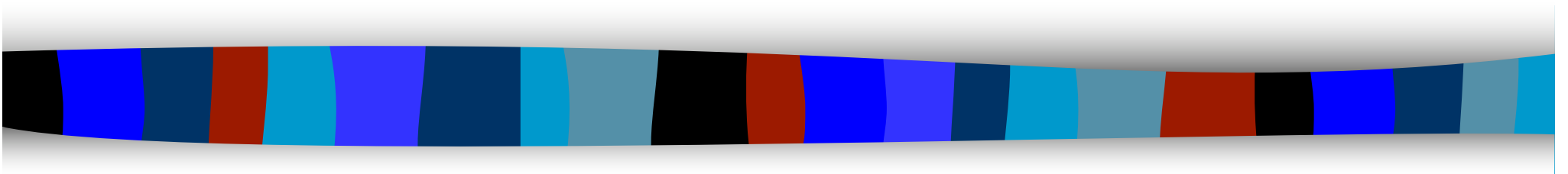


DAT585 Responsible interaction design: Theory and practice
1p3 VT25 (7.5 hp)

ETHICS, AN INTRODUCTION



Gordana Dodig-Crnkovic

<http://www.gordana.se>
<https://www.chalmers.se/en/persons/dodig/>
<https://www.mdu.se/staff?id=gdc01>

21 January 2025

Gordana Dodig-Crnkovic, Connections to Ethics

- ❑ Teaching Professional Ethics at Mälardalen University 2002-2016 to undergraduate and graduate students
- ❑ Teaching at CHALMERS Research Ethics & Sustainable Development, GFOK025 – PhD Course at Chalmers University of Technology (2014-2017) and Ethics in CIU281 Emerging trends and critical topics in interaction design
- ❑ Member of the Board of Informatics Europe with responsibility for Ethical and Social issues
<https://www.informatics-europe.org/>
- ❑ CHALMERS AI ETIKKOMMITTEE (Olle Häggström chair)
- ❑ Researcher in the network ETHICS4EU that works on introduction of Ethics on technical Universities in Europe. See <http://pgl.2f3.myftpupload.com/>
- ❑ Current topics of research interest: Ethics of autonomous cars, AI ethics (focus: autonomous AI systems) and robotic ethics.





Topics with Ethics Relevance

Emergent Technologies Focus

Data-related

- ❑ *Data provenance (attribution, background)*
- ❑ Data confidentiality
- ❑ Data privacy
- ❑ Public understanding of technology and protection of private data
- ❑ Data quality, property and equality
- ❑ Data-driven approaches
- ❑ Reproducibility of real time datasets
- ❑ Data is never “neutral”
- ❑ Data collection influences behavior
- ❑ Data-streching used in political purpose
- ❑ security and reliability of the IoT devices
- ❑ “Surplus data” from screening of patients that can reveal much more
- ❑ Transparency vs. quality

Sustainability-related

- ❑ Fuel economy, lower emissions, reduced take-off and landing noise
- ❑ Environmental contributions of battery production, use and disposal
- ❑ Environmental impact of massive electronic production
- ❑ Increasing demand of rare elements
- ❑ **Lack of life cycle assessment**
- ❑ **Rebound effect**
- ❑ Digital sustainability?



Topics with Ethics Relevance

Methodology Aspects

- ❑ Values
- ❑ The method
- ❑ Epistemic problems related work - acknowledging its limitations
- ❑ Reducing reality into a model, with loss of depth and variety of perspectives?
- ❑ Marginalizing the designer in the design process?
- ❑ Level of transparency is acceptable for an automated tool?
- ❑ Should we rely on automated tools if we consider the intrinsic limits of the learning process?
- ❑ Data-driven development methodology
- ❑ genetic discrimination
- ❑ genetic modification/engineering
- ❑ Tradeoff between safety and innovation
- ❑ OPEN SCIENCE
- ❑ Simulation compared to real experiments
- ❑ Making connection between qualitative and quantitative information
- ❑ Application of the complex system in Landscape studies
- ❑ Reproducibility
- ❑ System's performance almost always evaluated in isolation [QUESTION OF INTERPRETATION OF RESEARCH RESULTS]
- ❑ Authors do not verify their results thoroughly enough, or they hide complications
- ❑ THE REVIEW PROCESS IS NOT DOUBLE-BLIND
- ❑ Presentation of results (overemphasizing of their importance)
- ❑ Value of an intervention compared to other applications



Topics with Ethics Relevance

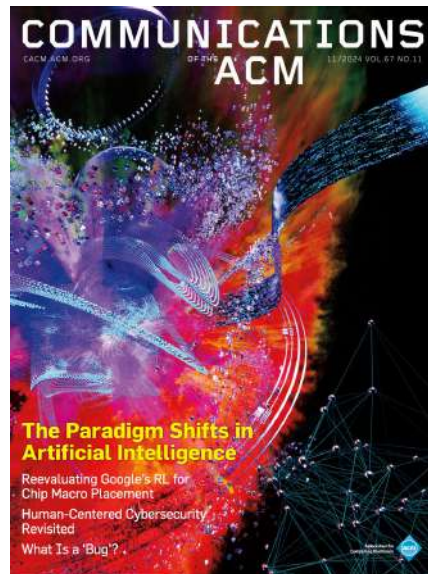
Social Aspects

- Cultural diversity
- Professional conduct
- Gender equality
- Quality of life
- Impact of technology on society at large
- Is the purpose of the analysis relevant enough to expose the users to privacy loss?
- Designing technology that could reduce the need for human employees?
- Entrusting the machine to define culturally relevant spaces for our cities?
- Legal issues related to copyright infringement
- Involving stakeholders/users
- Trust between stakeholders?
- Professional societies/organisations and Codes of Ethics
- Popular presentation of research and public opinion about research
- Informing the politics about possibilities and challenges of research

PROFESSIONAL ORGANISATIONS

Communications of the ACM (CACM)

ACM = Association for Computing Machinery



<https://tinyurl.com/4bjr4vaz>

<https://vimeo.com/1021039731>

27 **Inside Risks**
The Future of Misuse Detection
From lessons learned
to new directions.
By Peter G. Neumann and Ulf Lindqvist

29 **Economic and Business Dimensions**
Free Speech vs. Free Ride:
Navigating the Supreme Court's
Social Media Paradox
Regulating platforms.
By Marshall Van Alstyne

32 **Opinion**
What Is a 'Bug'?
On subjectivity, epistemic power,
and implications for computing
research.
*By David Gray Widder
and Claire Le Goues*

35 **Opinion**
Mentorship Lessons from Growing
a Developing Country Journal
Experiences developing and using
a quality open access journal
to mentor emerging academics.
By Philip Machanick

Topics that Interest me Currently

Ethics of AI & Intelligent Robotics



<https://cacm.acm.org/research/self-designing-software>
Self-Designing Software

<https://citp.princeton.edu/event/ai-and-ethics/>



Generative AI ethics – some concerns

- Distribution of harmful content
- Copyright and legal issues
- Data privacy violations
- Sensitive information disclosure
- Amplification and perpetuation of the existing bias
- Workforce issues
- Data provenance
- Lack of explainability and interpretability

<https://www.techtarget.com/searchenterpriseai/tip/Generative-AI-ethics-8-biggest-concerns>

Topics that Interest me Currently

Ethics in Autonomous Cars

Especially Decision Making by Autonomous Intelligent Systems

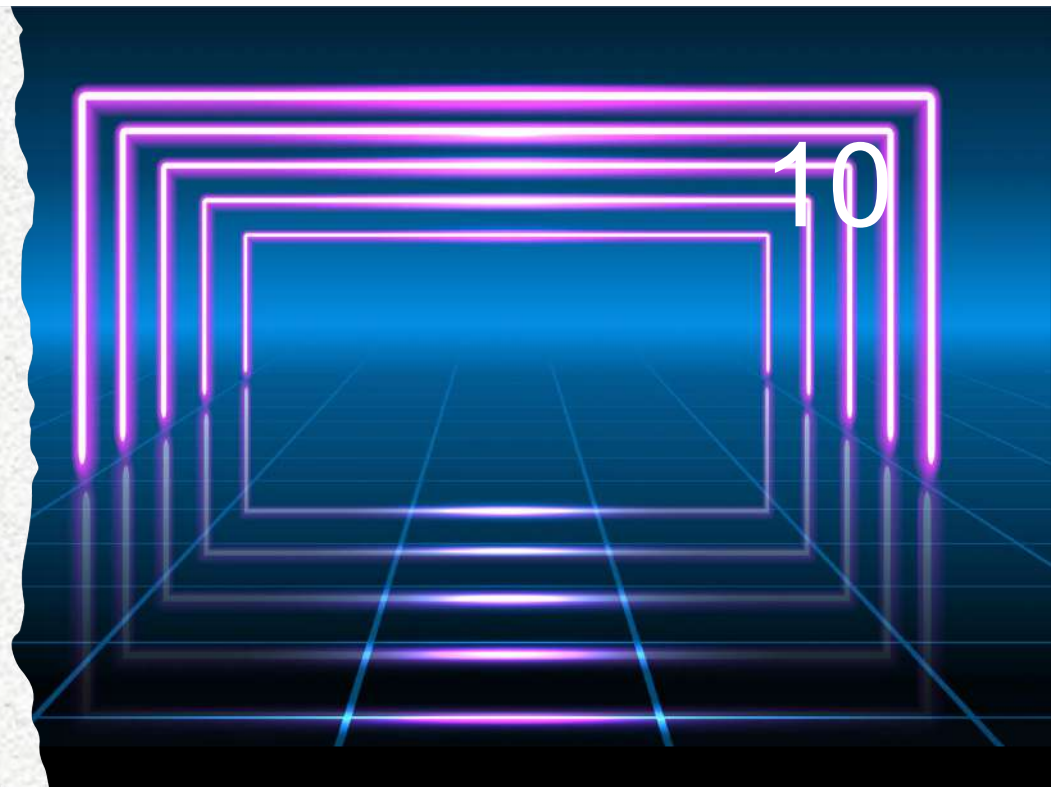


<https://webcasts.weforum.org/widget/1/china2018?p=1&pi=1&th=1&id=a0W0X00000ClawBUAT&auto=1>
Decision making by algorithms

AI-Driven Scientific Discovery & AI in Education

<https://cacm.acm.org/opinion/the-5th-paradigm-ai-driven-scientific-discovery> The 5th Paradigm: AI-Driven Scientific Discovery

<https://cacm.acm.org/blogcacm/ai-in-education-a-call-for-researchers-to-engage-with-policy/> AI in Education: A Call for Researchers to Engage with Policy



Ethical Issues Move Technology Forward

Klimat och säkerhet driver på teknikfrågorna

VALET 2018. Teknikfrågorna står på en del områden mitt i den politiska debatten inför årets val. Ny Teknik har ställt 14 frågor till riksdagspartierna.

LÄS MER



Debatten om flyget tar ny fart

VALET 2018. Miljöpartiet vill inte bara behålla flygskatten, utan även höja den.

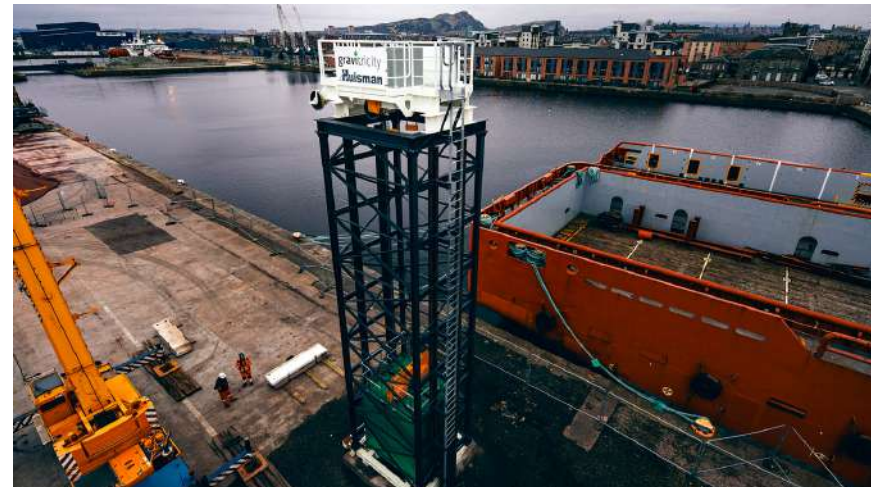
LÄS MER



Hållbart och underhållsfritt – därför väljer Linder betong för sina lokaler

ANNONS. "Betong har många fördelar, det är ett bestående material och det kräver inget underhåll."

Gravity battery in the news today



Gravity battery in the design ethics

<https://vimeo.com/235547814> Ethics for design

CACM, Emergent Technologies, Ethics and Society

- ❑ INFORMATICS EUROPE AND ACM EUROPE COUNCIL [Regulating Automated Decision Making](#)
- ❑ CERF'S UP [Traceability](#) -workshop on [cybersecurity](#) was how to preserve the freedom and openness of the Internet while protecting against the harmful behaviors
- ❑ LETTERS TO THE EDITOR [Encourage ACM to Address U.S. Election Integrity](#)
- ❑ In the spirit of Moshe Y. Vardi's call for ACM to ". . . be more active in addressing social responsibility issues raised by computing technology," we urge the ACM U.S. Public Policy Council to undertake a study of the technological ...*CACM Staff*
- ❑ BLOG@CACM [Assessing Responsibility for Program Output](#)
- ❑ We lack an easy way to indicate that algorithms do not make decisions and are not biased; programmers do, and are. *Robin K. Hill*
- ❑ [Animals Teach Robots to Find Their Way](#)
- ❑ Navigation research demonstrates bio-machine symbiosis. *Chris Edwards*
- ❑ [Electronics Are Leaving the Plane](#) Stacking chips and connecting them vertically
- ❑ [Broadening the Path for Women in STEM](#) - Organizations work to address 'a notable absence of women in the field.'*Esther Shein*
- ❑ GLOBAL COMPUTING [Designing Sustainable Rural Infrastructure Through the Lens of OpenCellular](#)
- ❑ EDUCATION [Providing Equitable Access to Computing Education](#)
- ❑ Seeking the best measures to reach advantaged and less-advantaged students equally. *Mark Guzdial, Amy Bruckman*
- ❑ COLUMN: CODE VICIOUS [Every Silver Lining Has a Cloud](#)



POINT/COUNTERPOINT: DEMOCRACY AND E-DEMOCRACY

- Point: [Foundations of E-Democracy](#)

Considering the possibility of achieving an e-democracy based on long-established foundations that strengthen both real-world democracies and virtual Internet communities. Ehud Shapiro

- Counterpoint: [E-Democracy Won't Save Democracy](#). Democracy Will Save Democracy

Increased technology is not the solution to the fundamental issue of declining democratic culture. Douglas Schuler

PRACTICE Algorithms Behind Modern Storage Systems

Different uses for read-optimized B-trees and write-optimized LSM-trees. Alex Petrov

Research for Practice: Prediction-Serving Systems

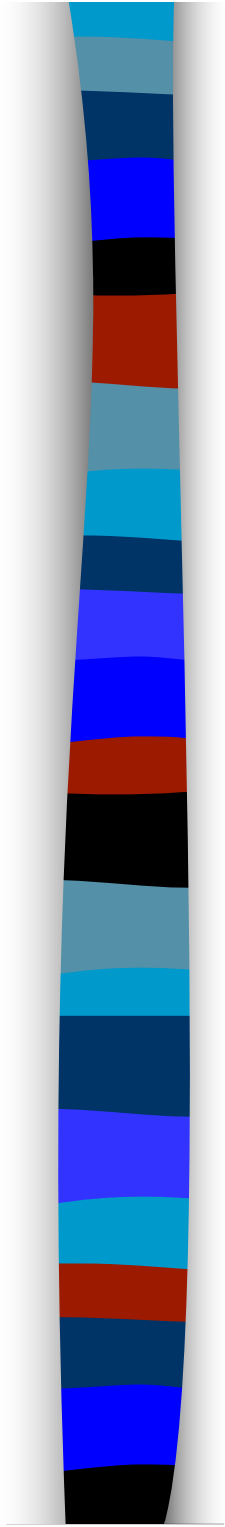
- [What happens when we wish to actually deploy a machine learning model to production?](#) Dan Crankshaw, Joseph Gonzalez, Peter Bailis

- Consistently Eventual

- For many data items, the work never settles on a value. Pat Helland

CONTRIBUTED ARTICLES [How to Teach Computer Ethics through Science Fiction](#)

- [Science fiction in particular offers students a way to cultivate their capacity for moral imagination.](#) Emanuelle Burton, Judy Goldsmith, Nicholas Mattei

- 
- ❑ Queueing theoretic models can guide design trade-offs in systems targeting tail latency, not just average performance. Christina Delimitrou, Christos Kozyrakis
Pages 65-72 SECTION: REVIEW ARTICLES Multiparty Privacy in Social Media
 - ❑ Online privacy is not just about what you disclose about yourself, it is also about what others disclose about you. Jose M. Such, Natalia Criado
 - ❑ SECTION: RESEARCH HIGHLIGHTS Technical Perspective: Graphs, Betweenness Centrality, and the GPU
 - ❑ "Accelerating GPU Betweenness Centrality" by McLaughlin and Bader
 - ❑ We present a hybrid GPU implementation that provides good performance on graphs of arbitrary structure rather than just scale-free graphs as was done previously. Adam McLaughlin, David A. Bader
 - ❑ COLUMN: LAST BYTE Deadlock
 - ❑ Upgraded with new instructions, [my AI aims to debug its original programmer](#), along with his home planet. William Sims Bainbridge



Ethics high on the agenda: Example CACM 2023 05

- ❑ [ACM for the Public Good](#)

The ACM 4.0 Initiative aims to lay the foundations of ACM for the next 25 years on issues of service to society and to ACM members, ACM membership, ACM finances, and internal processes. *Moshe Y. Vardi*

- ❑ [A Career Built on Using Technology to Help Others](#)

Everyone deserves the access and opportunity to have a good and fulfilling life. Technologies can only contribute toward this goal when they are designed from an understanding of what makes a life good for the people concerned ... *Jules Maitland*

- ❑ [Women in Computer Science Are Making Strides](#)

Computer science is still not a level playing field for those women who majored in it and choose to pursue it as a career. *Esther Shein*

- ❑ [Do the Right Thing](#)

Exploring the intersection of legal compliance and ethical judgment. *Kendra Albert, James Grimmelmann*

- ❑ [Updates, Threats, and Risk Management](#)

Revisiting a recent column considering security updates. *Steve Lipner, John Pescatore*

- ❑ [Ethics as a Participatory and Iterative Process](#)

Facilitating ethical reflection, inquiry, and deliberation. *Marc Steen*

- ❑ [NSF on Chien's Grand Challenge for Sustainability](#)

This Viewpoint focuses on ways the computing community can contribute broadly to environmental sustainability and identifies NSF Directorate for Computer and Information Science and Engineering research programs supporting these ... *Nina Amla, Dilma Da Silva, Michael Littman, Manish Parashar*

<https://cacm.acm.org/magazines/2023/5>



Ethics high on the agenda: Example CACM 2024 04

- ❑ Governments Setting Limits on AI
- ❑ Many countries and regions are considering, or trying to implement, regulations on the training and use of artificial intelligence. Esther Shein
- ❑ Abusing AI for Advertising
- ❑ Will generative artificial intelligence accelerate the growth of made-for-advertising sites?...
Keith Kirkpatrick
- ❑ How Generative AI Fits into Knowledge Work
- ❑ Seeking to influence how generative artificial intelligence affects various professions. *Mari Sako*
- ❑ Generative AI and CS Education
- ❑ Increased knowledge sharing is helping CS educators and researchers accelerate change in computing education. Maggie Johnson
- ❑ Increasing Diversity, Equity, and Inclusion Awareness: An Example from India
- ❑ Overcoming barriers inhibiting greater inclusion and understanding. Hemangee K. Kapoor and David A. Patterson
- ❑ Leveraging Professional Ethics for Responsible AI
<https://dl.acm.org/doi/pdf/10.1145/3625252>
- ❑ Inherent Limitations of AI Fairness
AI fairness should not be considered a panacea: It may have the potential to make society more fair than ever, but it needs critical thought and outside help to make it happen.
Maarten Buyl and Tijl De Bie
Computing Education in the Era of Generative AI
Paul Denny et al.



Why I do not talk about Ethical **dilemmas**

Naming decision situations **dilemmas** underlines the **impossibility** to find an ideal (perfect, unique and provable) or **acceptable** solution.

However, engineering and design requires decision making in the real world where the solution is the **best available** solution under given circumstances. Perfect is the enemy of good (Voltaire). "Golden mean" Aristotle. ("Lagom är bäst" Swedish)

Ethics is huge

What this lecture can do is opening the window with a view



<https://www.flickr.com/photos/mercolino/3424888900>



INTRODUCTION TO ETHICS

- Identifying Ethical Issues

Ethics & Morality, Normative Systems, Societal Values, Expectations

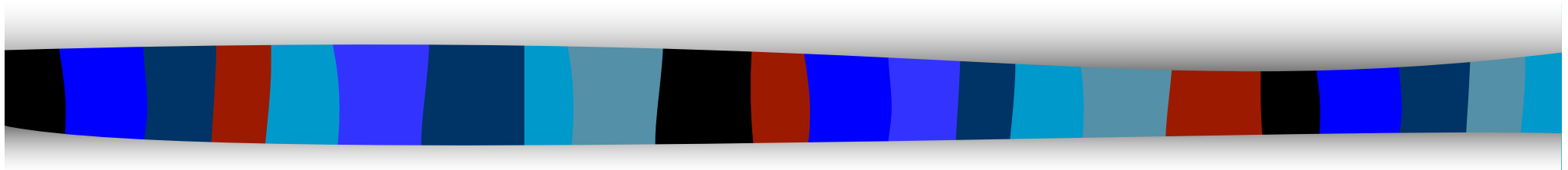
- Basic Ethical Orientations Overview

- “Policy Vacuums” & CS Curriculum

- VALUES

- Professional And Ethical Responsibilities

Identifying Ethical Issues



Based on: Lawrence M. Hinman, Ph.D.
Director, The Values Institute
University of San Diego



Ethics and Morality

What are they?

The terms **ethics** and **morality** are often used interchangeably - indeed, they usually can mean the same thing, and in casual conversation there isn't a problem with switching between one and the other.

However, there is a distinction between them in philosophy!



Ethics and Morality

Etymology

Morality and ethics have same roots, **mores** which means manner and customs from the Latin and **etos** which means custom and habits from the Greek.

Robert Loudon, Morality and Moral Theory



Ethics and Morality

What are they?

Strictly speaking, **morality** is used to refer to what we would call **moral conduct** while **ethics** is used to refer to the **formal study** of moral conduct.

Ethics is also often called "**moral philosophy.**"



Ethics and Morality

- ❑ **Morality:** first-order set of beliefs and practices about how to live a good life.
- ❑ **Ethics:** a second-order, conscious reflection on the adequacy of our moral beliefs.



MORALITY vs. ETHICS

□ MORALITY - PRAXIS

□ ETHICS - THEORY



Practical Ethics

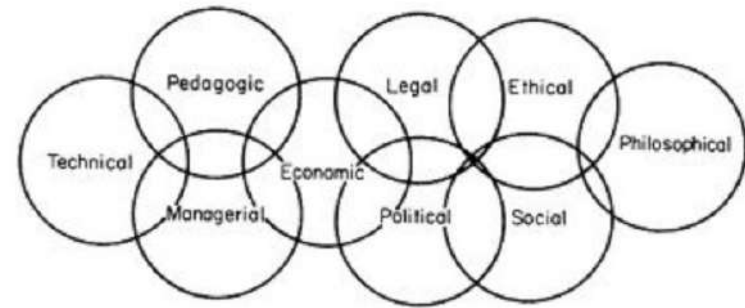
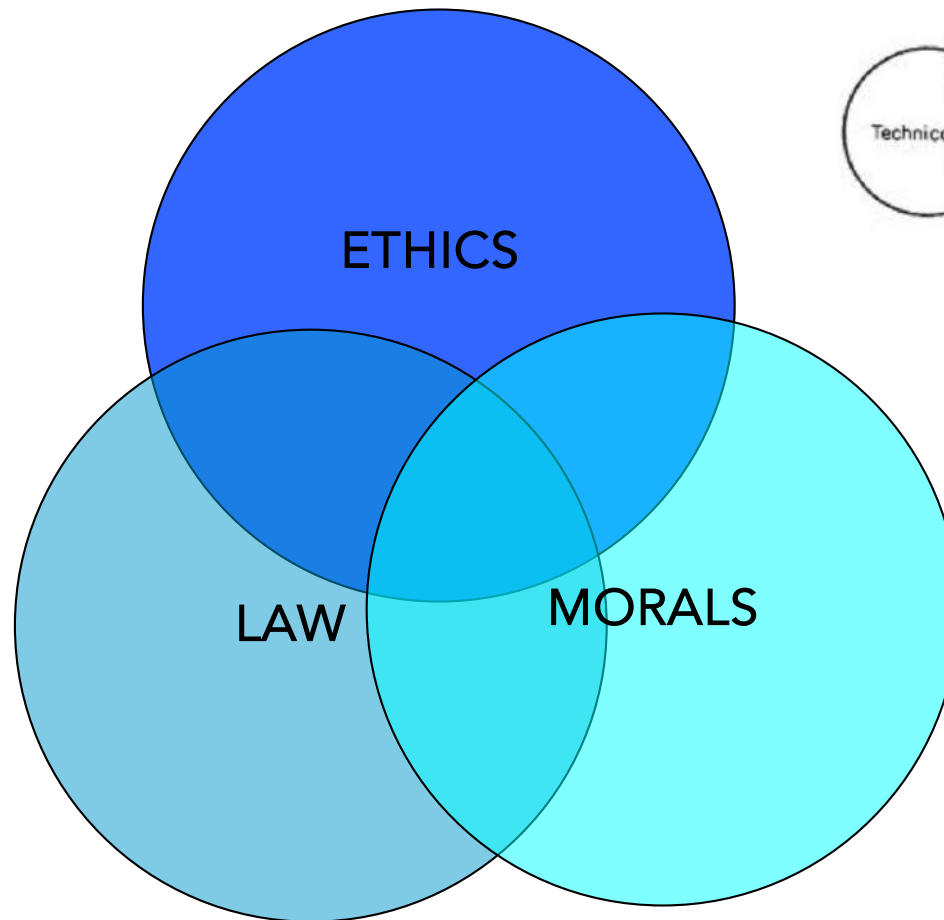
- Engineering ethics
- Ethics of science
- Bioethics
- Medical ethics
- Environmental ethics
- Public ethics
- Media ethics
- Political ethics



Normative Systems

- Games
- Laws
- Religions
- Morality
- Habits

Societal Values



<http://socialissues.cs.toronto.edu/>



Etics Continuum

Ethics as an Ongoing Conversation

- ❑ World changes continually, and we have to interpret/construe it over and over again.
- ❑ We come back to ideas again and again, finding new meaning in them.
- ❑ Professional discussions of ethical issues in journals.



What to Expect from Ethics?

Functions of theory:

- ❑ Describe (What?)
- ❑ Explain (Why?)
- ❑ Prescribe (How?)
- ❑ Give strength (Support)
 - Open new possibilities and insights
 - Wonder

Basic Ethical Orientations Overview



<https://cacm.acm.org/opinion/ethics-as-a-participatory-and-iterative-process/> Ethics as a Participatory and Iterative Process
Steen, Marc (2022) Ethics for People Who Work in Tech (1st ed.). Chapman and Hall/CRC. <https://doi.org/10.1201/9781003088776>



On What Ethical Basis Do We Make Moral Decisions

- ❑ Divine Command Theories
- ❑ Virtue Ethics
Maximize virtue, minimize vices
- ❑ Consequentialism (Utilitarianism)
The action is best, which procures the greatest happiness for the greatest number...



On What Ethical Basis Do We Make Moral Decisions? (2)

□ The Ethics of Duty (Deontological* Ethics)

- Immanuel Kant's Moral Theory.
The categorical imperative: -- "Act so that the maxim [determining motive of the will] may be capable of becoming a universal law for all rational beings."

□ Relational Ethics

- Relational ethics situates ethics within the context of relationships and respectful engagement characterized by recognition, support, and acceptance of the other and their experiences. **Feminist and Care perspectives are Relational ethics.** Major moral traditions in this approach are Confucianism in East Asia, Ubuntu in sub-Saharan Africa. It includes **Aspects of Environmental ethics and Animal ethics** (see: New York Declaration on Animal Consciousness) as well.

* 'deon' = duty



On What Ethical Basis Do We Make Moral Decisions? (3)

- ❑ The Ethics of Natural and Human Rights
all people are created ...with certain basic rights
- ❑ Social Contract Ethics (We agree to be civil to one another under threat of punishment from a government established for this purpose. [Plato, Republic. Thomas Hobbes])
- ❑ Evolutionary Ethics (Being social increases our chances to survive)
- ❑ Ethical Egoism ("Machiavellism" – "The end justifies the means"
Niccolo Machiavelli (book: The Prince) - justification of war)

Moral Reason vs. Moral Feeling

- Morality is strictly a matter of rational judgment:

Samuel Clarke (1675-1729)

- Since the time of Plato: moral truths exist in a spiritual realm.
- Moral truths like mathematical truths are eternal.



Samuel Clarke
(1675-1729)

- Morality is strictly a matter of feeling (emotion):

David Hume (1711-1729)

- We have a moral sense



David Hume
(1711-1729)

Policy Vacuums Created by Emerging Technologies

The term “policy vacuum”, first used in Moor, James H, 1985. “What is Computer Ethics”, Metaphilosophy 16(4): 266-75.



The Question of Values



Traditionally, technology developed with little attention to its impact on human values. It is rapidly changing with the advent of AI!



Computing Technology and Human Values (1)

We want to:

- ❑ Understand the impact of computing technology on human values
- ❑ Minimize the damage that such technology can do to human values, and
- ❑ Identify ways to use computer technology to advance human values.



Computing Technology and Human Values (2)

- ❑ How can we work to make computing technology advance human values?
- ❑ To integrate computing technology and human values so that the technology advances and protects human values, rather than damaging them.



Why Learn Ethics? (1)

- ❑ Convey a sense of professional responsibility not covered in other courses at technical universities
- ❑ Deal with computing technology as a service to other human beings.

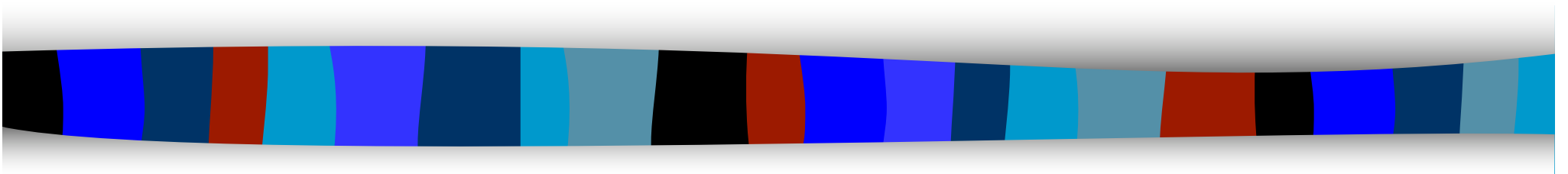
(Donald Gotterbarn 1991)



Why Learn Ethics? (2)

- ❑ Sensitize students to computer ethics issues
- ❑ Provide tools and methods for analyzing cases
- ❑ Provide practice in applying the tools and methods to actual or realistic cases
- ❑ Develop in the student good judgment and helpful intuitions -- ethical autonomy.

Professional and Ethical Responsibilities





Engineering as Social Experimentation

“All products of technology present some potential dangers, and thus engineering is an inherently risky activity. In order to underscore this fact and help in exploring its ethical implications, we suggest that engineering should be viewed as an experimental process. It is not, of course, an experiment conducted solely in a laboratory under controlled conditions. Rather, it is an experiment on a social scale involving human subjects.”

Ethics in Engineering, Martin Mike and Schinzinger Roland, McGraw-Hill,
2005

<https://www.amazon.com/Ethics-Engineering-Mike-W-Martin/dp/0072831154>

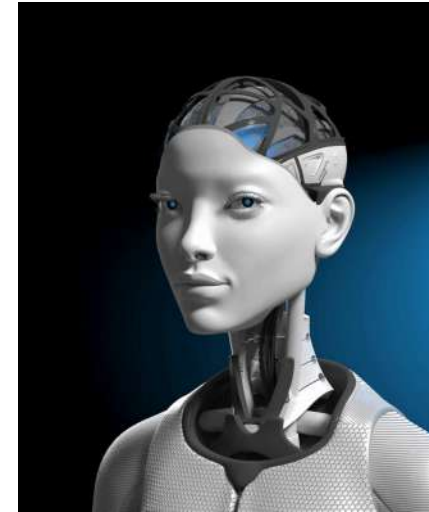


Emerging Technologies

1. Artificial Intelligence (AI) in IxD and its ethical aspects
2. Robots in IxD and their ethical aspects
3. Internet of Things (IoT) in IxD and its ethical aspects
4. Virtual Reality (VR) in IxD and its ethical aspects
5. Augmented Reality in IxD and its ethical aspects
6. Mixed Reality in IxD and its ethical aspects
7. Generative Design
8. 3D printing (additive manufacturing) in IxD and its ethical aspects
9. Active Materials in IxD and their ethical aspects
10. Nano-technologies in IxD and their ethical aspects
11. Neuroscience and neuro-technologies (brain-computer interfaces) in IxD and their ethical aspects
12. Biomimicry in IxD and their ethical aspects

Intelligent Technologies

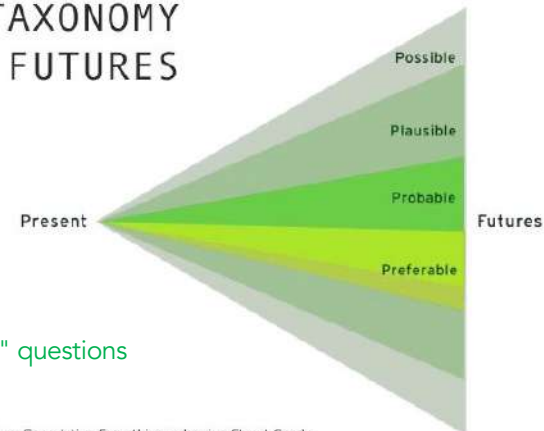
- ❑ Intelligent Assistants & Co-pilots
- ❑ Intelligent Infrastructure
- ❑ Intelligent Robots & Softbots
- ❑ Intelligent Transportation
- ❑ Intelligent Cities
- ❑ Ambient Intelligence
- ❑ Intelligent IoT
- ❑ Intelligent Decision-Making Algorithms
(introduced into particular technologies as self-driving vehicles but also into democratic institutions of governance, law, etc.)



SPECULATIVE DESIGN



A TAXONOMY OF FUTURES



"what if" questions

Redrawn from *Speculative Everything* redrawing Stuart Candy

Table of Contents:

- Beyond radical design?
- A map of unreality
- Design as critique
- Consuming monsters: big, perfect, infectious
- A methodological playground: fictional worlds and thought experiments
- Physical fictions: invitations to make believe
- Aesthetics of unreality
- Between reality and the impossible
- Speculative everything.

NORMATIVE APPROACHES TO AI ETHICS

RESPONSIBLE AI: WHY CARE?

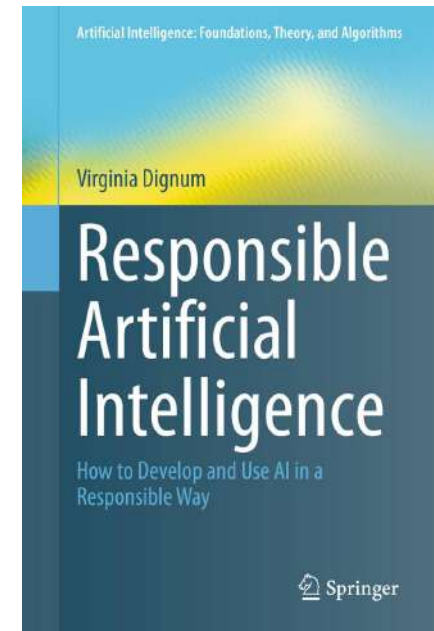
- AI systems are designed to act autonomously in our world
- Eventually, AI systems will make *better* decisions than humans in specific well-defined domains

AI is designed by humans (currently),
it is an artefact

- "We need to be sure that the purpose put into the machine is the purpose which we really want" (Alignment problem)

Norbert Wiener, 1960 (Stuart Russell) King Midas, c540 BCE

Based on: Responsible Artificial Intelligence, Virginia Dignum,
<https://www.youtube.com/watch?v=BqwVRzKVz30>





ETHICS & DESIGN

Ethics **in** Design (doing it right)

- Ensuring that development processes take into account ethical and societal implications of AI as it integrates and replaces traditional systems and social structures

Ethics **by** Design (doing right thing)

- Integration of ethical reasoning abilities as part of the behaviour of artificial autonomous systems

Ethics **for** Design(ers)

- Research integrity of researchers and manufacturers, and certification mechanisms

TAKE AWAY MESSAGE ON RESPONSIBLE AI

- AI systems are artefacts built by us for our purposes.
 - Our decision, our responsibility (currently)
- AI influences and is influenced by our social systems
 - Design is never value-neutral
 - _ Society shapes and is shaped by design
- Knowing ethics is not being ethical
 - Not for us and not for machines
 - Different ethics – different decisions
- Artificial Intelligence needs ART (Accountability, Responsibility, Transparency)
 - o Be explicit!



Technology Policy Council Chair,
Virginia Dignum

Virginia Dignum has been appointed Chair of ACM's Technology Policy Council, which addresses global technology policy. Dignum is a Professor of Computing Science / Responsible Artificial Intelligence and the Director of the AI Policy Lab at Umeå University, Sweden. She is also a member of the United Nations High Level Advisory Body on AI, whose report was released during the AI with Purpose Summit as part of the Science Summit at the UN General Assembly. She is also Senior Advisor to the Wallenberg Foundations.



ASSIGNMENT OF RESPONSIBILITY

Time perspective

- Short-term perspective
We, humans, decide
- Middle-term perspective
AGI & We co-decide
- Long-term perspective
Superintelligence? Who decides?

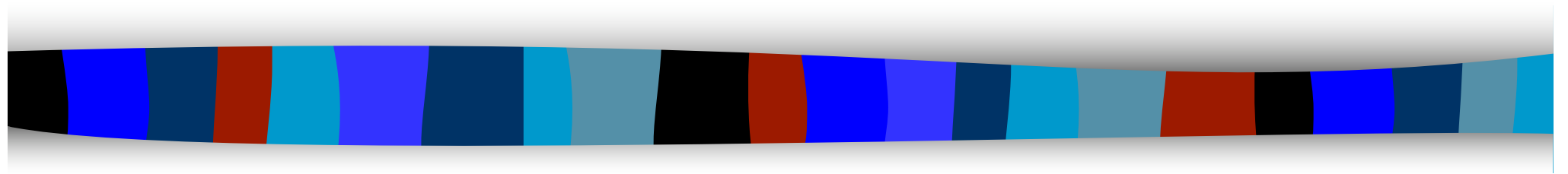
- Requirements engineers
- Designers, Developers
- Programmers
- Deployment engineers, testers
- Maintenance engineers

Levels of AI

- ANI (Narrow AI)
- AGI (Artificial General Intelligence)
- ASI (Artificial Super Intelligence)

Stakeholders

- Politicians
- Legislators
- Businesses



Work on AI regulation

SYSTEMS OF RULES/LEGISLATION

Recent work on AI regulation

United Nations report (2023)
"Governing AI for Humanity"



https://www.un.org/sites/un2.un.org/files/governing_ai_for_humanity_final_report_en.pdf

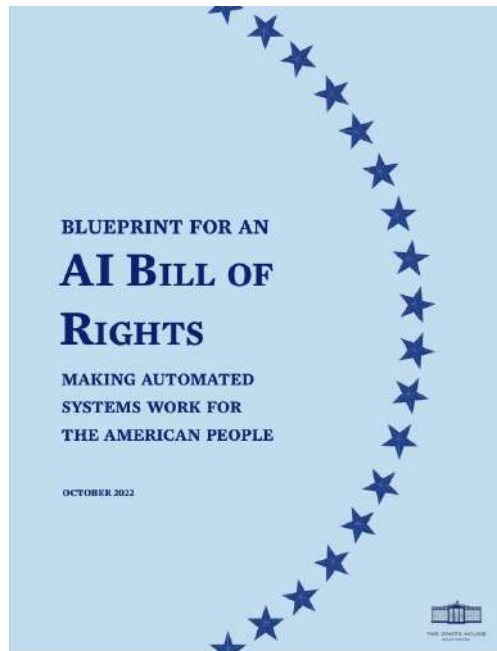
UNESCO 2022

'Recommendation on the Ethics of Artificial Intelligence'



UNESCO: The United Nations Educational, Scientific and Cultural Organization
<https://www.unesco.org/en/artificial-intelligence/recommendation-ethics>
<https://www.unesco.org/en/articles/recommendation-ethics-artificial-intelligence>

USA "AI Bill Of Rights" (2022) - principles



<https://www.whitehouse.gov/wp-content/uploads/2022/10/Blueprint-for-an-AI-Bill-of-Rights.pdf>

The US AI Bill of Rights outlines principles, including that people have a **right to control how their data is used and to not be discriminated against by unfair algorithms.**

It is a white paper, which does not have the force of law.

It's primarily aimed at **the federal government and could influence which technologies government agencies acquire**, or help parents, workers, policymakers, and designers **ask tough questions about artificial intelligence systems.**

However, **it can't constrain large tech companies**, which arguably play a bigger role in shaping future applications of AI.

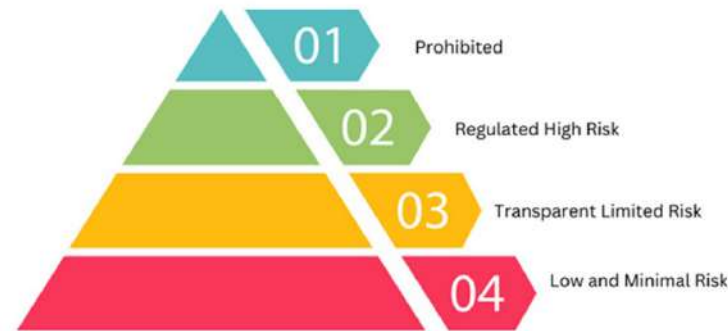
EU "AI Act" (2024)

The world's first AI legislation

AI Act, European Commission. Shaping Europe's digital future

<https://digital-strategy.ec.europa.eu/en/policies/regulatory-framework-ai>

Figure 1—Pyramid of Risk



Source: [ISACA](#)

The European Parliament granted final approval of the EU Artificial Intelligence Act on March 13, 2024, by a vote of 523 for passage, 46 against, and 49 abstaining. The Act faces a final step – approval by EU member states – as its provisions gradually take effect.

PROFESSIONAL ORGANISATIONS

IEEE* (Institute of Electrical and Electronics Engineers) on future intelligent autonomous systems

ETHICALLY ALIGNED DESIGN



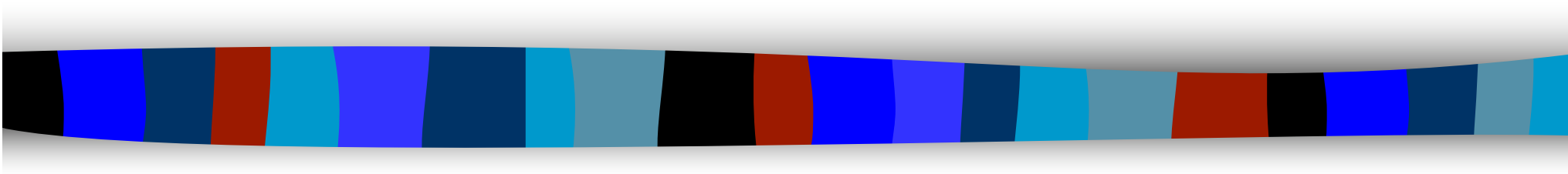
The IEEE Global Initiative for Ethical Considerations
in Artificial Intelligence and Autonomous Systems

https://standards.ieee.org/wp-content/uploads/import/documents/other/ead_v2.pdf

Prioritizing human well being in the age of artificial intelligence: <https://youtu.be/z5yZU8tp9W8>
(5:56)

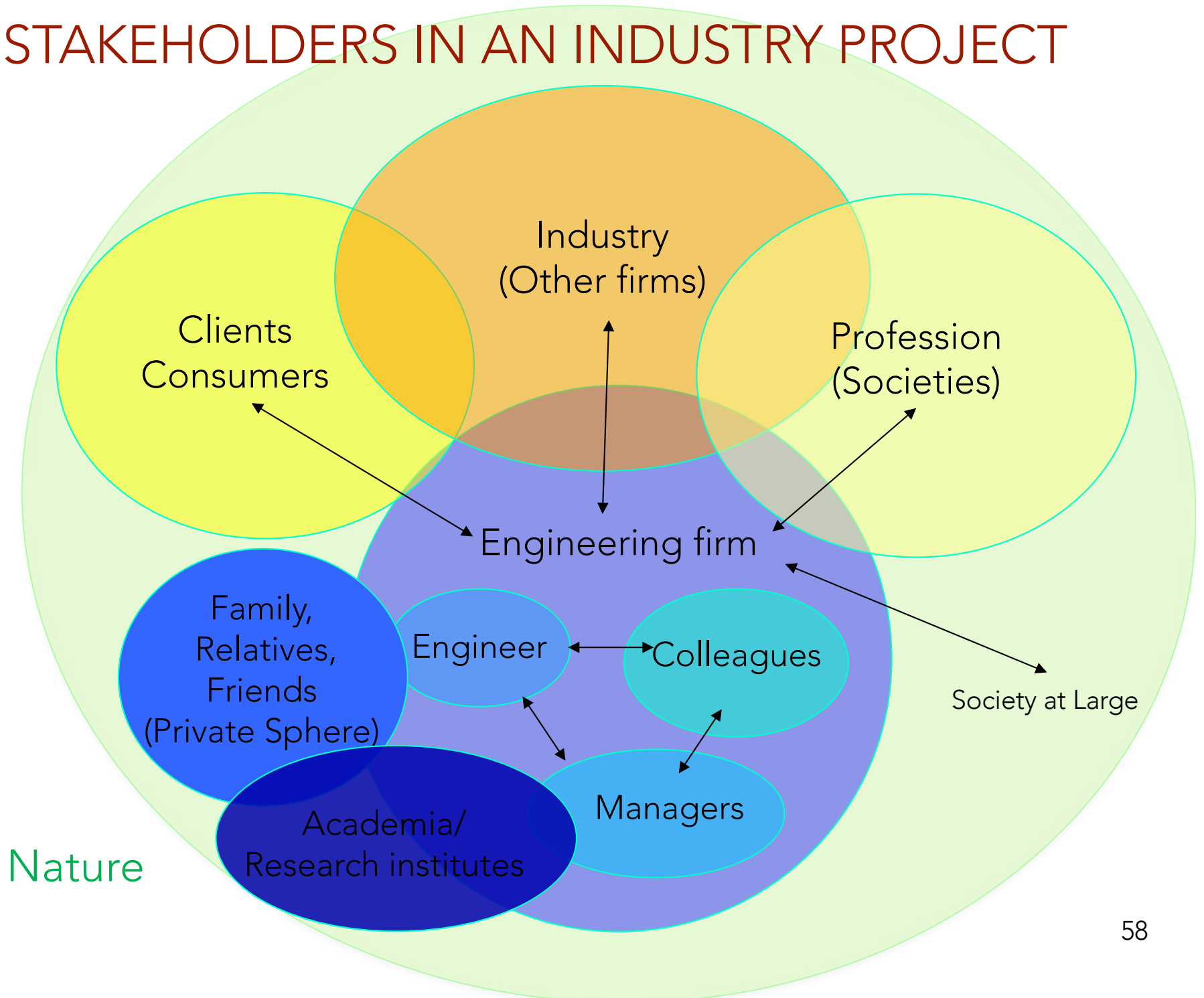
*IEEE (USA) is the world's largest technical professional organization dedicated to advancing technology for the benefit of humanity.

<https://techethics.ieee.org/>

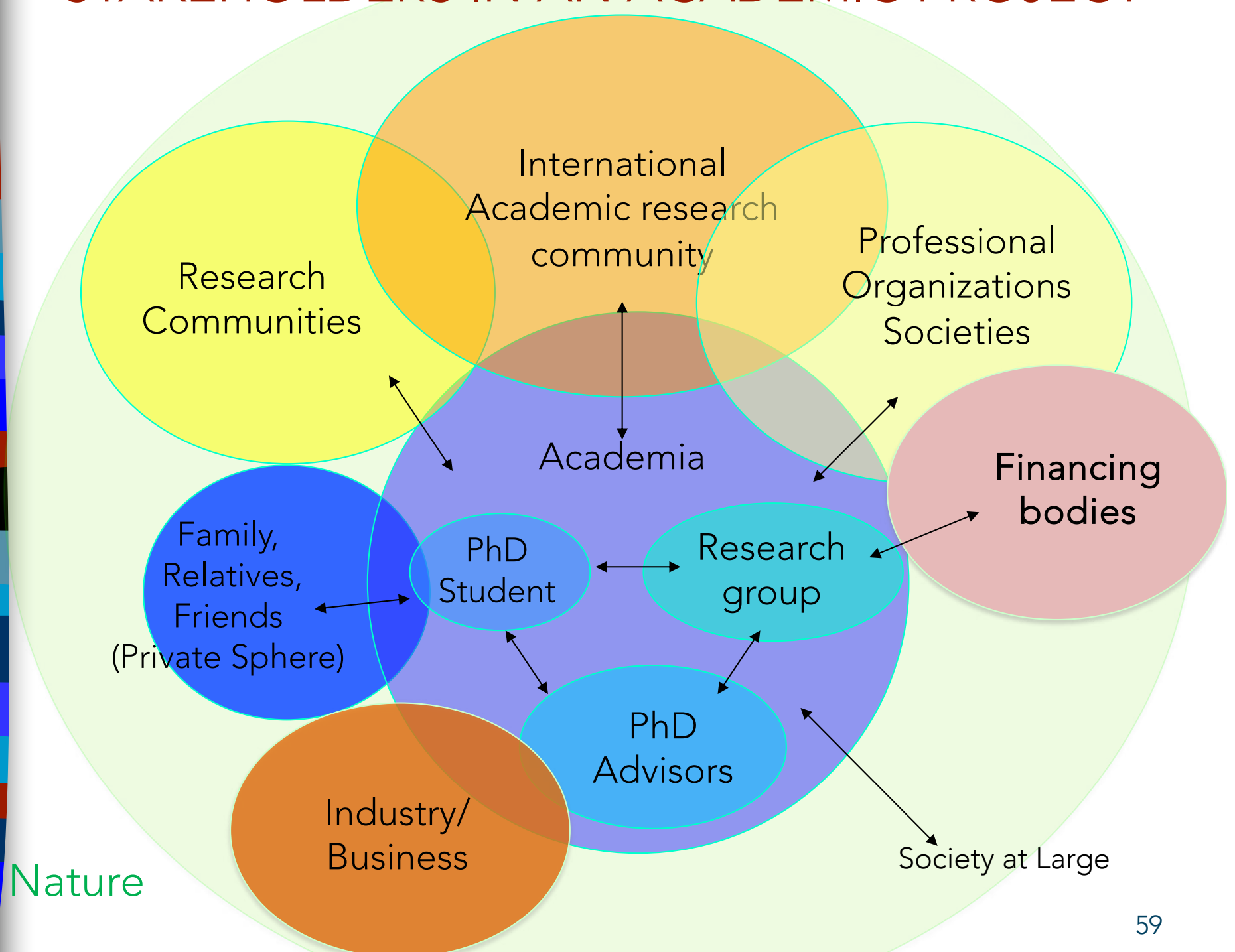


Importance of Stakeholders

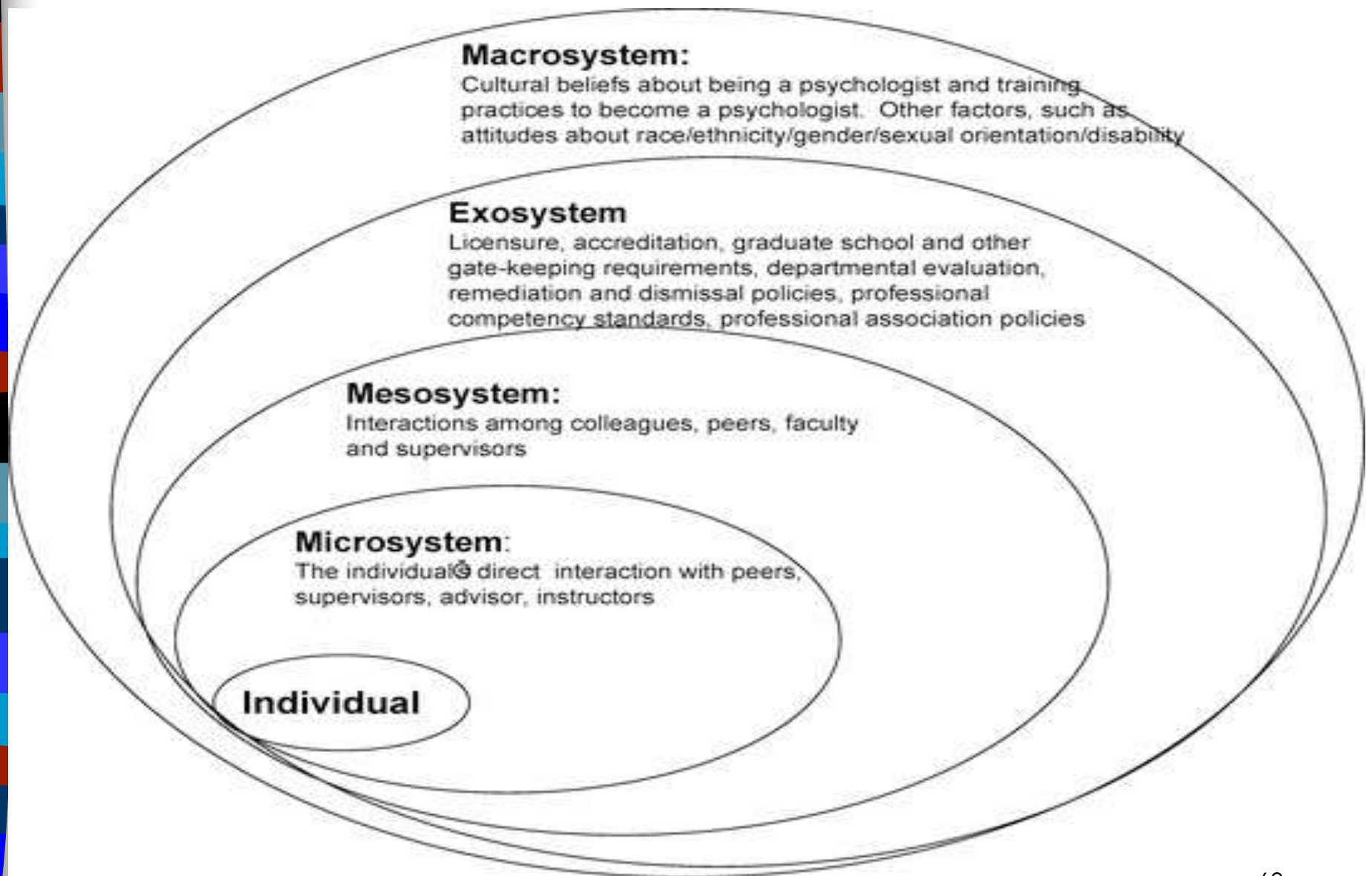
STAKEHOLDERS IN AN INDUSTRY PROJECT



STAKEHOLDERS IN AN ACADEMIC PROJECT

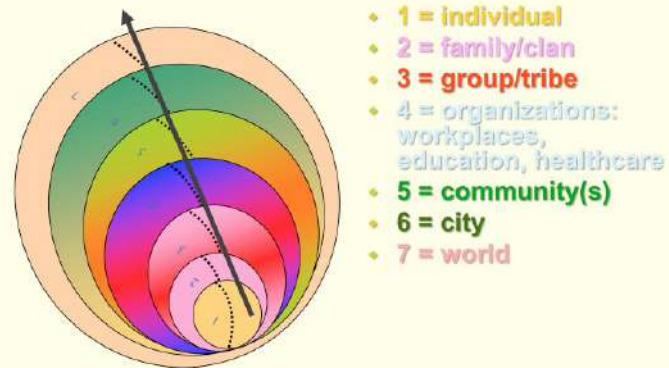


Micro – Meso – Exo – Macro Domains of Ethics



Complexity Aspects Relating Micro – Meso – Exo – Macro Levels of Analysis –Example of City

Map 2: The Nested Hierarchy of City Systems

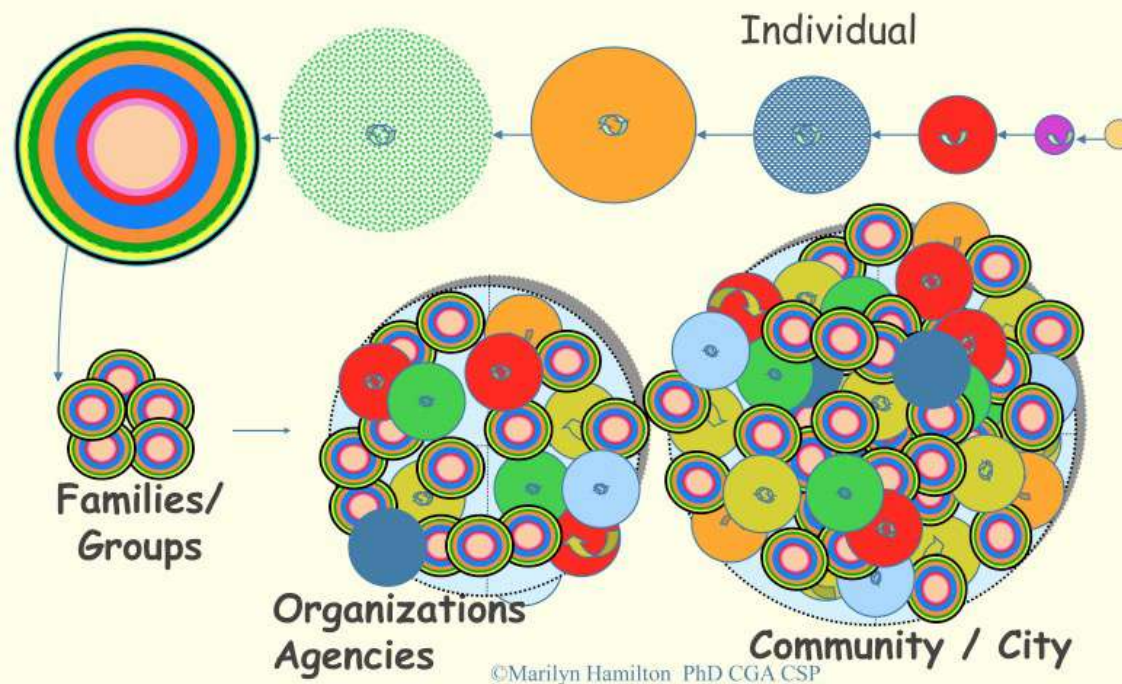


©Marilyn Hamilton PhD CGA CSP

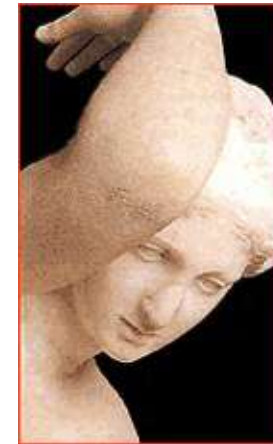
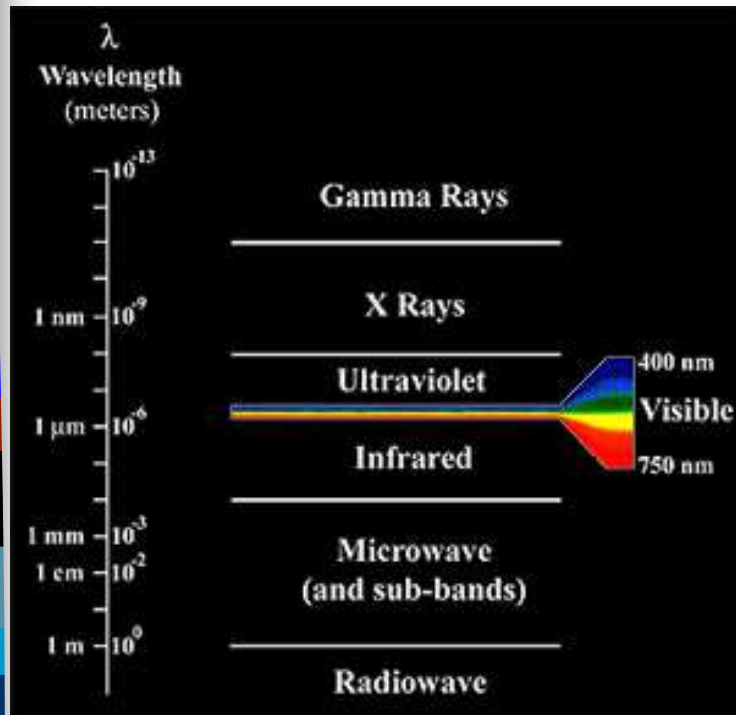
A holarchy, in the terminology of Arthur Koestler, is a connection between holons, where a holon is both a part and a whole. The term was coined in Koestler's 1967 book *The Ghost in the Machine*.

Complexity Aspects Relating Micro – Meso – Exo – Macro Levels of Analysis –Example of City

**Map 3: The Scalar Fractal Relationship of
Micro, Meso, and Macro Human Systems**



World seen in different light



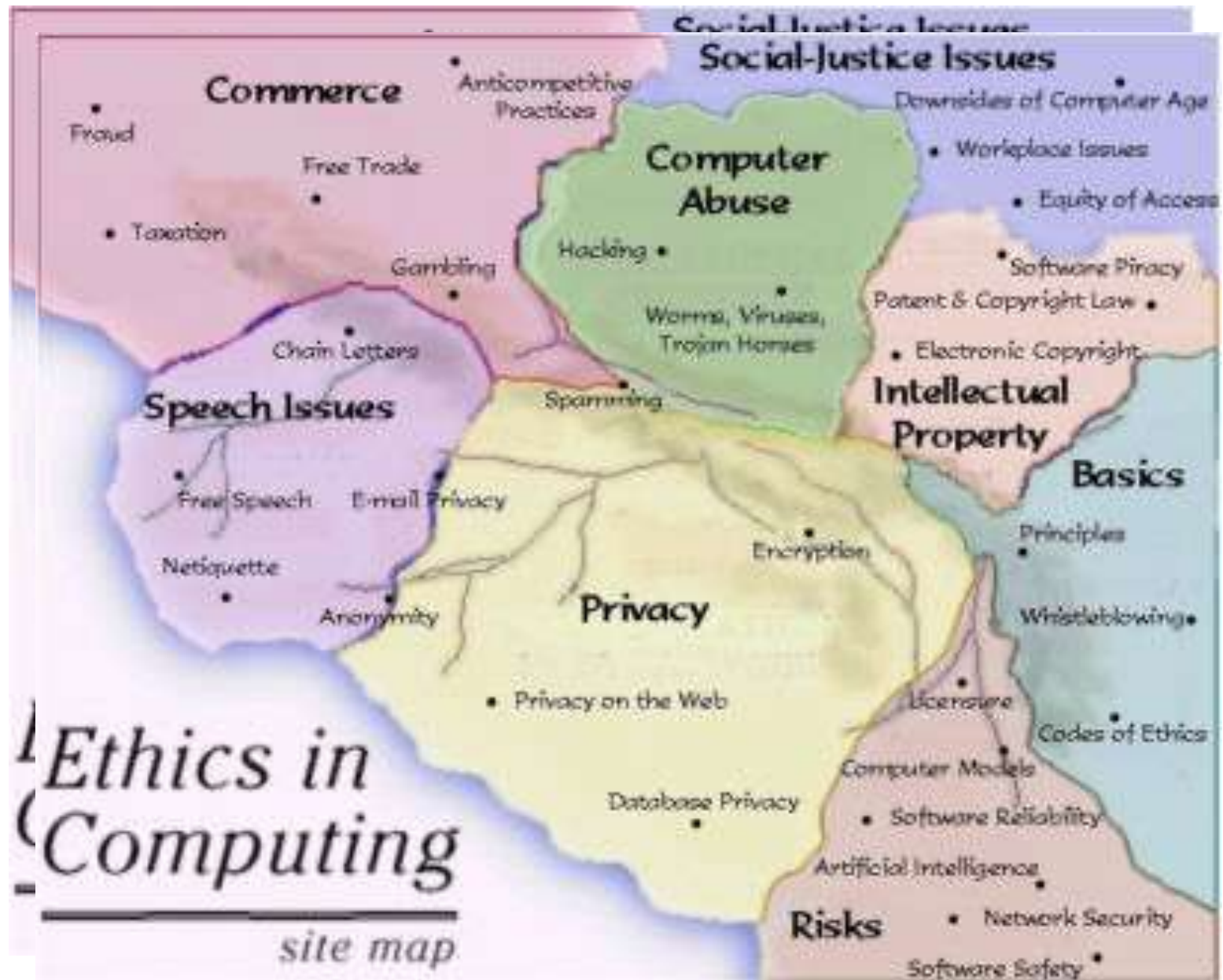
What if we could see in any wavelength of the electromagnetic spectrum, from gamma-rays to radio waves? How would the world appear to us?

Different ethical approaches provide "different optics" or "wavelengths" for analyzing ethical questions.



AI Ethics in perspective

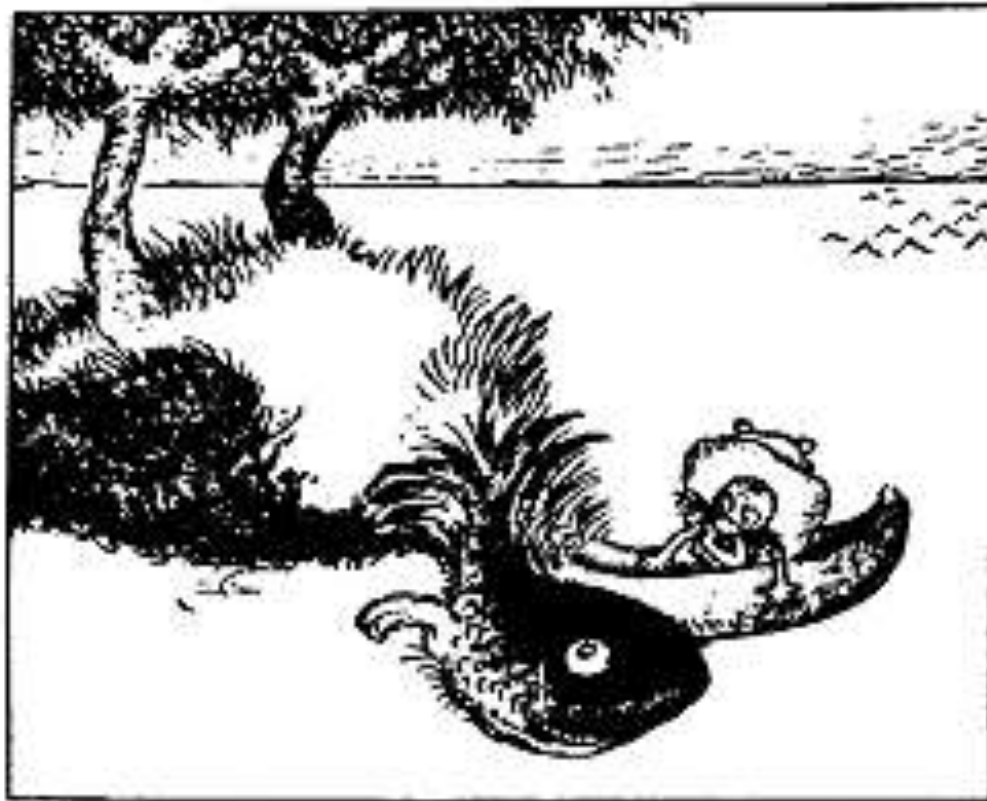
- ❑ Different ethical approaches apply at different scales
- ❑ On the global scale UNESCO issued 'Recommendation on the Ethics of Artificial Intelligence' addressing general questions of 1 Human rights and human dignity; 2 Living in a peaceful, just and interconnected societies; 3 Ensuring diversity and inclusiveness; 4 Environment and ecosystem flourishing. UN published "Governing AI for Humanity"
- ❑ EU issued "AI act" (AI law) and US "AI Bill of Rights"
- ❑ Professional organisations such as IEEE published The IEEE Global Initiative for Ethical Considerations in Artificial Intelligence and Autonomous Systems
- ❑ Different advisory groups are formed such as EU High-level expert group on artificial intelligence, <https://digital-strategy.ec.europa.eu/en/policies/expert-group-ai>
- ❑ Individual researchers, ethicists and computing professionals address specific questions regarding AI ethics such as responsibility, transparency, privacy, inclusion, bias, etc.
- ❑ We are all stakeholders as professionals as well as citizens.



http://legacy.eos.ncsu.edu/eos/info/computer_ethics/

DIFFERENT PERSPECTIVES

ETHICS IS PARTICIPATORY AND ITERATIVE PROCESS



References

Basic material

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- ETHICS AND COMPUTING, Living Responsibly in a Computerized World, Kevin W. Bowyer Editor, IEEE Press 2000
- ETHICS IN ENGINEERING, Mike Martin, Roland Schinzinger, McGraw Hill, 1997
- <http://ethics.acusd.edu/socialethics/>



References

Additional resources

- <http://www.ethics.ubc.ca/resources/professional/> Professional Ethics Resources
- <http://www.phil.gu.se/munthe/ethicsLinks> Internet-sites dealing with ethics
- <http://www.engr.csulb.edu/~jewett/social/> Social Issues of Computing
- <http://courses.cs.vt.edu/~cs3604/lib/WorldCodes/WorldCodes.html> Codes of Conduct/Practice/Ethics from Around the World
- Bergström, Lars, Grundbok i värdeteori, Thales, Stockholm, 1992
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