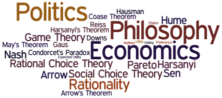
PHIL309P
Philosophy, Politics and Economics

Eric Pacuit
University of Maryland, College Park
pacuit.org

Announcements



- Course website
  https://myelms.umd.edu/courses/1133211
- Reading: Gaus, Ch 2. (up to 2.3) Utility Theory;Reiss, Ch 3, pgs. 29 - 42; Gilboa dialogue.
- Weekly writing: **Due Wednesday, 11.59pm**.
- Office hours canceled this Wednesday.

The Aim of Economics

> The main task of the social sciences is to explain social phenomena. It is not the only task, but it is the most important one, to which others are subordinated or on which they depend. (Elster, pg. 9)

J. Elster. *Explaining Social Behavior: More Nuts and Bolts for the Social Sciences*. Cambridge University Press, 2007.

Instrumental Rationality

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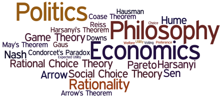

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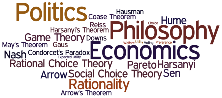

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At present, we have no adequate theory of the substantive rationality of goals and desires, to put to rest Humes statement, "It is not contrary to reason to prefer the destruction of the whole world to the scratching of my finger."

(Nozick, pg. 139-140)

R. Nozick. *"Rational Preferences"*. in The Nature of Rationality, pgs. 139 - 151.

Homo Economicus

Can we characterize *Homo Economicus* simply in terms of instrumental rationality?

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Economic Rationality: Ann's action α is economically rational only if it is (a) instrumentally rational or (b) consumptively rational.

Homo Economicus

1. More is better than less

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   - If the focus is on specific goods, then satiation and "lumpiness" are problems.
   - Assume that goods are continuous, and that an extra increment always better satisfies our goal than a smaller (e.g., money)

Homo Economicus

2. Goals are characterized by *decreasing marginal value*

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    - Hedonists: it is a deep psychological law that the more we have of something, the less extra pleasure we get from each additional unit.
    - crucial to the idea of a *rational multiple-goal pursuer* who seeks to satisfy different goals at different times.
    - *indifference curves*

Homo Economicus

3. Downward sloping demand curve

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   - Opportunity costs: *Homo Economicus* must be able to choose between competing actions promoting different ends through a system of trade-off rates according to which the “demand” for a goal/end decreases as its cost relative to other goals/ends increases.

Homo Economicus

4. Selfishness/Wealth maximization/ Non-tuism

   - The assumption is that people have goals they wish to pursue, and are devoted to pursuing their own goals in the most efficient manner. Just what those goals are is another question.
   - Non-tuism: your “utility” can be calculated as, in principle, independent of my “utility”. It is a simplifying assumption, not something inherent to the economic understanding of rational agents.

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Rationality: Two Themes

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Rationality is a matter of **reliability**:

- A rational belief is one that is arrived at a through a *process* that reliably produces beliefs that are true.
- An act is rational if it is arrived at through a *process* that reliably achieves specified goals.

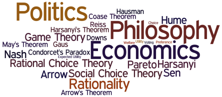
Rationality: Two Themes

"Neither theme alone exhausts our notion of rationality. Reasons without reliability seem empty, reliability without reasons seems blind. In tandem these make a powerful unit, but how exactly are they related and why?"

(Nozick, pg. 64)

R. Nozick. *The Nature of Rationality*. Princeton University Press, 1993.

Rational Choice/Decision Theory



Rational decision making is associated with both the capacity to order outcomes *and* to choose from the *top* of the order.

Decision Problems

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Individual decision-making (against nature)

- E.g., Gambling

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- E.g., Voting in an election

Decision Theory

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Partial/Total/Overal Comparisons

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1. Lauren drank water rather than wine with dinner, despite preferring to drink wine, because she promised her husband she would stay sober.
2. Lauren drank water with dinner because she preferred to do so. But for the promise she made her husband to stay sober, she would have preferred to drink wine rather than water with dinner.

Preferences

Preferring or choosing x is different that "liking" x or "having a taste for x": one can prefer x to y but *dislike* both options

In utility theory, preferences are always understood as comparative: "preference" is more like "bigger" than "big"

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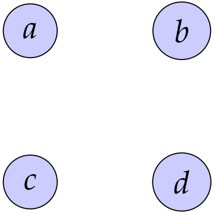

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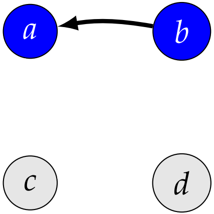

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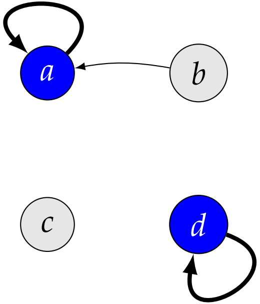

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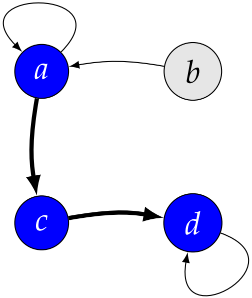

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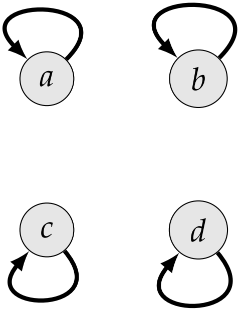

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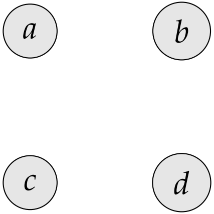

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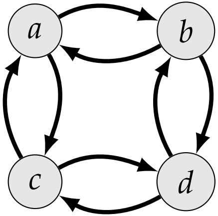

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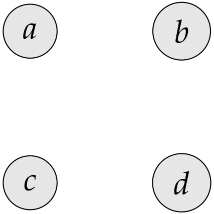

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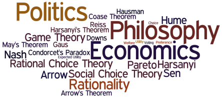

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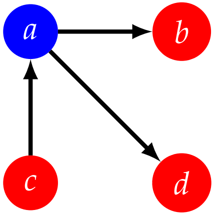

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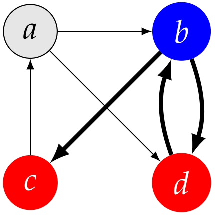

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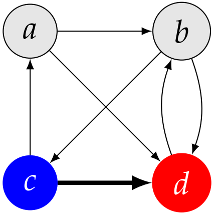

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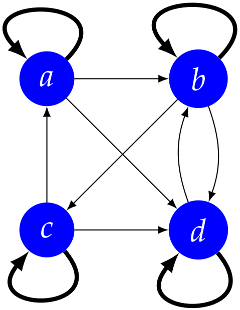

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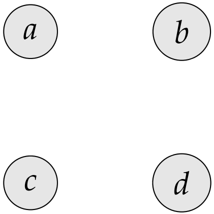

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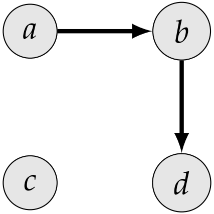

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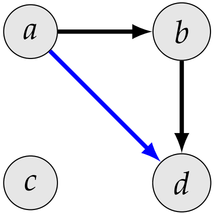

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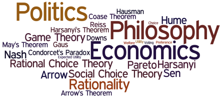

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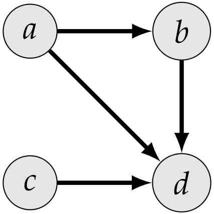

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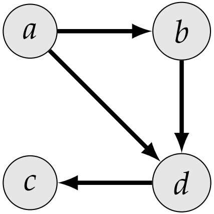

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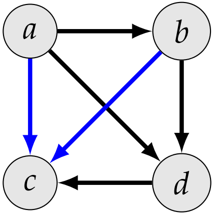

Maximal elements, Cycles

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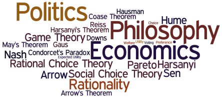
A **cycle** is a set of distinct elements $x_1, \ldots, x_n$ such that

$$x_1 \; R \; x_2 \cdots x_{n-1} \; R \; x_n \; R \; x_1$$

R is **acyclic** if it does not contain any cycles.

Representing Preferences



Let X be a set of options/outcomes. A decision maker's *preference* over X is represented by a *relation* $\succeq\ \subseteq\ X \times X$.

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4. $x \not\succeq y$ and $y \not\succeq x$: The agent *cannot compare* x and y

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Given $x, y \in X$, there are four possibilities:

1. $x \succeq y$ and $y \not\succeq x$: *The decision maker ranks x above y* (the decision maker strictly prefers x to y).

2. $y \succeq x$ and $x \not\succeq y$: *The decision maker ranks y above x* (the decision maker strictly prefers y to x).

3. $x \succeq y$ and $y \succeq x$: The agent is ***indifferent*** between x and y.

4. $x \not\succeq y$ and $y \not\succeq x$: The agent ***cannot compare*** x and y

Representing Preferences

A relation $\succeq \subseteq X \times X$ is a **(rational) preference relation** (for a decision maker) provided

1. $\succeq$ is complete (and hence reflexive)
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Suppose that $\succeq$ is a preference relation. Then,

- **Strict preference**: $x \succ y$ iff $x \succeq y$ and $y \not\succeq x$
- **Indifference**: $x \sim y$ iff $x \succeq y$ and $y \succeq x$

- What is the relationship between choice and preference?
- Why *should* preferences be complete and transitive?
- *Are* people's preferences complete and transitive?

Folk Psychology

The view that human behavior can and ought to be explained by citing beliefs and desires.

Beliefs and desires are thus *reasons for action*.

No every reason an individual might have to perform an action also constitute the reason that explains his or her action. Rather it is the reason the individual *acted on* that explains the action.

Folk Psychology

In order to infer motivations or beliefs from behavior (or other accessible forms of evidence), one must make fairly strong assumptions concerning the system of beliefs and desires people have. If individuals acted very erratically (though always on reasons!) it would be impossible to infer beliefs or desires or both both from their actions.

Choices

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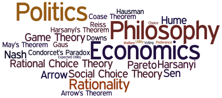
Decisions are between beliefs and desires on the one hand and actions on the other.

Should preferences be *identified* with choices?



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The verb "to prefer" can either mean "to choose" or "to like better," and these two senses are frequently confused in economic literature. That fact that an individual chooses A rather than B is far from conclusive evidence that he likes A better. But whether he likes A better or not should be completely irrelevant to the theory of price. (Little, 1949).

Preferences and Choices

Preferences are closely related to choices: preferences may *cause* and to help to *explain* choices; preferences may be invoked to *justify* choices, in fortuitous circumstances, we can use preference data to make *predictions* about choice. But to identify the two would be a mistake.

Preferences and Choices

- We have preferences over vastly more states of affairs than we can ever hope (or dread) to be in the position to choose.

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- What about *counter-preferential choice*?
- Preferences must be *stable* over a reasonable amount of time in a way that (observed) choices aren't (needed to predict and explain choices).
- Beliefs and expectations over future states of affairs are needed in addition to preferences in order to explain choices. To banish preferences understood as mental rankings because they are unobservable or subjective would mean that beliefs and expectations would have to be banished as well.

Preferences will be understood as *mental rankings* of alternatives “all things considered”.

Revealed Preference Theory

Standard economics focuses on revealed preference because economic data comes in this form. Economic data can—at best—reveal what the agent wants (or has chosen)in a particular situation. Such data do not enable the economist to distinguish between what the agent intended to choose and what he ended up choosing; what he chose and what he ought to have chosen. (Gul and Pesendorfer, 2008)

Sen's α Condition

R: red wine

W: white wine

L: lemonade

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$$R \succ W$$

If the world champion is American, then she must be a US champion too.

Observations of actual choices will only partially constrain preference attribution. That someone chooses red wine when white wine is available does not allow one to conclude that the choice of an white wine was ruled out by her preferences, only that her preferences ruled the red wine in.

Sen's β Condition

R: red wine

W: white wine

Sen's β Condition

R: red wine

W: white wine

Sen's β Condition

R: red wine

W: white wine

L: lemonade

Sen's β Condition

R: red wine

W: white wine

L: lemonade

Sen's β Condition

R: red wine

W: white wine

R: red wine

W: white wine

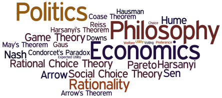
L: lemonade

If some American is a world champion, then all champions of America must be world champions.

Revealed Preference Theory

A decision maker's choices over a set of alternatives X are **rationalizable** iff there is a (rational) preference relation on X such that the decision maker's choices *maximize* the preference relation.

Revealed Preference Theory



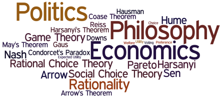
A decision maker's choices over a set of alternatives X are **rationalizable** iff there is a (rational) preference relation on X such that the decision maker's choices *maximize* the preference relation.

Revelation Theorem. A decision maker's choices satisfy Sen's α and β if and only if the decision maker's choices are **rationalizable**.

Choice Functions

Suppose X is a set of options. And consider $B \subseteq X$ as a choice problem. A **choice function** is any function where $C(B) \subseteq B$. B is sometimes called a menu and $C(B)$ the set of "rational" or "desired" choices.

Choice Functions



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A. Sen. *Maximization and the Act of Choice*. Econometrica, Vol. 65, No. 4, 1997, 745 - 779.

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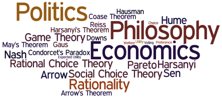

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"The formulation of maximizing behavior in economics has often parallels the modeling of maximization in physics an related disciplines. But maximizing *behavior* differs from nonvolitional maximization because of the fundamental relevance of the choice act, which has to be placed in a central position in analyzing maximizing behavior. A person's preferences over *comprehensive* outcomes (including the choice process) have to be distinguished form the conditional preferences over *culmination* outcomes *given* the act of choice." (pg. 745)

Maximizing

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Invoking someone's preferences will suffice to explain why some choices were not made (i.e. in terms of rational impermissibility) but not typically why some particular choice was made. To take up the slack, explanations must draw on factors other than preference: psychological one such as the framing of the choice problem or the saliency of particular options, or sociological ones such as the existence of norms or conventions governing choices of the relevant kind.

- What is the relationship between choice and preference?
- Why *should* preferences be complete and transitive?
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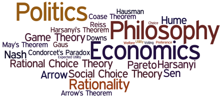
- Transitivity: Money-pump argument
- Completeness: Incommensurable options

Preference, Choice, and Utility



- ✓ Representing *preferences*: relations, preference axioms
- ✓ *Revealed* preference theory: WARP, Sen's α and β, Revelation Theorem
- ▸ *Utility*: Ordinal vs. cardinal utility, interval scale, ratio scale
- ▸ *Expected utility theory*: (probability), von Neumann-Morgenstern Theorem, Allais paradox, Ellsberg paradox, (Other issues: framing effects, state-dependent utility, etc.)
- ▸ Interpersonal comparison of utilities

- Reading: Gaus, Ch 2. (up to 2.3) Utility Theory;Reiss, Ch 3, pgs. 29 - 42; Gilboa dialogue.
- Mathematical background: my notes on choice, preference and utility.
- Weekly writing: **Due Wednesday, 11.59pm**.