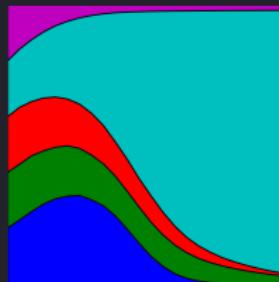


THE FALLACY OF MERITOCRACY

PyCon Balkan

@NikoletaGlyn





MERITOCRACY [mer-i-tok-ruh-see]

[noun]

1. government or the holding of power by people selected according to merit.



www.newyorker.com/tech/annals-of-technology/maryam-mirzakhani-s-pioneering-mathematical-legacy



en.wikipedia.org/wiki/List_of_black_Academy_Award_winners_and_nominees
www.eonline.com/news/836150/

EQUALITY VS EQUITY

EQUALITY

[ih-kwol-i-tee]

[noun]

1. the state of being equal, especially in status, or opportunities.

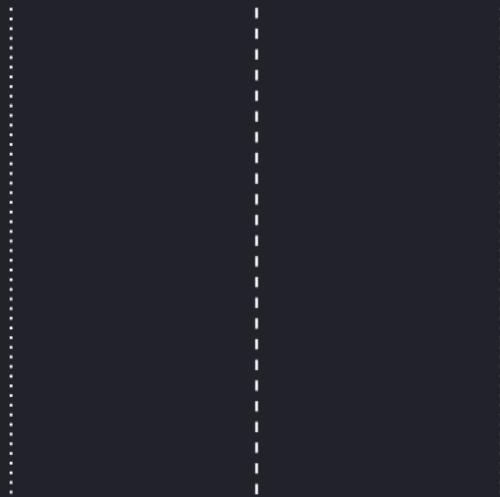
EQUITY

[ek-wi-tee]

[noun]

1. the quality of being fair and impartial.

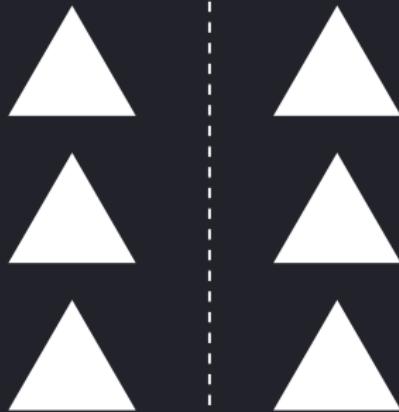
FINISH LINE



START LINE



FINISH LINE



START LINE



BIAS [bahy-uhs]
[noun]
1. a particular tendency, trend, inclination, feeling, or opinion, especially one that is preconceived or unreasoned.

TYPES OF UNCONSCIOUS BIAS

AFFINITY BIAS

HALO EFFECT

HORNS EFFECT

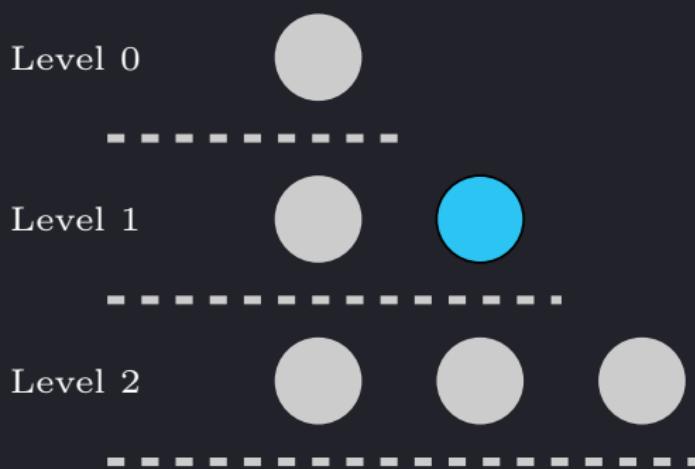
ATTRIBUTION BIAS

CONFORMITY BIAS

The effect of unconscious bias in hierarchical systems

HIERARCHICAL SYSTEM







Level 0



Level 1



Level 2



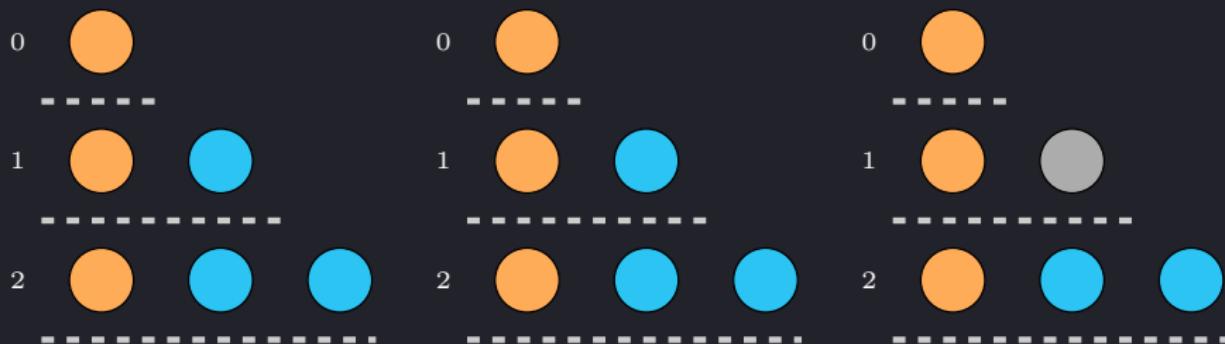
```
>>> import hierarchical as hrcy
>>> import numpy as np
>>> import scipy.stats

>>> competence_distribution = scipy.stats.uniform(0, 1)
>>> retirement_rate = 0.2
>>> capacities = [3, 2, 1]

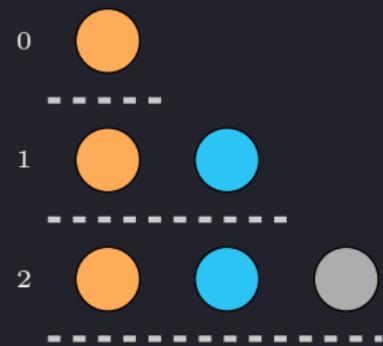
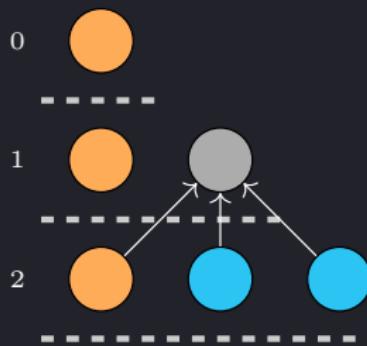
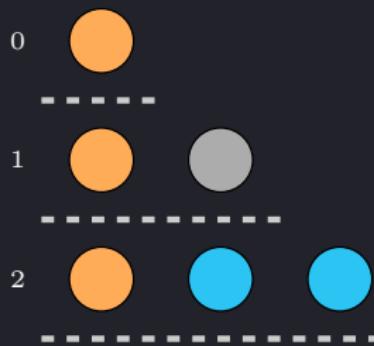
>>> np.random.seed(0)
>>> states = list(hrcy.states.get_competence_states(
...     capacities, competence_distribution, retirement_rate)
... )

>>> for level_index, level in enumerate(states[6]):
...     print(f"Level {level_index}")
...     for individual in level:
...         print(
...             f"""-|type {individual.individual_type} with
...             competence {individual.competence:.3f} retirement {individual.retirement_date:.3f}"""
...         )
Level 0
-|type 0 with
    competence 0.438 retirement 0.445
-|type 1 with
    competence 0.964 retirement 0.097
-|type 1 with
    competence 0.792 retirement 0.151
Level 1
-|type 0 with
    competence 0.360 retirement 0.115
-|type 1 with
    competence 0.698 retirement 0.012
Level 2
-|type 0 with
    competence 0.209 retirement 0.035
```

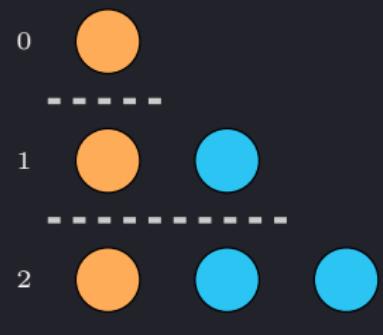
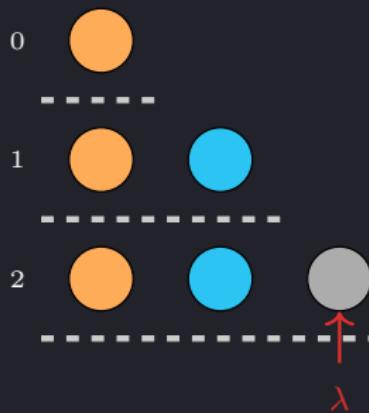
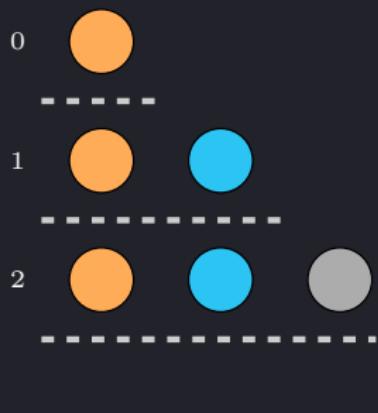
RETIREMENT



PROMOTION



HIRING

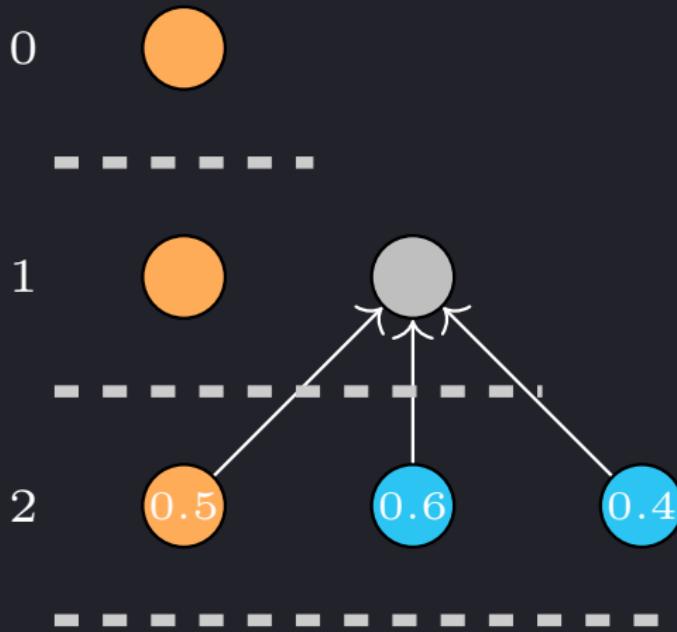


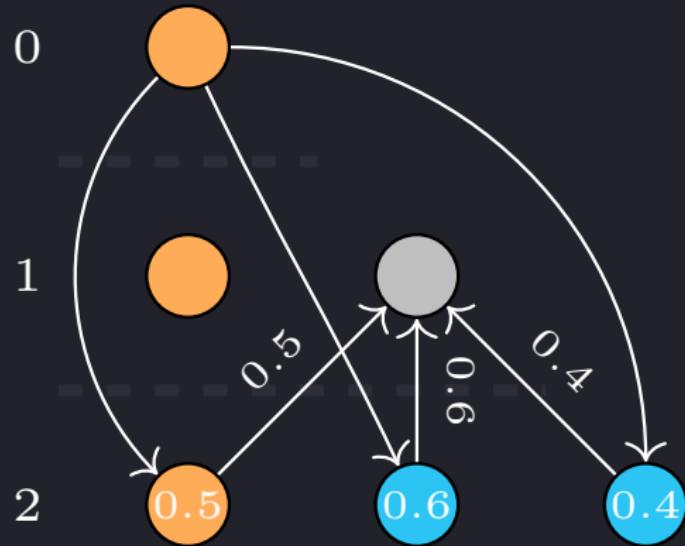
RETIREMENT

HIRING

PROMOTION

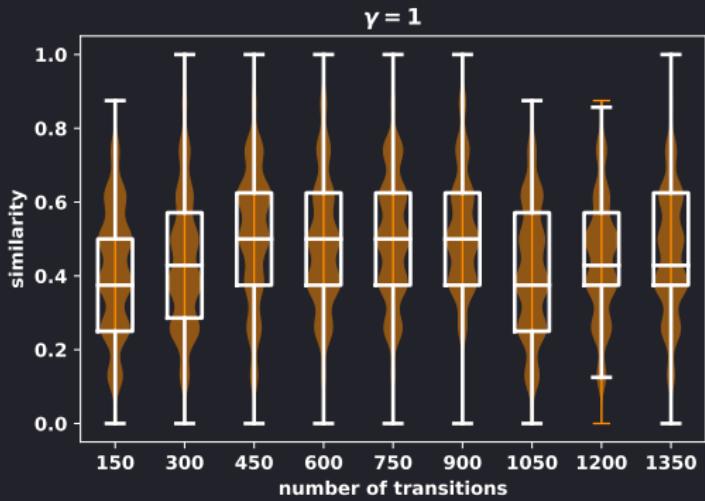






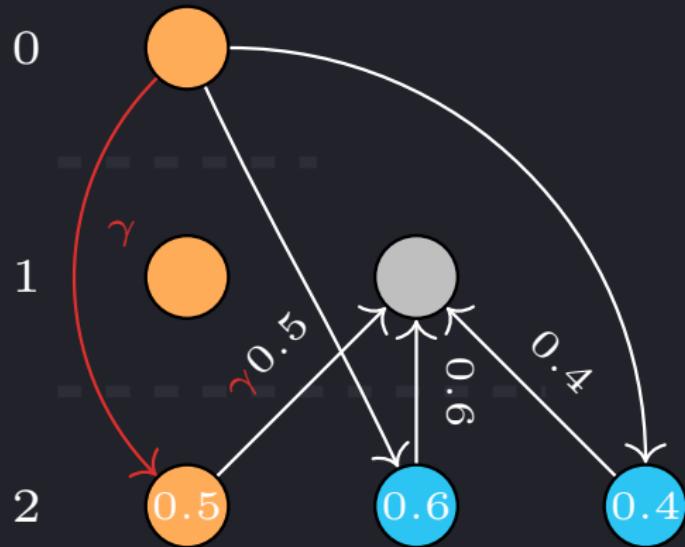
```
>>> capacities = [9, 6, 2, 1]

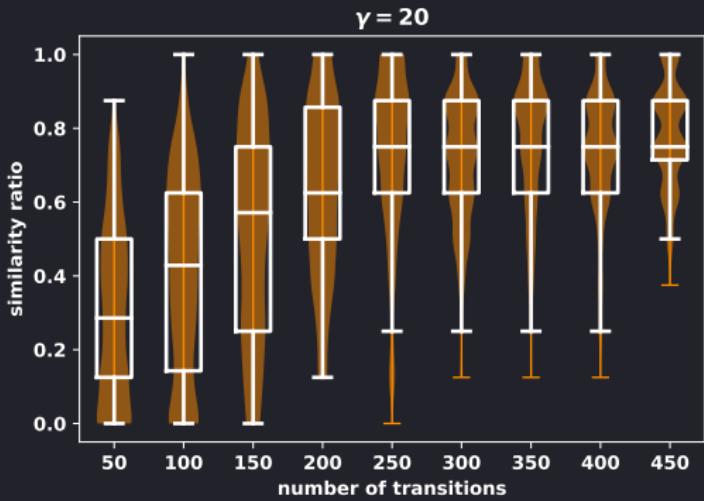
>>> competence_distribution = scipy.stats.uniform(0, 1)
>>> retirement_rate = 0.2
>>> lmbda = [10, 10]
```



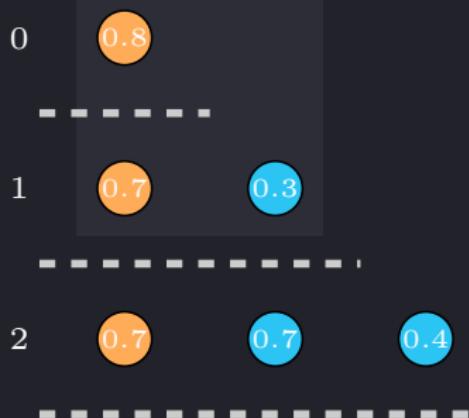
UNCONSCIOUS **BIAS**

AFFINITY BIAS

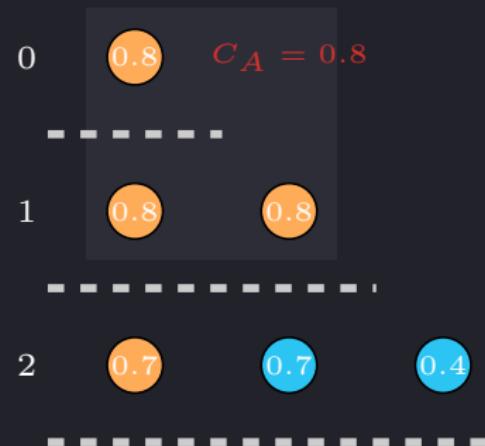




MERITOCRACY



AFFINITY



MERITOCRACY

0 0.8 $C_M = 0.6$

1 0.7 0.3

2 0.7 0.7 0.4

AFFINITY

0 0.8

1 0.8 0.8

2 0.7 0.7 0.4

MERITOCRACY

0 0.8 $C_M = 0.6$

1 0.7 0.3

2 0.7 0.7 0.4

AFFINITY

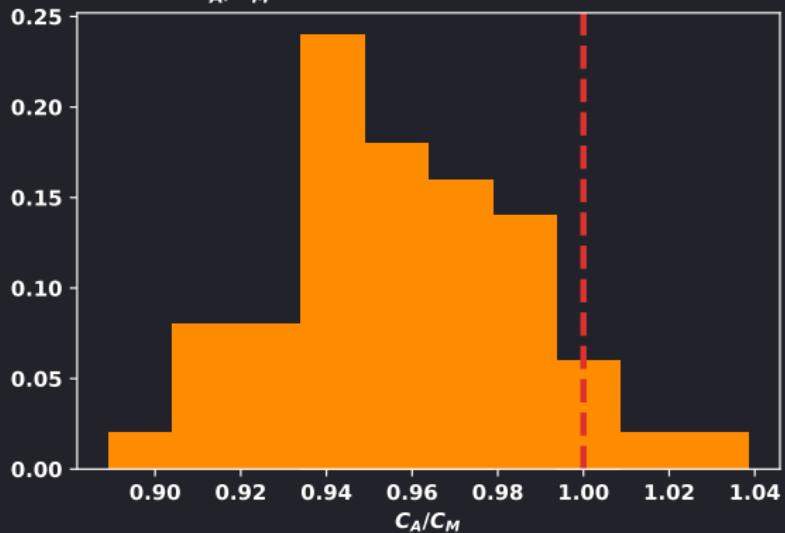
0 0.8 $C_A = 0.8$

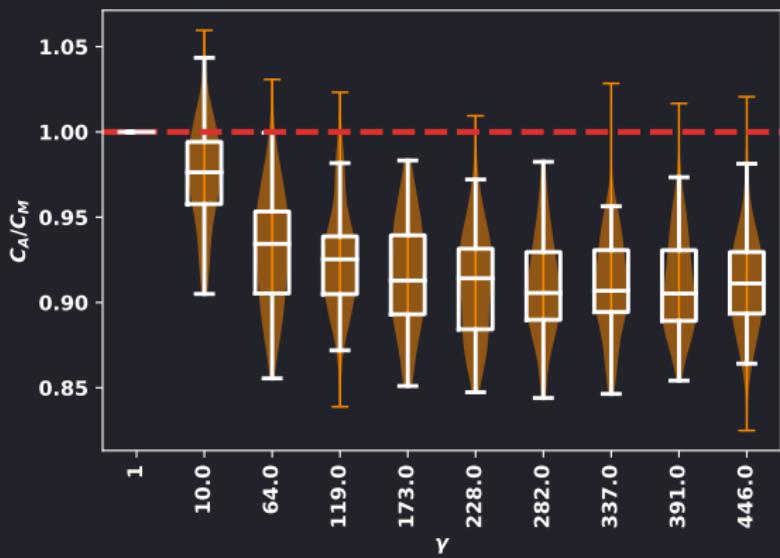
1 0.8 0.8

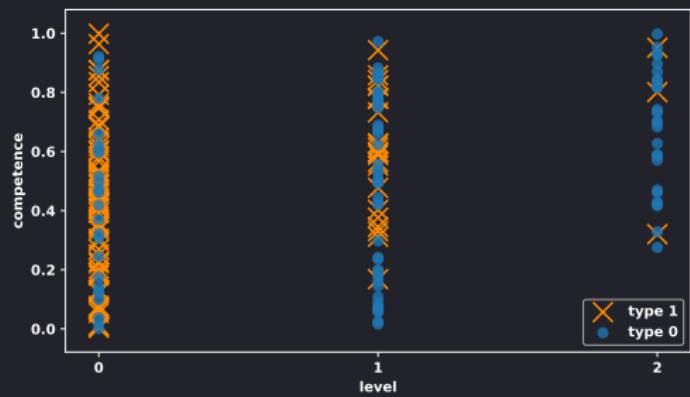
2 0.7 0.7 0.4

How much worse is the system because of
affinity bias?

C_A/C_M over 50 different scenarios







ANSWERS?

BE AWARE OF YOUR
UNCONSCIOUS BIAS

BE AN ALLY

DO NOT BE LAZY

@NikoletaGlyn
@drvinceknight

- [vknight.org/unpeudemath/math/2017/11/10/
the-fallacy-of-meritocracy.html](http://vknight.org/unpeudemath/math/2017/11/10/the-fallacy-of-meritocracy.html)
- github.com/drvinceknight/HierarchicalPromotion