

Philosophy and Ethics for Computing and Information Science

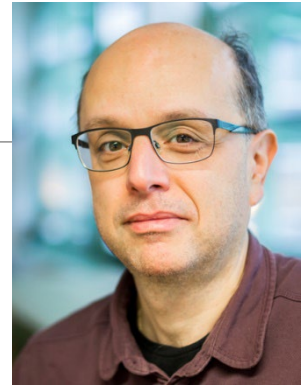
IMI0003 / Fall 2023 / 3 ECTS, 04-11 / **16-12**, 10.30-12.15,
HG00.304



,c 1995 Watterson

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Luca Consoli – Short Bio



- 1996: M. Sc. in High Energy Physics (string theory)
- 2002: PhD. In solid state computational physics (friction theory)
- 2002 – 2006: post-doc in Ethics of Science
- 2007 – 2018: Assistant Professor, Science in Society
- 2016: Faculty Award, Best Senior Teacher
- 2017: University Award, Best Senior Teacher
- 2018 – present: Associate Professor, Science in Society

Institute for Science in Society

The Institute for Science in Society (ISiS) focuses on how actors – whether they are scientists, citizens, technology developers or other stakeholders – understand the world around them and how such understanding can be improved to facilitate the addressing of complex issues in science and technology.

<https://www.ru.nl/en/institute-for-science-in-society>

What is the course about?

‘The philosophy of computer science is concerned with those **ontological**, methodological, and **ethical issues** that arise from within the academic discipline of computer science as well as from the practice of software development. Thus, the philosophy of computer science shares the same philosophical goals as the philosophy of mathematics and the many subfields of the philosophy of science, such as the philosophy of biology or the philosophy of the social sciences. The philosophy of computer science also considers **the analysis of computational artifacts, that is, human-made computing systems**, and it focuses on methods involved in the design, specification, programming, verification, implementation, and testing of those systems.’

<https://plato.stanford.edu/entries/computer-science/>

Take home messages for today

- How is the course structured?
- What do you need to do in order to pass this course?
- What is needed to reflect systematically on the ethical and philosophical aspects of your field(s) of study?
- Why is this reflection necessary for you?

Leitmotif of the course

From passive objects...

(Moral) agency

...to active objects and (almost) everything in
between

high

Autonomy

low

low

Ethical sensitivity

high

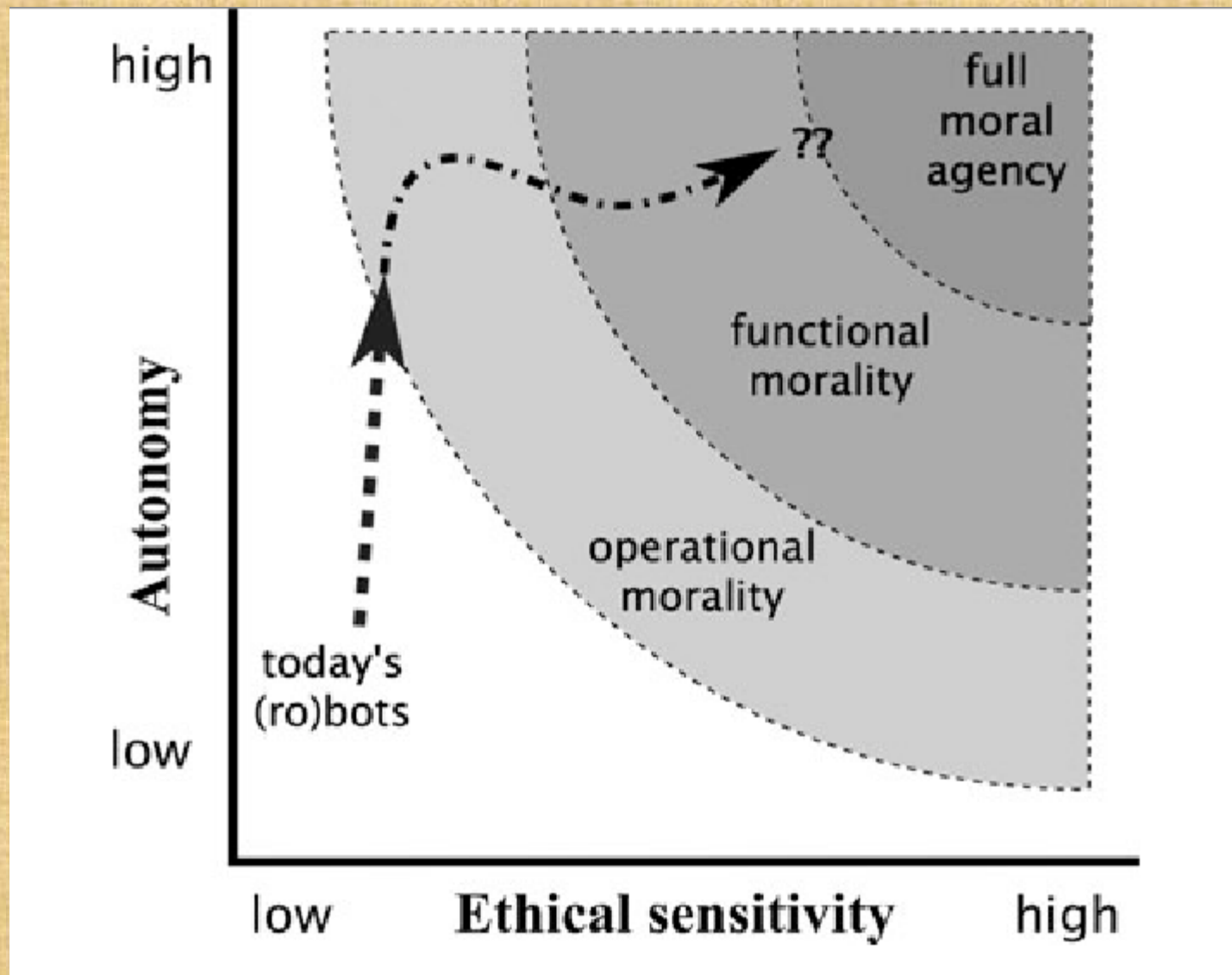
today's
(ro)bots

operational
morality

functional
morality

full
moral
agency

??



Before ethics of computing science...



...we need a general introduction to (normative)
ethics

M E T A E T H I C S
V E R S U S
N O R M A T I V E E T H I C S

M E T A E T H I C S

Metaethics is the study
of the nature of ethics

Analyzes the meaning of
moral language and
metaphysics of moral facts

More philosophical in
nature as it analyzes the
nature of ethics and
morality

N O R M A T I V E E T H I C S

Normative ethics is the
study of ethical action

Evaluates standards for
the rightness and
wrongness of actions

More practical in nature

Visit www.PEDIAA.com

Topics

- ICT & the human nature
- Ethical theories
- Ethics of ICT
- Philosophical issues (Mind / body, AI,...)

Aims

The student will:

- be acquainted with a number of philosophical and ethical theories, both in general and applied to his/her object of study;
- be able to recognize the implicit presuppositions in a number of scientific advances of his/her object of study;
- be able to reflect on the normativity of his/her object of study;
- be able to articulate his/her reflection in a written way

- Assignments: students will have to write 1 mid-term and 1 final term **group** paper (summative).
- Assignments: students will have to submit 1 **individual** assignment (formative)
- Assignments will be made available (and must be submitted) via Brightspace
- There is no final examination planned.
- Mid-term essay and final term essay are both worth 50% of the final grade
- All assignments must have a grade equal of higher than 6,0 in order to be considered as a 'pass'.
- Students will get the possibility of turning in amended versions of the assignments in case of failing them.

How to use LLM's

- You are allowed to use LLM's for the assignment for the following purposes:
 - Stylistic
 - Additional 'discussion member'
 - Brainstorming
- You are **not** allowed to use LLM's for the assignment for the following purposes:
 - Factual information (LLM's are not reliable)
 - Generating text and using it directly

Whenever you use LLM's for the assignments, you have to specify **explicitly** how you used them

Deadlines

- Individual formative assignment: **27-11-2024**
- Mid-term group paper: **03-12-2024 23.59** (but see under)
- Final term paper (strict deadline):
 - **26-01-2025**
 - **06-04-2025** (resit)

The deadline for the mid-term paper is very much encouraged but not absolutely strict. This means that you are allowed by default to set a later deadline (no approval needed), but **you must communicate the new deadline to the lecturer by email.**

Deadline for the final term paper is **strict**

Online resources

- <https://plato.stanford.edu/entries/computer-science/>

Intermezzo

Distance

Natural scientific knowledge vs. Social scientific knowledge vs. Ethical / Philosophical knowledge

It is not either / or !!

All these notions are not binary, there is partial overlap
(depending on your understanding of the notions)

Predicting / Explaining vs. Understanding / Interpreting

What is an explanation?

What is a scientific explanation?

What is a social scientific explanation?

Is there something as an ethical / philosophical explanation?



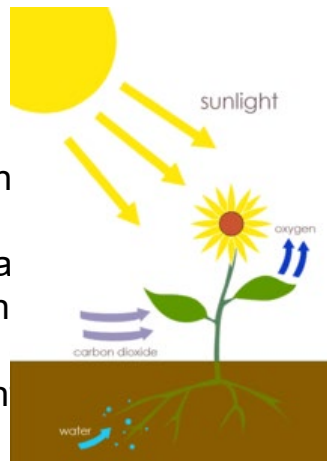
Vs.

Why is modern Western society individualistic?

An intelligible account of why something happens. On a covering law model, the [scientific explanation](#) of an event has the form of an [argument](#) whose conclusion is the event to be explained and whose premises include both antecedent circumstances and one or more [hypotheses](#).

- Scientific explanation according to Hempel: a phenomenon follows deductively from a general (deterministic) law (or inductively with high probability from a statistical law), with support from other laws and / or specific facts (DN/DS or IS)

Example: the plant on



Not enough sunligh
(fact 1)

Sunlight is necessa

Without photosynth

photosynthesis is

That's why my plan

hy?

does not get enough sun

(law 1)

s → plants die (or:

e) (law 2)

* it's not, this is just for argument's sake. No plants were injured in this philosophical experiment

**Do we need causation in social sciences? In
humanities?**

Erklären vs. Verstehen



Die Natur erklären wir, das Seelenleben verstehen wir.

(Wilhelm Dilthey)

gutezitate.com

Explaining vs. Interpreting

Explanations take part of a bigger system of beliefs. Interpretation, on the other hand, issues an answer to a question about explanation of meaning or about representation of a phenomenon whose comprehension falls outside somebody's background knowledge.

Ethical Theories: Introduction

With thanks to Roderick T. Long
Auburn Dept. of Philosophy

Subjectivism in Ethics

Ethical subjectivism is the idea that moral opinions are based on our feelings and nothing more. On this view, there is no such thing as “objective” right and wrong.

What Are Ethical Theories?

Explain what makes an action right or wrong

Ethical theories vs. particular ethical judgments

Analogy with scientific theories and
observations

Ethics \neq Morals!!

Ethics \neq Law!

Some Kinds of Ethical Theory

- Consequentialism
- Deontology
- Virtue Ethics
- Contractarianism
- Natural Law
- Relativism

Consequentialism

The rightness/wrongness of an action is determined by its *consequences*

action → result

Consequentialism

Example: utilitarianism

The right action is the one that promotes the greatest happiness of the greatest number (maximizes social utility)

Consequentialism

Another example: *ethical egoism*

The right action is the one that promotes the greatest happiness of the *agent* (maximizes the *agent's* utility)

Two Ethical Egoists



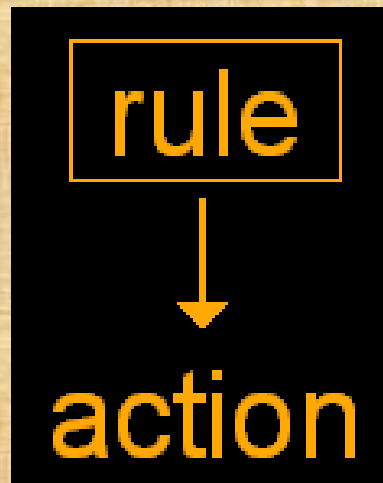
Benjamin Tucker (1854-1939)



Ayn Rand (1905-1982)

Deontology

The rightness/wrongness of an action is determined by *inherent* features of the action itself, or by an inherently valid *rule*



Deontology

If an action is of the wrong kind, it is forbidden, *no matter how good its consequences are*

Rejects both Utilitarianism and Ethical Egoism

“The end doesn’t justify the means.”

Divine Command Ethics

What makes an action right is the fact that *God commands it*.

(As opposed to the view that God commands things because they are right already.)

A form of relativism?

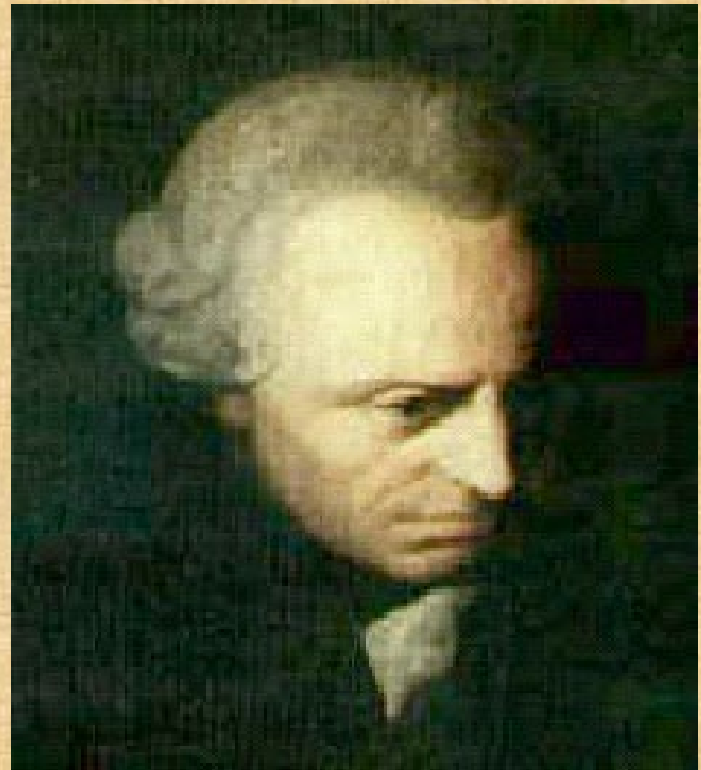


Deontology

Example: Kantianism

Right actions must be
universalizable and must
treat rational agents as
ends, not mere means
(trade-offs forbidden)

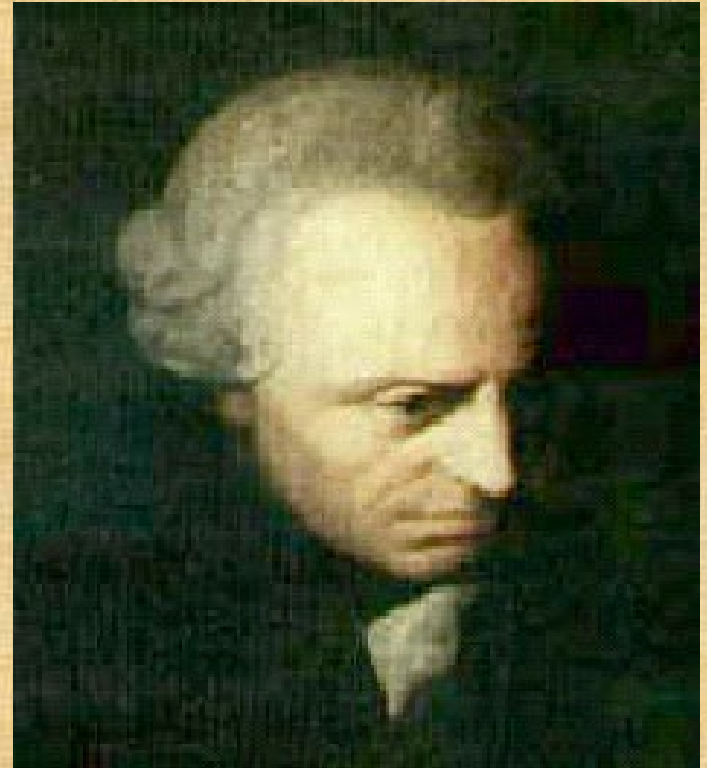
Immanuel Kant (1724-1804)



Kant's Deontology

Universalizability: must be possible to will the principle of your action for *everybody* without inconsistency.

Lying violates universalizability because lying presupposes and exploits a general practice of telling the truth

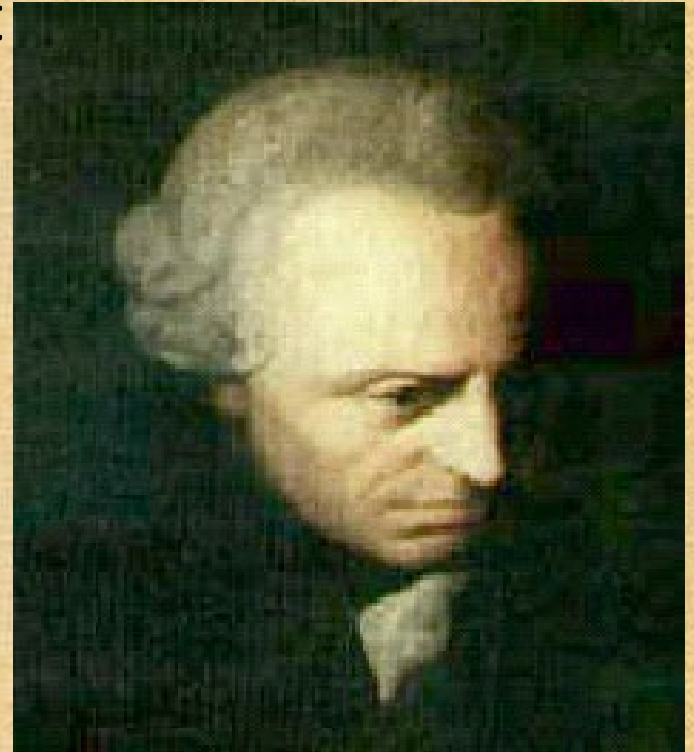


Kant's Deontology

Ends, not mere means: don't treat rational agents (others or yourself) as mere objects to be used or exploited.

Personhood is the basis of ethical value and can't be subordinated to other values.

Mustn't sacrifice the few even to benefit the many.



Virtue Ethics

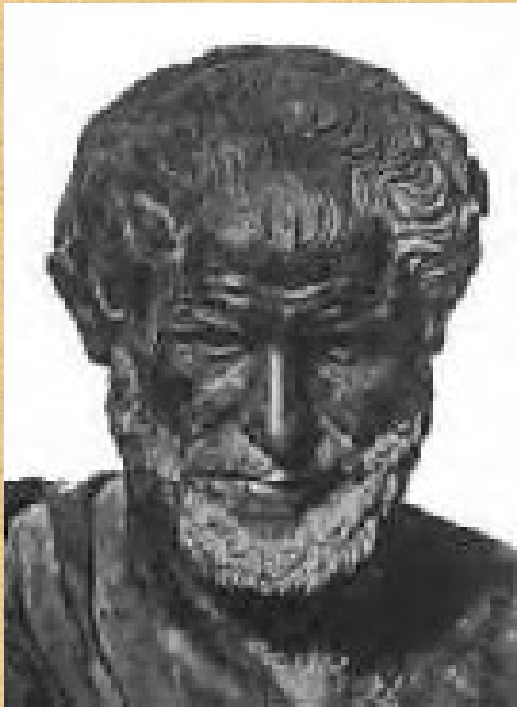
The rightness/wrongness of an action is determined by the *character traits* it expresses

character → **action**

Emphasize what kind of *person* you should be

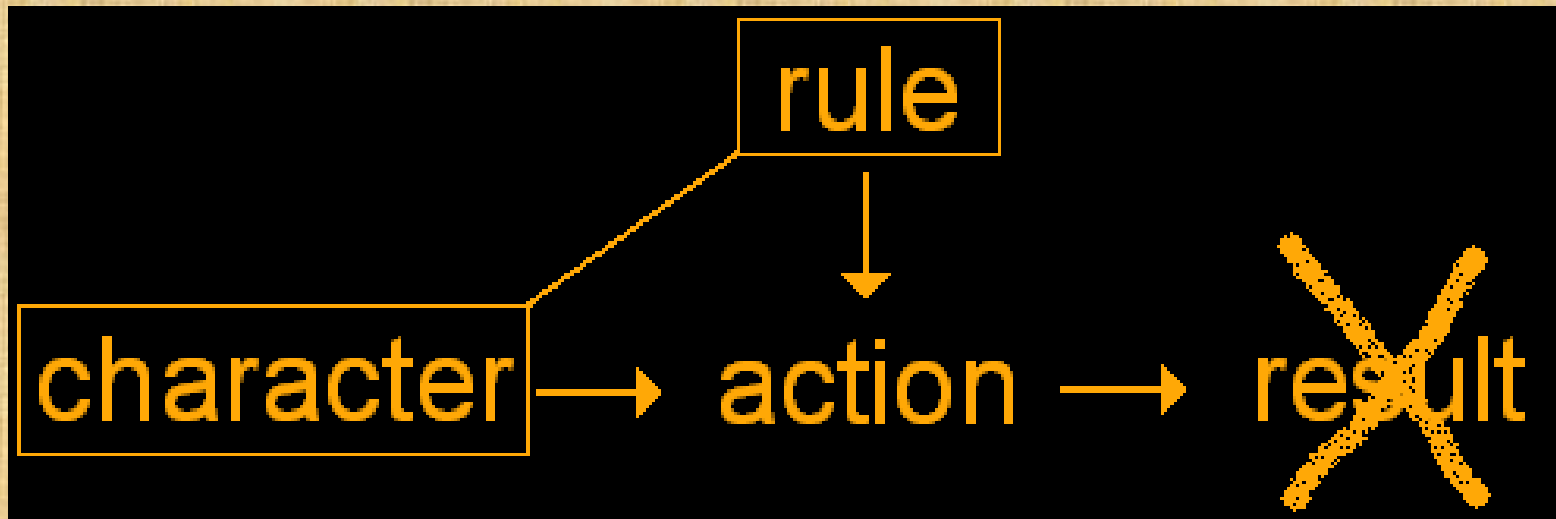
Virtue Ethics

Examples: Aristotelianism, Confucianism



Virtue Ethics

Virtue-ethicists tend to side with deontologists against consequentialists – though not always



How to apply these models to 'the
real world' of Computing and
Information Science?