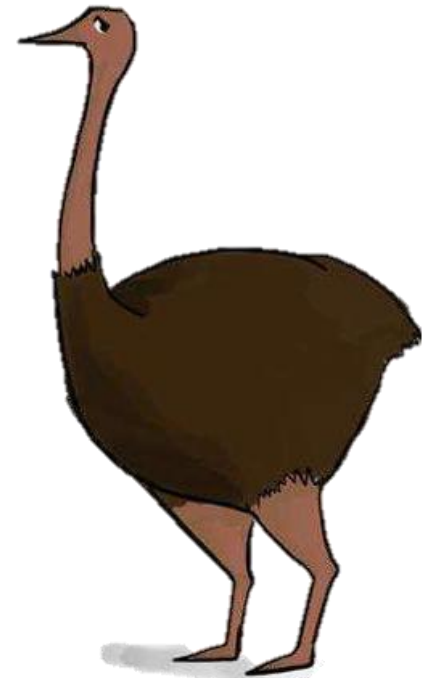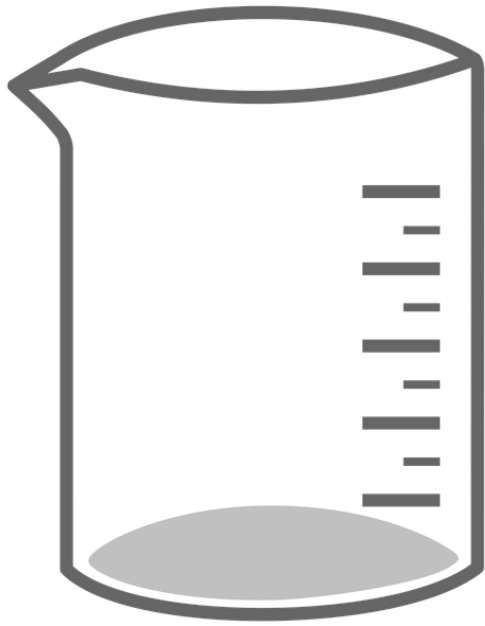# Incommensurability, Wicked Problems, and Discretion

Embedded Ethics

Incommensurability

- Lacking a *common measure* of value.

- Incommensurability makes it difficult to establish ranking relationships such as "more than" or "less than, "better than" or "worse than."

- If I am building an algorithm to determine monthly catch limits on wildlife, how do I compare ecological resilience, economic gain from hunting and fishing, and consistency in fishing as a livelihood?

- If I am building a navigation system, how do I compare Manhattan distance of route and carbon-footprint of route?
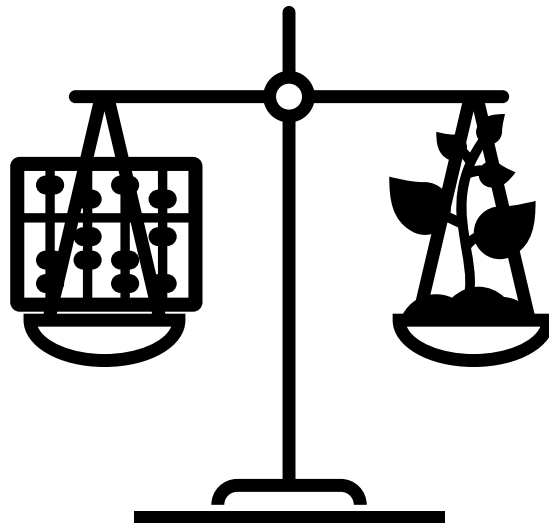
"Tame" Problems

- In some ways, the problems we have addressed so far in class are tame problems

- Tame problems can still be incredibly difficult to solve!

- But at least they are tractable to formalize and formulate

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Wait... even my challenge problems?

"Wicked" problems

- There is no definitive formulation of a wicked problem
- Wicked problems have no stopping rule
- Solutions to wicked problems are not true-or-false, but good-or-bad
- There is no immediate and no ultimate test of a solution to a wicked problem
- Every solution to a wicked problem is a "one-shot operation"; because there is no opportunity to learn by trial-and-error, every attempt counts significantly
- Wicked problems do not have an enumerable (or an exhaustively describable) set of potential solutions, nor is there a well-described set of permissible operations that may be incorporated into the plan
- Every wicked problem is essentially unique
- Every wicked problem can be considered to be a symptom of another problem
- The existence of a discrepancy representing a wicked problem can be explained in numerous ways. The choice of explanation determines the nature of the problem's resolution
- The planner has no right to be wrong

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OK, these problems sound hard but I'm still not convinced that they are any harder than the challenge problems I've given! How hard can a wicked problem really be?

Case: Homelessness

- There is no definitive formulation of a wicked problem
- There is no stopping rule
- Solutions to wicked problems are not true-false but good-bad or better-worse
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- Every solution is one-shot
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Case: Homelessness

- There is no immedi... wicked problem
  - What test could on... had been solved?
- Every solution is one-shot
  - Each experiment affects real people. Improving the solution later doesn't change the effect on that time in their lives.
- Every wicked problem can be considered a symptom of another problem
  - Is homelessness caused by a housing shortage? By lack of pub... housing? By lack of mental health treatment? We could offer m... possible causes, each of which has proponents.

Ah, ok. Yes, homelessness is a really hard problem in a way that's not an ordinary challenging homework problem. But this is an algorithms class! Where is the algorithmic challenge?

THE HOMELESS CRISIS RESPONSE SYSTEM FOR LOS ANGELES COUNTY

The Coordinated Entry System (CES) facilitates the coordination and management of resources and services through the crisis response system.

CES allows users to efficiently and effectively connect people to interventions that aim to rapidly resolve their housing crisis.

CES works to connect the highest need, most vulnerable persons in the community to available housing and supportive services equitably.

Case: Los Angeles County Coordinated Entry System (CES)

- An electronic registry of unhoused persons who are applying or have applied to housing support programs offered by Los Angeles County.

How does it work?

Unhoused person provides (very) personal information including name, DOB, immigration status, current & past mental health, sexual activity, substance.

Algorithm uses personal data to assign a number from 1-17, least vulnerable to most vulnerable.

Risk score is used to sort by vulnerability, rank the applications, and assign housing and housing related services to the most and least vulnerable.

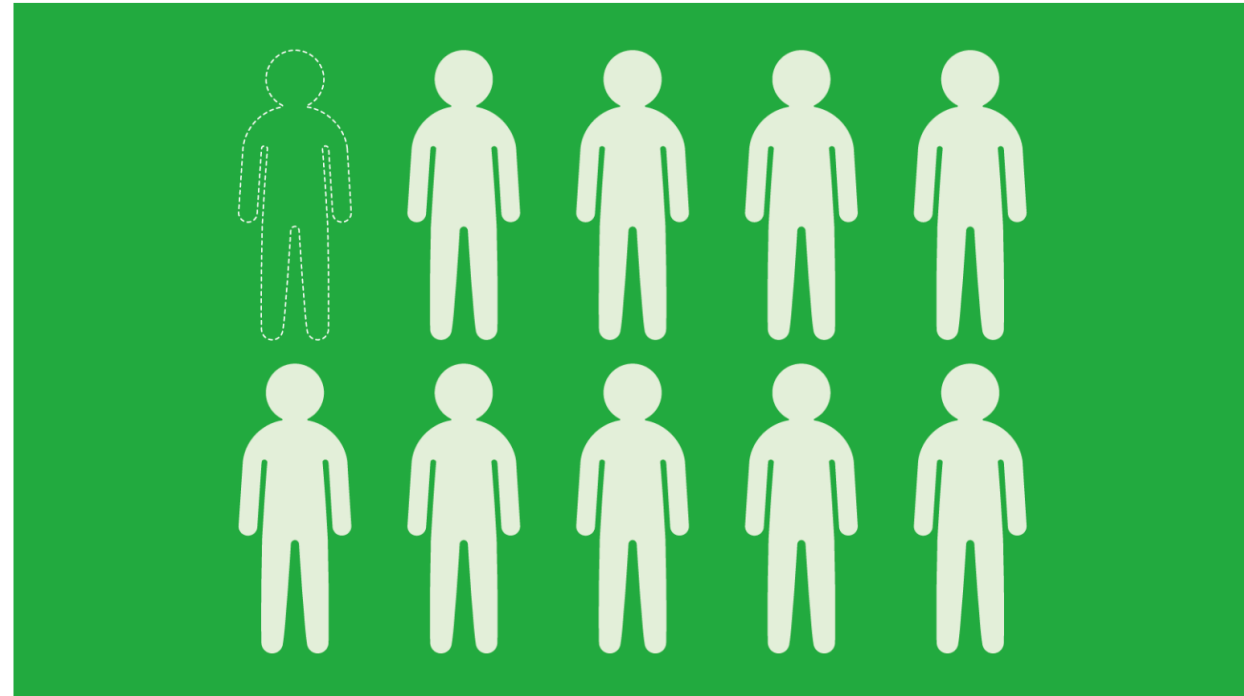Question: Which problem is this solving?

Credit Score Algorithms...

- What should go into a credit score algorithm?

- Who has the opportunity to build credit score, and when?

Who are the Credit Invisible?
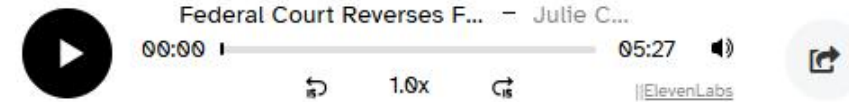
How to help people with limited credit histories

By Michele Scarbrough - DEC 12, 2016

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Federal Court Reverses Federal Medical Debt Protections

By Julie Carter | July 31, 2025 | 💬 3 Comments

Federal Court Reverses F... — Julie C...

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Removing Medical Debt from Consumer Credit Reports

The CFPB is finalizing a rule that will remove medical debt from the credit reports of more than 15 million Americans, raising their credit scores by an estimated average of 20 points and leading to the approval of approximately 22,000 additional mortgages every year. Under the CFPB rule, there will be zero Americans with medical debt listed on their credit reports, down from 46 million in 2020. CFPB's research indicates that medical bills are poor predictors ↗ of an individual's ability to repay a loan and that medical bills are often confusing and erroneous ↗. In March 2022, the CFPB released a report ↗ estimating that medical bills made up $88 billion of reported debts on

This month, a federal court blocked a rule that was designed to protect people with medical debt by keeping it off credit reports and out of credit decisions. This means that