

Rationality

Lecture 1

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Practicalities

- ▶ Course website

<http://ai.stanford.edu/~epacuit/classes/rationality.html>

- Weekly readings will be posted
- Slides will be posted
- Pay attention to the schedule (midterm, canceled classes, etc.)

- ▶ Weekly lecture + discussion

- ▶ Teaching Assistant: Dominik Klein (D.Klein@uvt.nl)

- ▶ Office Hours: by appointment (e.j.pacuit@uvt.nl)

- ▶ Office: Room 142, Dante Building (shared with Dominik)

Practicalities: Grading

1. Weekly writing (10%)
 - short (at most 1 page!) observations (comments, questions) about the current week's readings
 - do not simply summarize the paper/chapter
 - hand in before each class (or put in my pigeon hole)
2. Midterm exam (40%)
 - Some questions testing comprehension, short essay
 - **Due: March 14, 2011** (will be made available around February 28, 2011)
3. Final paper (50%)
 - On a topic of your choosing (see the website for some suggestions)
 - I need to approve the topic. Prepare a short (2-3 page) outline of your paper before **May 9, 2011**.
 - **Due: June 15, 2011** (send email with the subject: Final paper for rationality course)

Practicalities: Literature



Itzhak Gilboa, *Rational Choice*, The MIT Press, 2010
(Chapters 1,2,4,5,6,7,10 and [online appendices](#))

Contemporary research papers published in academic journals and recent books (consult the schedule for details).

Can we find a more reasonable time to meet?

What is this course about?

What does it mean to be *rational* or *reasonable* as opposed to *irrational* or unreasonable?

G. Harman. *Rationality*. In Reasoning, Meaning and Mind (1999).

What are we *assessing*?

Actions?

- ▶ The problem of *action individuation*
- ▶ Deviant causes
- ▶ Free-will

What are we *assessing*?

Choices/Decisions? Two criteria for assessing the rationality of a selected *option*:

1. An option is **feasible** if it can be chosen, if it is *possible* for the decision maker.
2. The **desirability** of an option is the degree to which the decision maker *wants* it.

Feasibility vs. Desirability

Aesop's Fox: One hot summer's day a Fox was strolling through the forest and spotted a bunch of grapes hanging from a high branch. "Just the thing to quench my thirst," said he. Taking a few steps back, the fox jumped and just missed the hanging grapes. Again the fox took a few paces back, jumped, and tried to reach them but still failed. Again and again he tried after the tempting morsel. Finally, giving up, the fox turned up his nose and said, "They're probably sour anyway", and walked away.

Groucho Marx's Club: "I don't care to belong to a club that accepts people like me as members"

Feasibility vs. Desirability

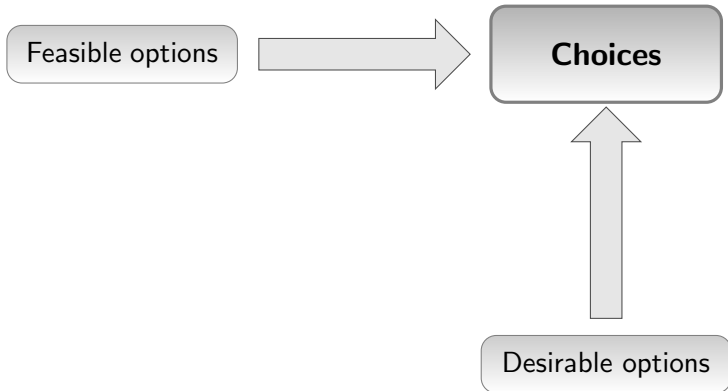
“It appears irrational to mix the two...there is a sharp distinction between desirability and feasibility. By sharp distinction we mean not only that the two can be told apart but also that they are causally independent; one does not affect the other.”

I. Gilboa. *Chapter 1 in Rational Choice*. The MIT Press, 2010.

What are we assessing?

W. Spohn. *The many facets of rationality*. Croatian Journal of Philosophy, Volume 2, Issue 6, pp. 249 - 264, 2002.

What are we assessing?



What is the difference between informational and motivational attitudes?

Informational attitudes are about “*fitting the mind to the world*”

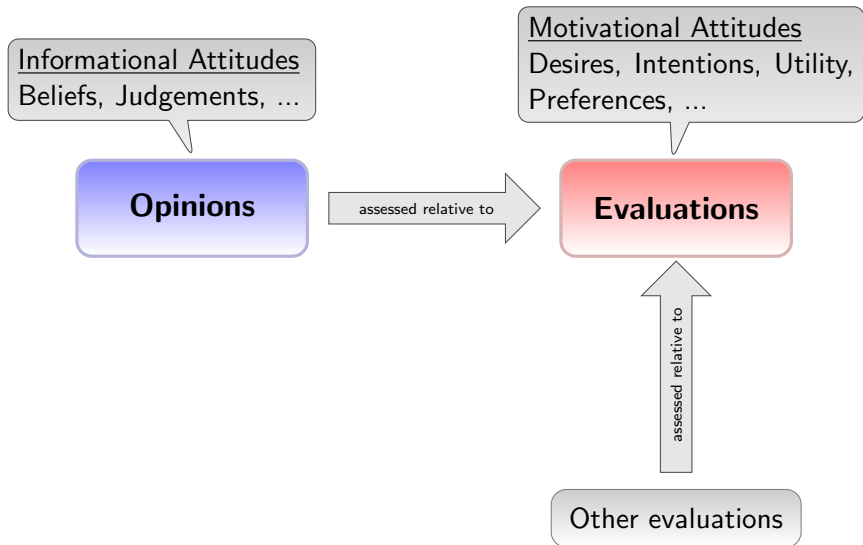
Motivational attitudes are about “*fitting the world to the mind*”

“Direction of Fit”

“Let us consider a man going round a town with a shopping list in his hand. Now it is clear that the relation of this list to the things he actually buys is one and the same whether his wife gave him the list or it is his own list; and that there is a different relation where a list is made by a detective following him about. (...) If the list and the things that the man actually buys do not agree, and if this and this alone constitutes a mistake, then the mistake is not in the list but in the man’s performance (...); whereas if the detective’s record and what the man actually buys do not agree, then the mistake is in the record.” [Anscombe, pg. 56]

G. E. M. Anscombe. *Intention*. Harvard University Press, 1957.

What are we assessing?



Example: Giving in to Temptation

Jane very much wants to do well in history. There is a crucial test tomorrow and she needs to study tonight if she is to do well on the test....Jane knows that if she goes to the party, she will really regret it. But she goes to the party anyway.

Example: Refusing to take a Remedial Course

Bob, a college freshman, takes a test designed to indicate whether students should take a useful remedial writing course. Students do not write their names on their exam books but write an identification number instead, so graders cannot identify the students. Bob does poorly on the test and is required to take a remedial course. He objects to this advice, attributing a low test score to bias on the part of the grader, and does not take a remedial writing course.

Examples: Making a Mistake

Confusing two Philosophers:

Frieda is having trouble in her introductory philosophy course. Because of a similarity in their names, she confuses the medieval philosopher Thomas Aquinas with the 20th century philosopher W. V. Quine.

Confusing Twins:

Harry has trouble distinguishing the twins Connie and Laura. Sometimes he mistakes one for the other.

Calculating Mistakes:

Sam makes an adding mistake when he prepares his budget for next year.

Practical Rationality vs. Theoretical Rationality

- ▶ Jane's irrationality is manifested in *a decision to do something*
- ▶ Bob's irrationality is manifested in *his belief*

Informational Attitudes
Beliefs, Judgements, ...

Opinions

assessed relative to

Motivational Attitudes
Desires, Intentions, Utility,
Preferences, ...

Evaluations

ive to
assess
Theoretical Rationality

ive to
assess
Practical Rationality

Prior beliefs, experiences

Other evaluations

Informational Attitudes
Beliefs, Judgements, ...

Motivational Attitudes
Desires, Intentions, Utility,
Preferences, ...

Theoretical vs. Practical Rationality

Arbitrary Belief

Jane is trying to decide which route Albert took to work this morning. She knows that in the past Albert has taken Route A about half the time and Route B about half the time. Her other evidence does not support one of these conclusions over the other. So, Jane arbitrarily decides that Albert took Route A.

Arbitrary Intention

Albert is trying to decide how to get to work this morning. He could take either Route A or Route B. Taking either of the routes will get him to work at about the same time and the balance of reasons does not favor going one way over going the other way. So, Albert arbitrarily forms the intention of taking Route A.

Theoretical vs. Practical Rationality

Wishful Practical Thinking

Jane's desire to get a good grade on the final exam leads her to study for the exam in order to try to make it true that she will get a good grade on the final exam.

Wishful Theoretical Thinking

After Jane has taken the exam and before she has learned what her grade is, her desire to get a good grade on the exam leads her to conclude that she did get a good grade.

Practical Aspects of Theoretical Rationality

- ▶ Your desires can rationally affect your theoretical conclusions by affecting what questions you use theoretical reasoning to answer. (examples: pg. 15 of Harman)

- ▶ It is possible to have good practical reasons to believe something: *Pascal's Wager*
<http://plato.stanford.edu/entries/pascal-wager/index.html>

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Rationality: Two Themes

Rationality is a matter of **reasons**:

- ▶ The rationality of a belief P depends on the *reasons for holding P*
- ▶ The rationality of act α depends on the *reason for doing α*

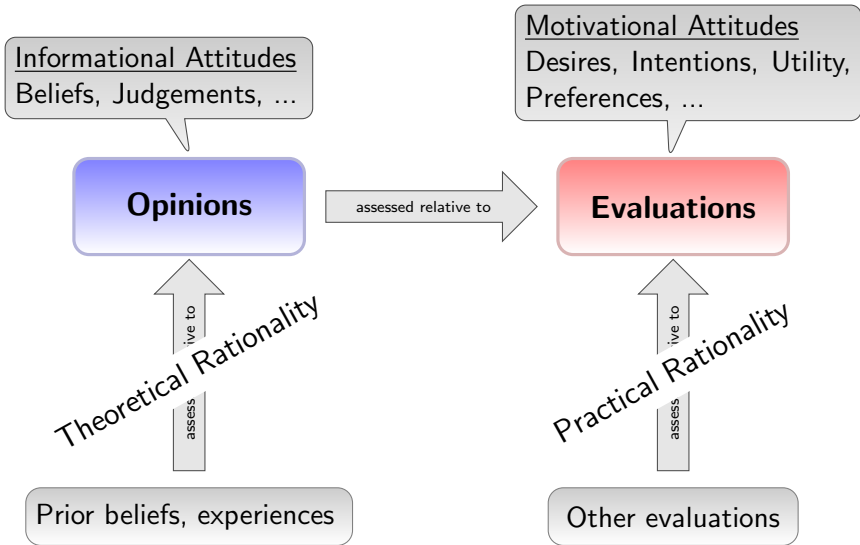
Rationality is a matter of **reliability**:

- ▶ A rational belief is one that is arrived at 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.



Context of Decision Making

- ▶ Individual decision making and individual action **against nature**.
 - Example: gambling.
- ▶ Individual decision making in **interaction**.
 - Example: playing chess.
- ▶ **Collective** decision making.
 - Example: carrying a piano, voting



Example: Refusing a Reasonable Proposal

Three students, Sally, Ellie and Louise have been assigned to a set of rooms consisting of a study room, small room with a single bed, and a room with two bunk-beds. Sally arrives first and moves into the single room. The other two room-mates propose that they take turns living in the single room, each getting the single for one-third of the year. Sally refuses to consider this proposal and insists on keeping the single for the whole year.

Is Sally being *irrational*?

Main Topics

Reasons, Reasoning and Logic

Understanding different “modes” of reasoning

Rational Beliefs

How does rationality constrain our beliefs?

Rational Choice

What does it mean for an agent to *choose* rationally?

Rationality in Interaction

What happens when rational agents *interact*?

Group Rationality

What does it mean for a *group* to be *rational*?

Philosophy of Normativity

Various logics, scientific methodology, heuristics, probability, decision theory all have claims to *normative status* here, but what does *normativity* mean here:

1. What does it mean for someone to be *rationally required* to be in a particular state of mind?
2. *Why be rational?*

Methodological Issues

Interdisciplinary: Logic, Philosophy (Epistemology, Philosophy of Action, Meta-Ethics), Economics (Rational Choice Theory, Game Theory, Social Choice Theory), Psychology and Cognitive Science

Formal Philosophy:

- ▶ make use of ideas and results from other areas,
- ▶ build formal models of reasoning, decision making and social interaction (which can be rigorously analyzed and even implemented),
- ▶ axiomatic method

Normative vs. Description Theories: How can/should we incorporate *empirical data* into our *normative* theory of rationality? (reflective equilibrium)

Next week (Dominik): Background (basics of logic and probability)
Next² week: Modes of reasoning