Algorithms and Distribution

CS221
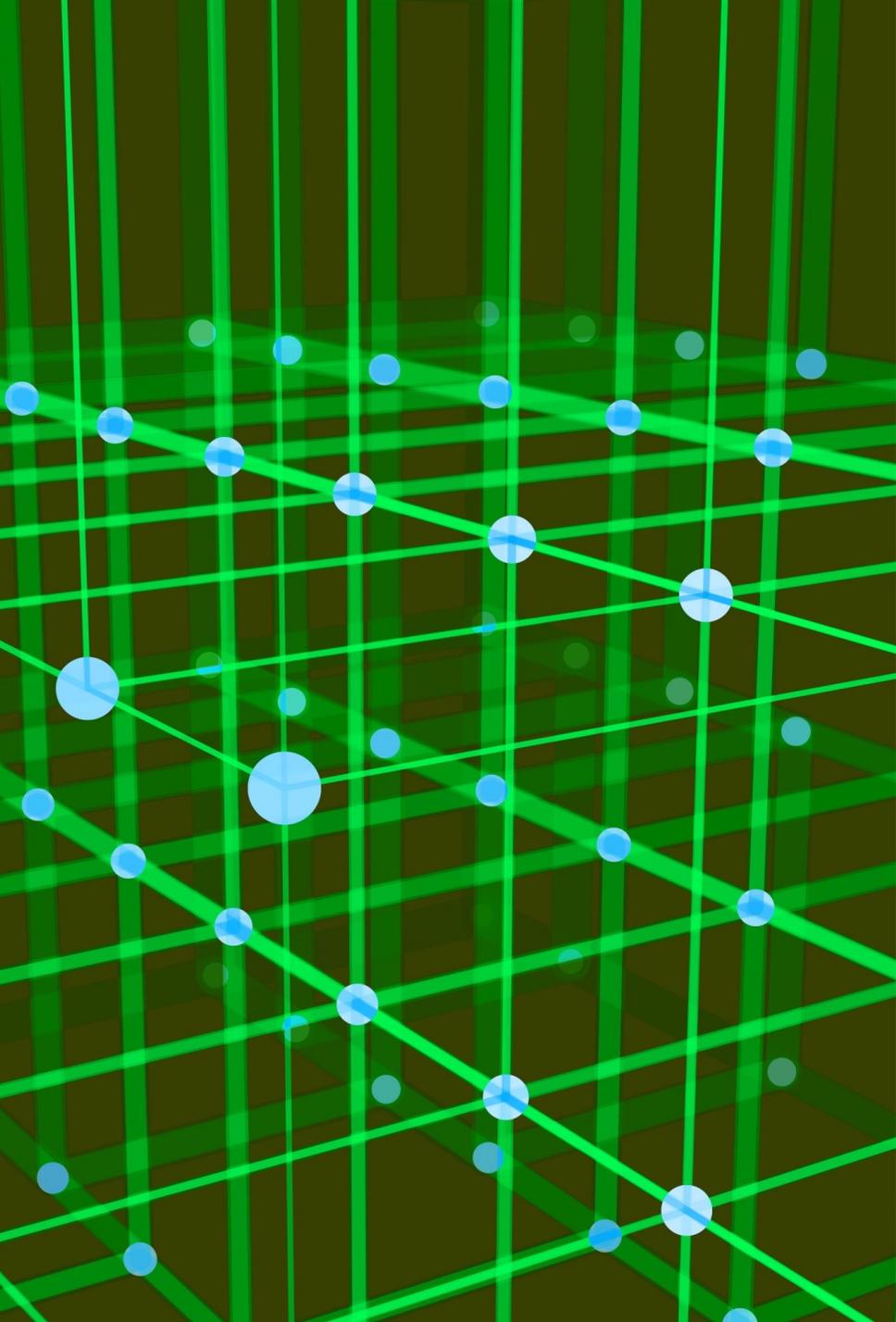
Algorithmic decision-making

Different algorithms may lead to different distributions of benefits and burdens

How do we evaluate these ethically?

➢ Distributive justice!

Distributive justice

Principles of distributive justice provide moral guidance for the processes and structures that affect the distribution of benefits and burdens in societies

From the *Stanford Encyclopedia of Philosophy*
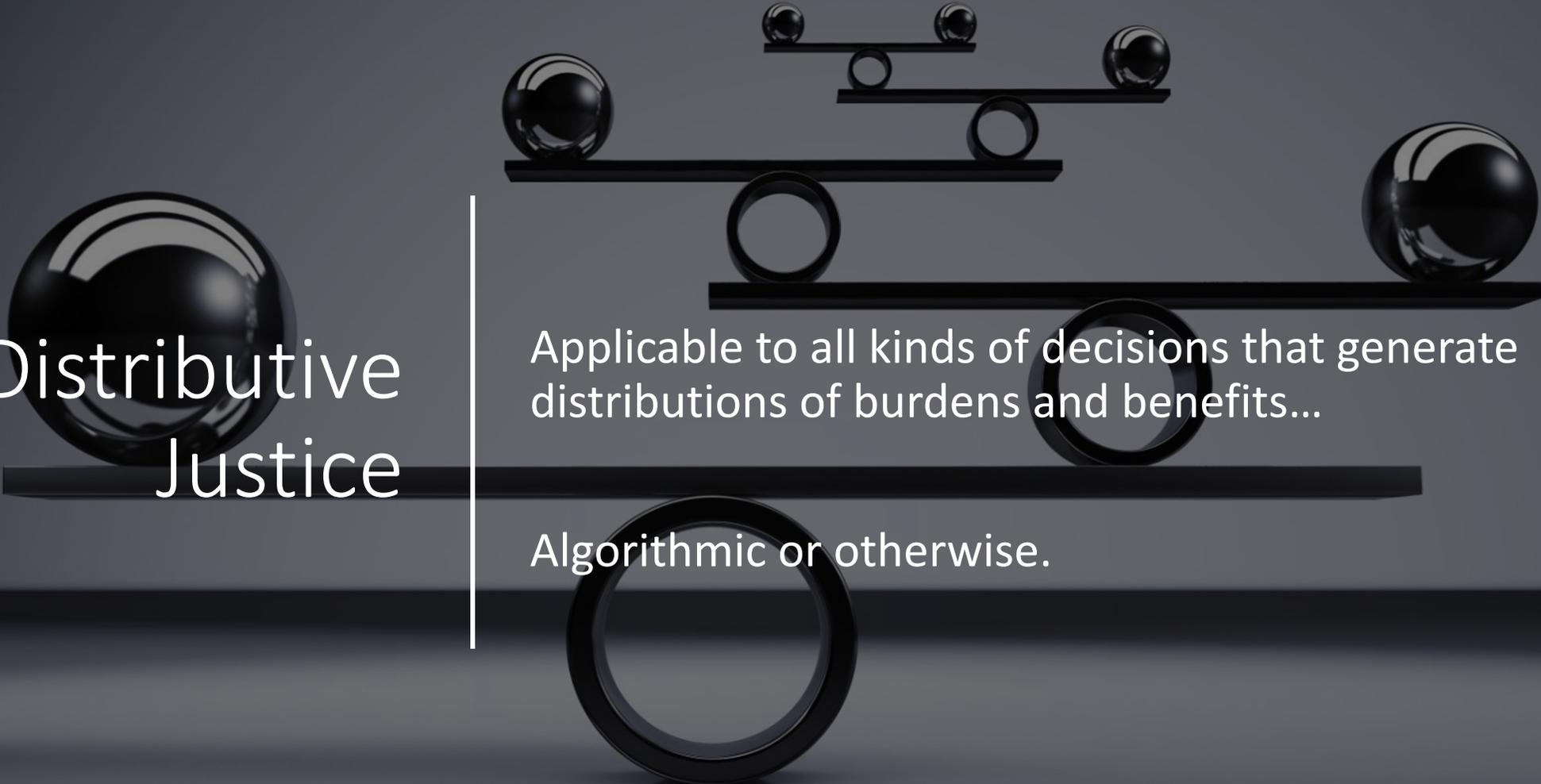
Distributive Justice

Applicable to all kinds of decisions that generate distributions of burdens and benefits…

Algorithmic or otherwise.
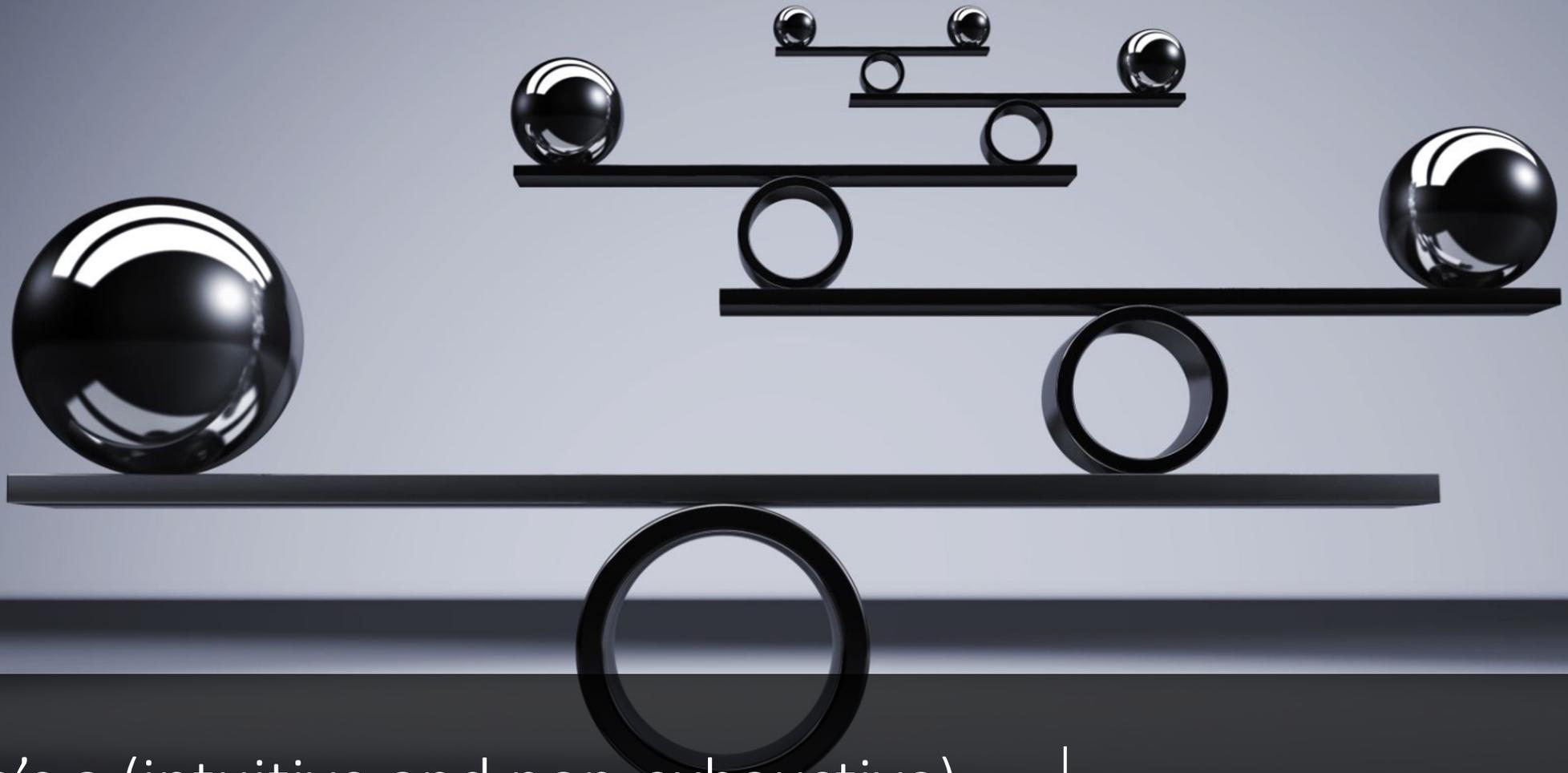
Here's a (intuitive and non-exhaustive)
list of principles of distributive justice…

Vaccine Distribution

- Having a limited number of vaccines and a large population, how do you allocate vaccines?

  - Globally
  - Nationally
  - Locally

➢ Let's think about this at the **local level**

Vaccine Distribution: Principle 1

- Ensure that as many people as possible get vaccinated, regardless who they are.

- The highest quantity at the lowest cost and in the shortest time frame.

- E.g. vaccination centers in densely populated areas of the city.

Maximize well-being

Secure the greatest net benefit

Vaccine Distribution: Principle 2

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- Ensure that the most vulnerable populations have access to vaccines before anybody else
  - Age
  - Race
  - Class
  - Comorbility

Prioritizing the worst off

Choose the distribution that prioritizes groups and individuals who are worst off.

Vaccine Distribution: Principle 3

- Vaccinate the members of historically marginalized groups first.

Avoiding Compounding Injustice

Do not impose a disadvantage on members of a demographic group that has faced historical discrimination.

Principles of Distributive Justice

Maximize well-being

Prioritize the worst-off

Avoid compounding historical injustice

Principles of Distributive Justice

Maximize well-being

Prioritize the worst-off

Avoid compounding historical injustice
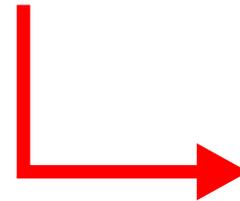
INTUITIVE AND
NOT EXHAUSTIVE LIST

Principles of Distributive Justice

Maximize well-being

Prioritize the worst-off

Avoid compounding historical injustice
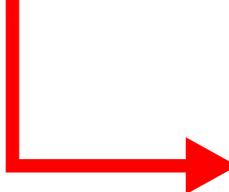
Also applicable to distribution of benefits and burdens through algorithmic decisions

Thank you!