



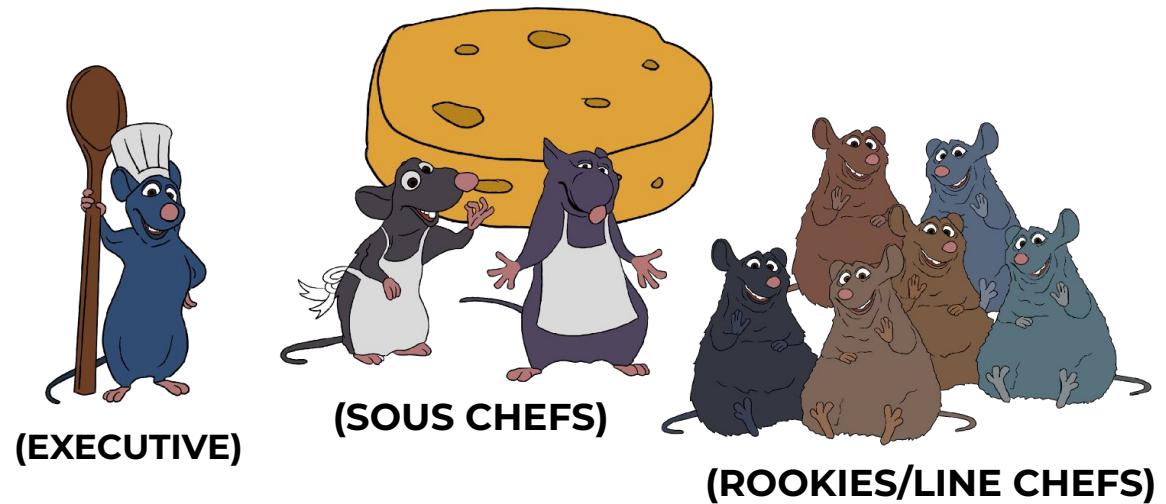
FAIRNESS & FRIENDS

(Falaah Arif Khan, Eleni Manis, and Julia Stoyanovich)

What is 'Fairness'?



'Fair' Resource Allocation



Is it **Equality in the Distribution**
of some commodity/outcome?
(in the economic sense)



Is it some notion of **Distributive Justice**?
(from political philosophy)



Is it Non-Discrimination?

(from legal doctrines)



Which ‘Fairness’ metric is suitable for our particular context?

Is it **Equality in the Distribution** of some commodity/outcome?
(in the economic sense)

Is it some notion of **Distributive Justice**?
(from political philosophy)

Is it **Non-Discrimination**?
(from legal doctrines)

Maybe we can get some guidance from political philosophy!



Meet EO (Equality of Opportunity)!

- Eliminates irrelevant, arbitrary barriers to achievement
- Irrelevant personal characteristics don't help or hurt access to desirable positions, outcomes



🎵 Your daddy is rich...
and your mama's good looking 🎵
...but that won't help you
in an EO world



EO as individual fairness



Individual fairness:

- Similar treatment of similar individuals
- Only irrelevant characteristics separate similar people

EO:

- Irrelevant characteristics don't lead to different treatment of similar people

EO as group fairness



Statistical fairness:

- ID protected groups
- Membership irrelevant to correct or positive classification

EO:

- Irrelevant characteristics also don't affect outcomes

Equality of Opportunity principles:

1. Fair contests

Formal EO / “Careers open to talents”

2. Fair life chances

(Equality in developmental opportunities)

Fair EO / “Equally talented people should have the same prospects of success”

It's the....

Age of Equality Of Opportunity! (EO)



Age of EO!



Formal EO



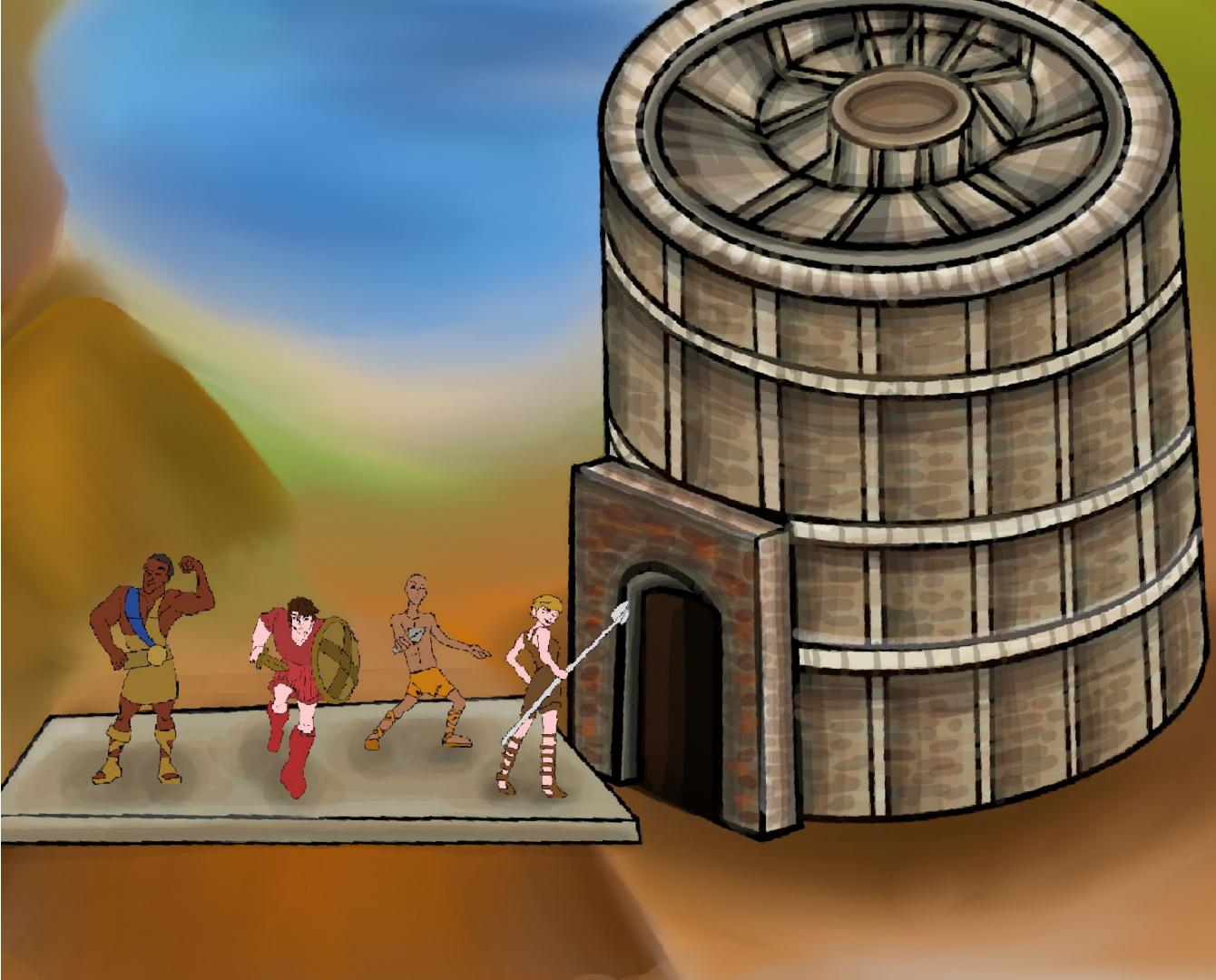
Formal EO

Careers
open to
talents

- In any contest, applicants should only be judged by ‘job-relevant’ qualifications
- “See nothing irrelevant, speak nothing irrelevant, hear nothing irrelevant”
- Codified as “fairness through blindness,” with its known weaknesses

Formal EO

The theatre of formal EOP is open to all talents. You fight with what you have - no special treatment once you're in.



Fairness through Blindness

- Some characteristics can be excluded
- “Ban the box”: blindness to criminal history during resume screening
- Blindness to credit history



Formal+ EO

A test that systematically under/overestimates people in a way that tracks group membership violates formal EO

Measures of accuracy or test validity broken out by demographic group



Credit to Joseph Fishkin

Age of EO!



Formal EO

- Fairness through blindness and measures of test accuracy & validity broken out by group
- But formal EO doesn't satisfy ALL fairness cravings

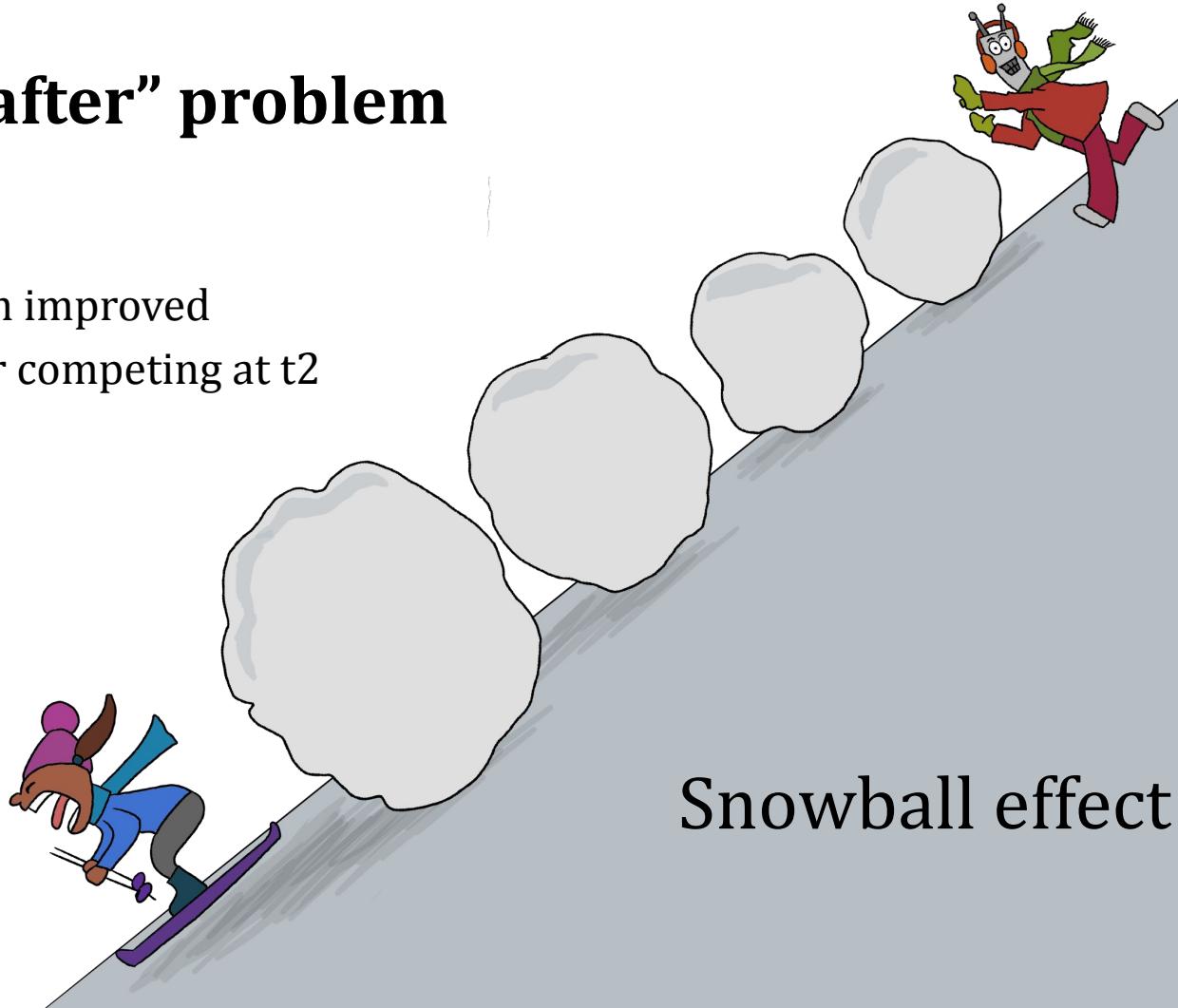
Formal EO's “before” problem

- Formal EO's appeal: relevant skills in, irrelevant stuff out
- But OK to use irrelevant privileges before competition
- So privileges affect competition outcomes



Formal EO's “after” problem

- Winners at t1 gain improved characteristics for competing at t2
- Losers lose faster



Snowball effect

Before + after problems → discrimination laundering

- Real world discrimination→ privileges
- OK to convert privileges to qualifications
- Winning on the basis of qualifications leads to more winning on qualifications
- Discrimination recedes from view...

“Racial discrimination in on-the-job training is illegal; discrimination on the basis of differences in human capital due to differences in on-the-job training is not”

(Elizabeth Anderson, *The Imperative of Integration*)



Questions?



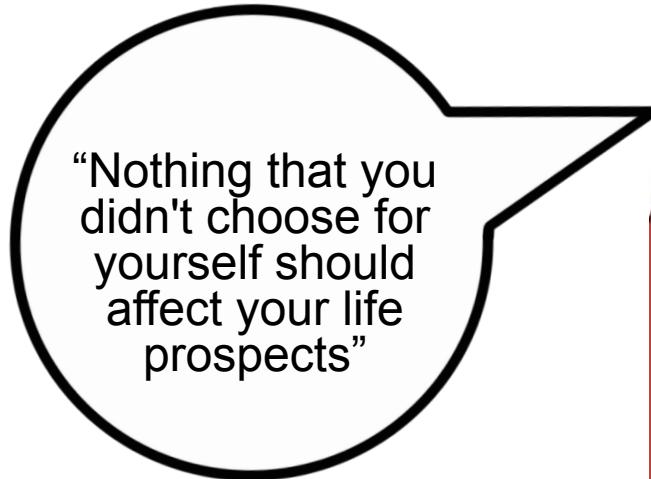
Age of EO!



Substantive:
Luck-Egalitarian

Substantive EO: Luck Egalitarian

- Outcomes should only be affected by ‘choice luck’ (one’s responsible choices), not ‘brute luck’
- How do we make this separation?



Substantive EO: Luck Egalitarian



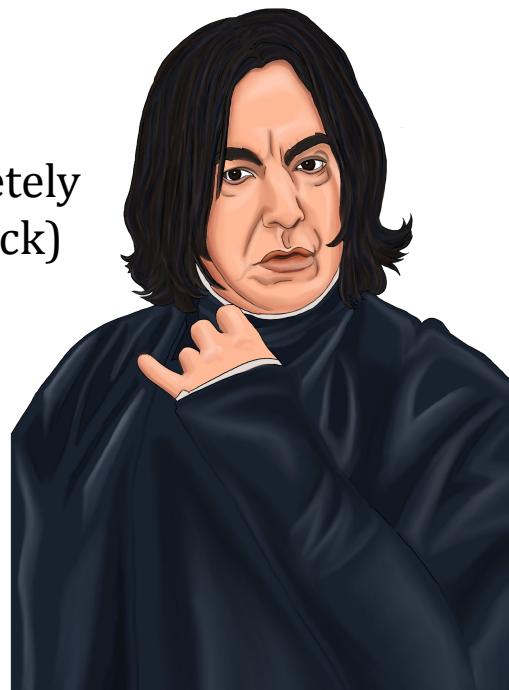
The Luck Egalitarians gather
around the communal fire -
forsaking all disparities in talent
and effort, in favor of unicorns
on rainbows!

Brute luck vs. Choice luck



Which characteristics can we hold one accountable for? (Responsible choices)

And which matters are completely out of their control? (Brute luck)



Substantive EO without effort/circumstances split

- Effort and circumstances can't be disentangled
- That's OK: circus families→circus kids
- Not OK: privileged family→access to wide range of desirable positions



Substantive EO without effort/circumstances split

- Why not attend only to responsible effort?
- To avoid putting fairness and good decision-making at odds
- Good hiring decisions depend on considering all of a person's skill



Substantive EO: Roemer

- No split between responsible effort and irrelevant circumstances
- Rank people in the effort distribution of their “type”
- But how do we compare the best apples to the best oranges?



Age of EO!

Substantive:
Rawlsian



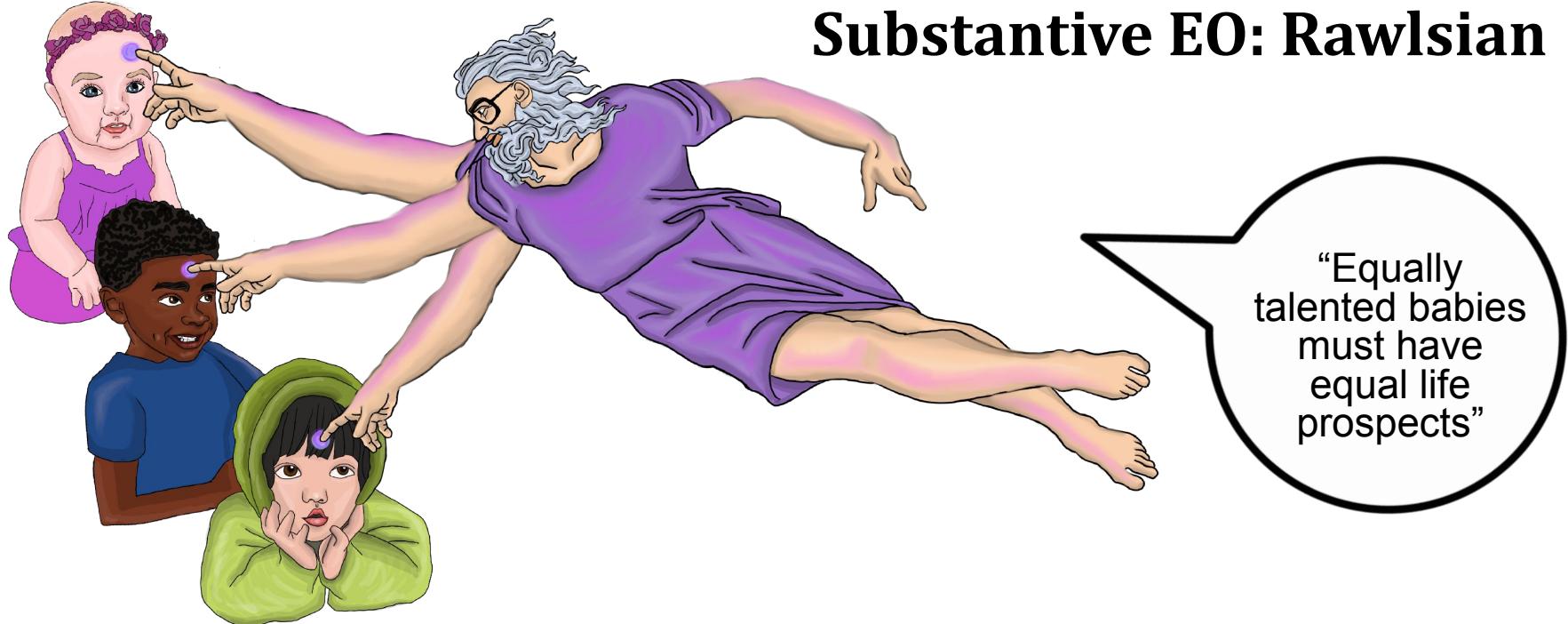


Original Position-
“Veil of Ignorance”

Natural Lottery-
Arbitrary distribution of
talents and fortune



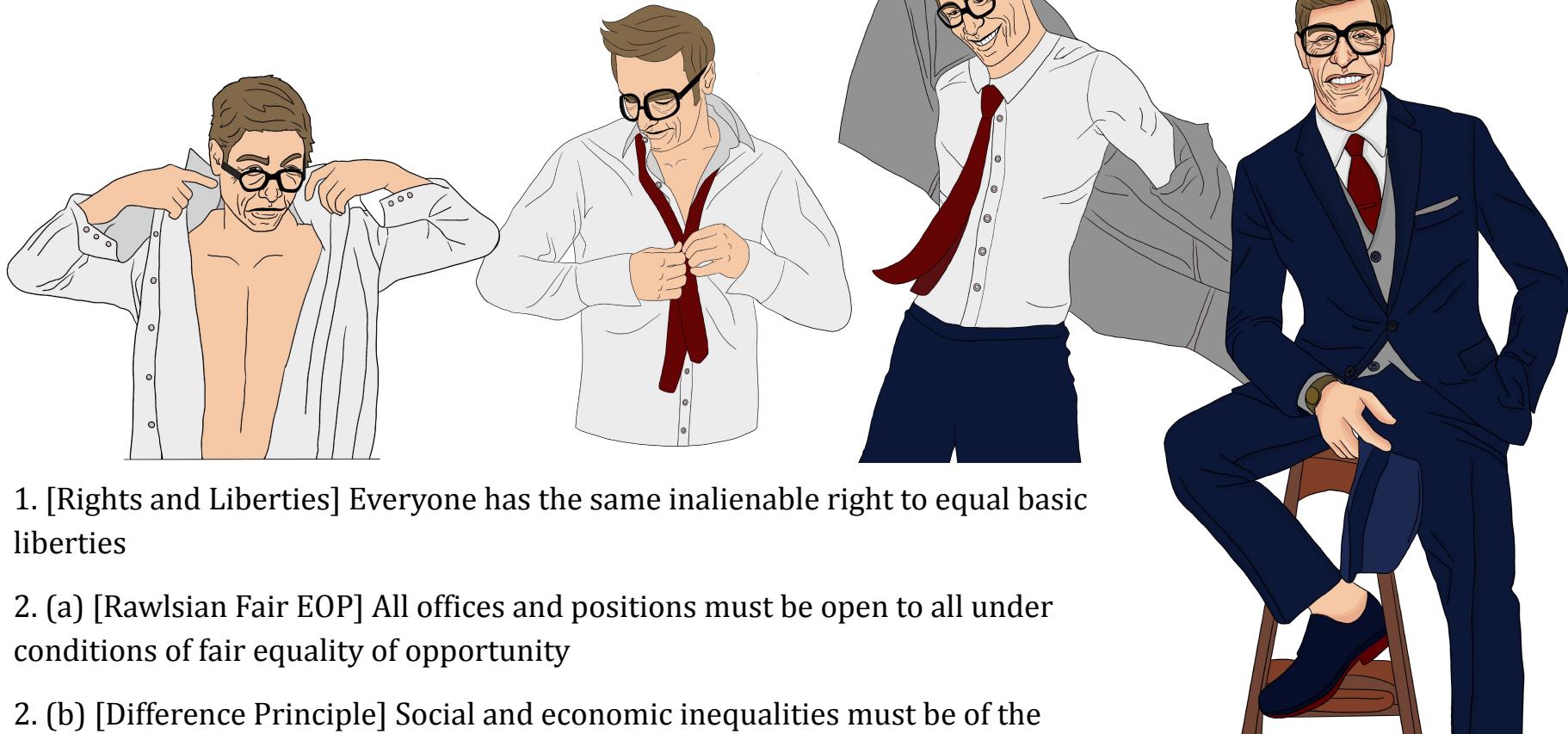
Substantive EO: Rawlsian



- All people - rich or poor - must have the same opportunities to develop their qualifications, so that at the point of competition they are equally likely to succeed
- Difference principle (maximin) redistributes inequalities to undo the effect of the social and talent lottery

Rawls (1971)

Broader view of justice



1. [Rights and Liberties] Everyone has the same inalienable right to equal basic liberties

2. (a) [Rawlsian Fair EOP] All offices and positions must be open to all under conditions of fair equality of opportunity

2. (b) [Difference Principle] Social and economic inequalities must be of the greatest benefit to the least advantaged

Rawls (1971)

Substantive EO: Rawlsian



The bouncy castle of social security
has strategically placed trampolines
to propel individuals toward the
opportunities they seek

Substantive EO: Rawlsian



Rawlsian EOP is fundamentally concerned with providing “fair contests” and “fair life chances”

Starting gate interpretation of Rawls – a “fair contest” will evaluate people’s qualifications in a counterfactually “fair” world.

Can further apply maximin principle to provide “fair life chances”

Fair-ML formulations of Rawls’s Fair EOP are statistical parity and equality of odds.

BUT, these measures distort Rawlsian EOP! At the point where an algorithm is making a decision it is already too late to provide people with equality in developmental opportunities!

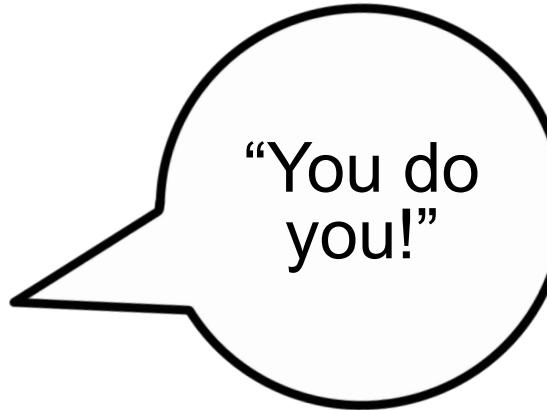


Age of EO!

Libertarian



Libertarian



- Emphasis is on people's rights and liberties
- The libertarian will object to any 'ill-gotten gains' - no cheating or defrauding allowed



Libertarian

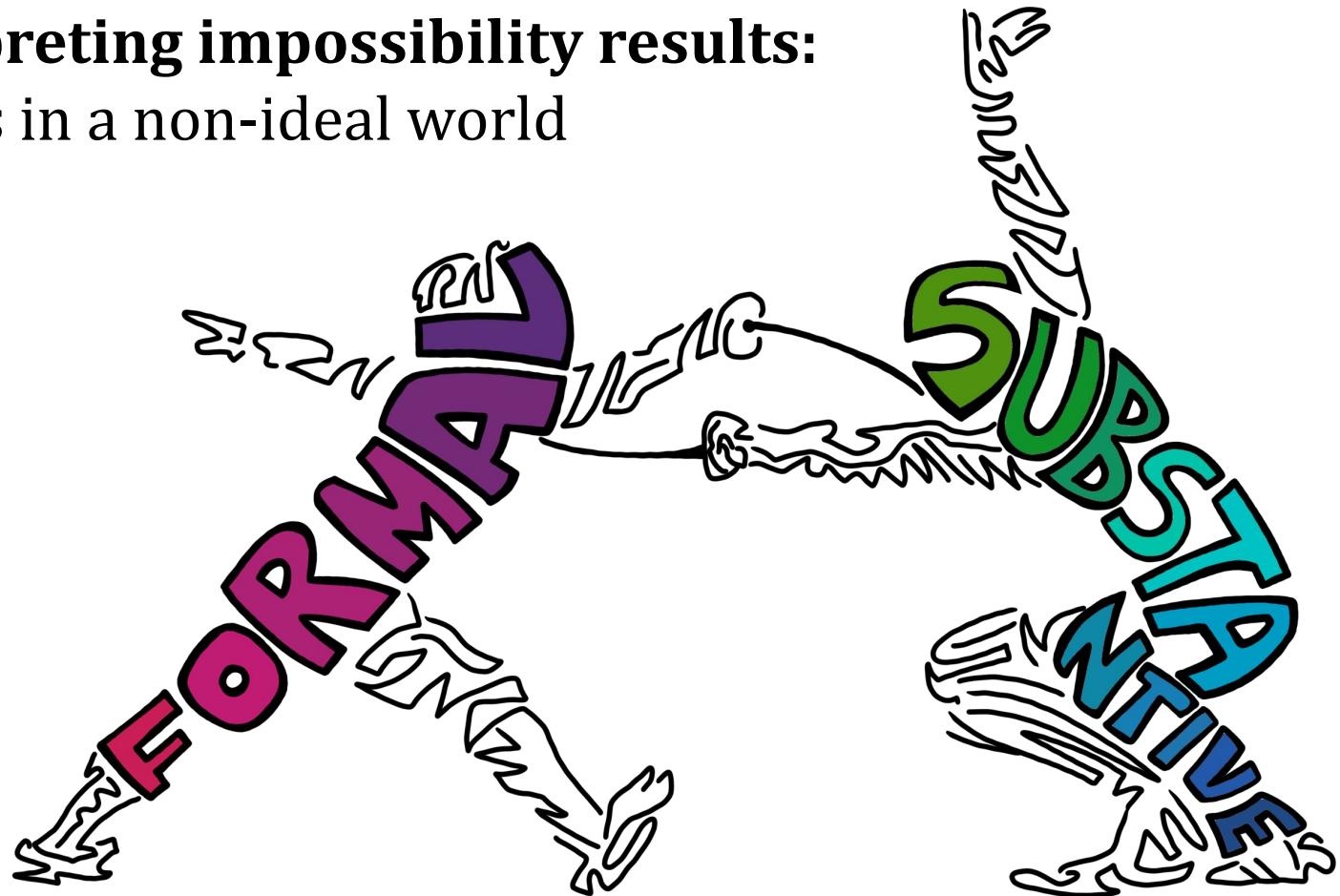
Any holding acquired without cheating, is claimed 'fairly', even if some end up with significantly more than others

Inequality is due to exercise of free will – not a form of EO at all!

Moral desiderata of different EO doctrines:

Doctrine	Objects to/ Corrects for	Moral Desiderata
Formal	Irrelevant characteristics as the basis for desirable positions	Measure relevant qualifications – fairness through blindness
Formal+	Test performance tracking irrelevant characteristics	Parity in test performance across groups.
Luck Egalitarian	Effects of brute luck	Mitigate effects of brute luck, only measure choice luck
Roemer	Effect of circumstances on effort	Rank people according to position in their effort-circumstance distribution
Rawls	Social lottery and natural lottery	Measure natural talents in a counterfactually fair world Redistribute inequalities to the benefit of the worst-off group

Re-interpreting impossibility results: Trade-offs in a non-ideal world



Fair Footraces



When: qualifications are not affected by circumstances of birth

Blind Auditions



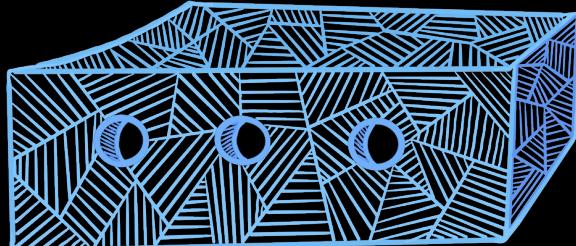
When: judges might be swayed by irrelevant traits like appearance

Hiring



“Fair contest” and “fair life prospects”

Limitations in guidance - pure procedural justice



The fairness that you asked for is inside this box!

Questions?

