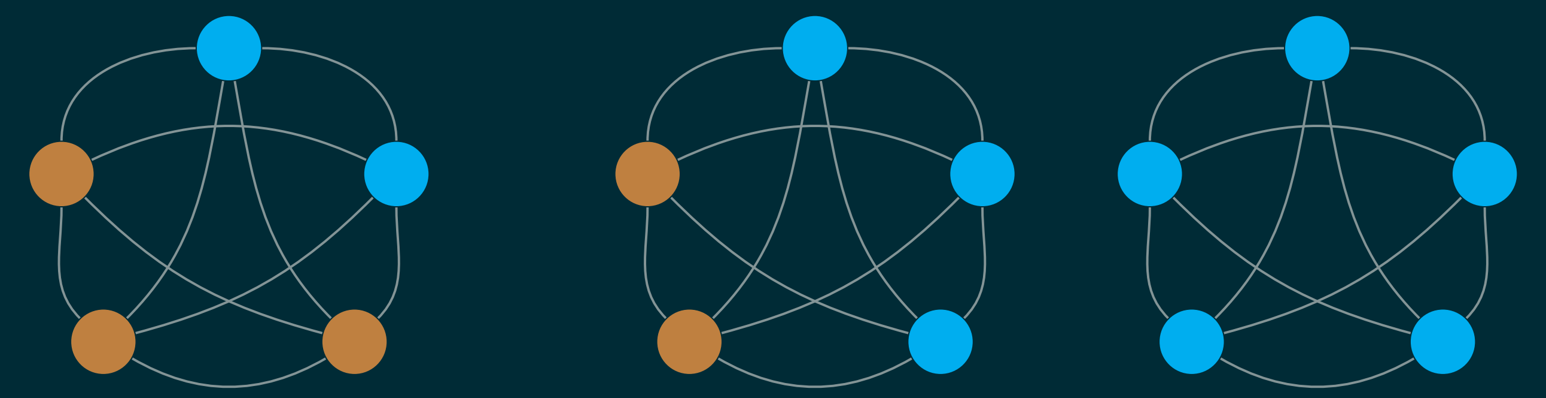


```
import axelrod as axl

axl.seed(0)
players = [axl.Cooperator(), axl.Defector(),
           axl.TitForTat(), axl.Grudger(),
           axl.Random()]
tournament = axl.Tournament(players)
results = tournament.play()
results.ranked_names
['Defector', 'Grudger', 'Tit For Tat',
 'Cooperator', 'Random: 0.5']

plot = axl.Plot(results)
p = plot.boxplot()
p.show()
```

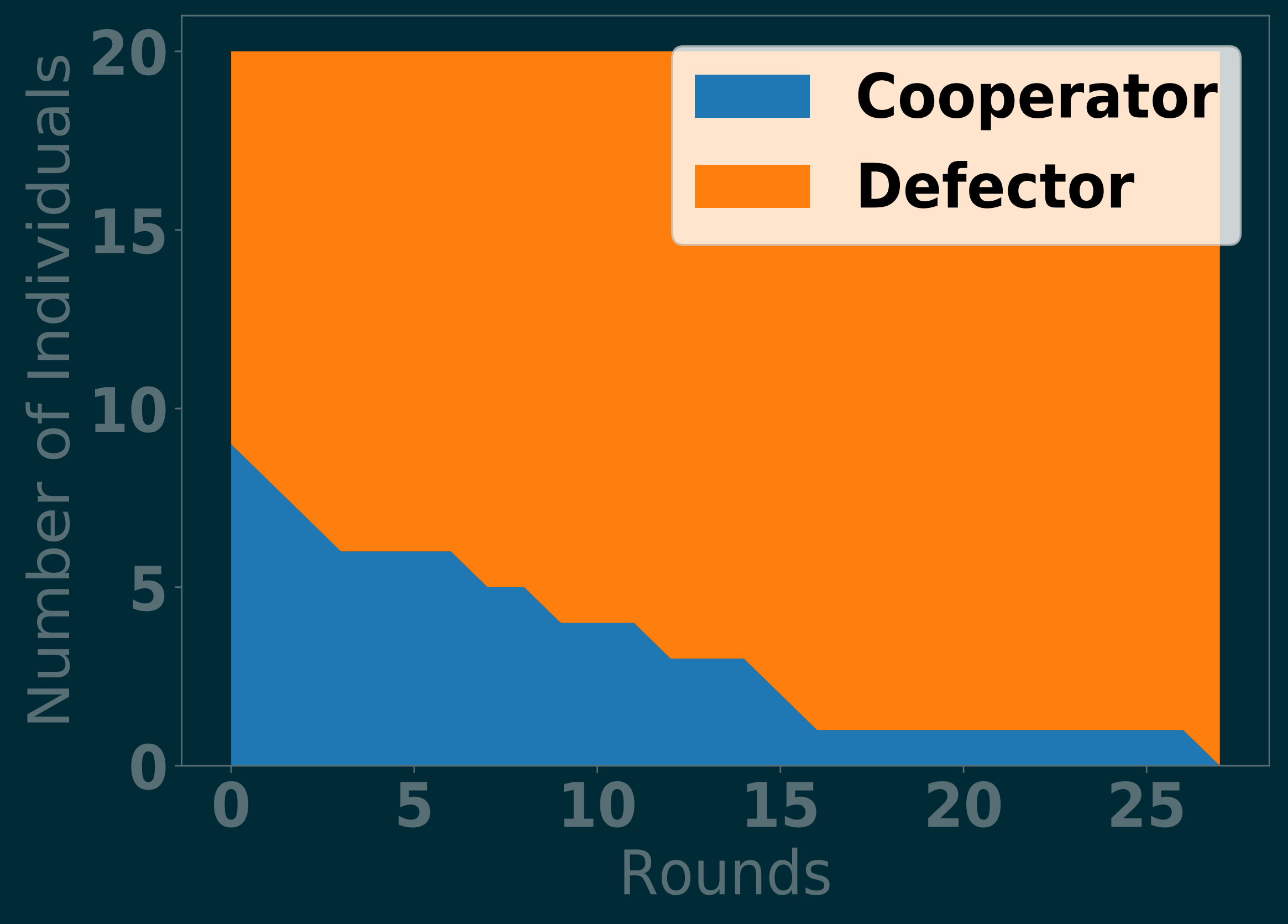




Following the recent events of Game of Thrones season 7 many have wondered as to if the South and the North should work together against the army of the dead. More speficically should our players cooperative or defect. Evolutionary Game Theory allow us to study the evolution of such populations.

```
N = 20
players = []
for _ in range(N):
    player = random.choice([axl.Defector, axl.Cooperator])
    players.append(player())

mp = axl.MoranProcess(players=players, turns=200)
mp.play()
[Counter({'Cooperator': 11, 'Defector': 9}),
 Counter({'Cooperator': 10, 'Defector': 10}),
          ......................
 Counter({'Cooperator': 1, 'Defector': 19}),
 Counter({'Defector': 20})]
```


Cooperator
Defector
Number of Individuals
Rounds