CSDE 502
Ethics & Norms

March 29, 2024

Course Structure & Expectations

- This is a largely discussion-based course, most of the assignments involve coming to class prepared to discuss readings by
  - doing them! and
  - coming prepared with questions or topics you want to discuss

Course Assignments

- Assignments and course are credit/no credit
- Assignments include:
  - Discussion participation/facilitation
  - Attendance of 1 workshop and 1 seminar
  - CITI Training
  - Final Exam (Take home, written)

Thinking Ethically

The Utilitarian Approach

- greatest balance of good over evil
- What are the possible actions?
- Who will benefit and who will be harmed?
- Which actions allow greatest benefits and least harm?

The Rights Approach

- individual's right to choose for themself
- right to truth
- right to privacy
- right not to be injured
- right to what is agreed

The Fairness or Justice Approach

- How fair is an action?
- Does it treat everyone in the same way?
- Does it show favoritism and discrimination?

The Common-Good Approach

- Community members bound by pursuit of common values and goals
- the social policies, social systems, institutions, and environments on which we depend are beneficial to all

The Virtue Approach

- assumes there are certain ideals toward which we should strive
- What will promote the development of character within myself and my community?

Fostering Integrity, Ch. 2: Core Values

- Objectivity
- Honesty
- Openness
- Accountability
- Fairness
- Stewardship

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Objectivity

Karl Popper (1999)
1) pose refutable hypotheses,
2) test hypotheses with relevant evidence,
3) state the results clearly & unambiguously to any interested person
Goal is reproducibility
Best intentions not always sufficient!

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Honesty

- Starting assumption for institutions and stakeholders
- Forms of dishonesty
- plagiarism & data fabrication
- p-hacking, cherry-picking, misrepresentation of results (bad figures, bad interpretations, bad headlines)
- Non-reporting

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Openness

- Transparency & presenting ALL the information relevant to a decision
- Sometimes there is a pull between adherence to the value of openness and other goals e.g. commercial gain, subject privacy

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Accountability

- Individual accountability
  - obligation to others in “web of science” and society
- Mutual accountability
  - Peer to peer
  - Mentor to mentee
  - Institutions to individuals

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Fairness

- Appropriate and ANNOUNCED criteria
- Authorship, citation, acknowledgments
- Human and living subjects
- Society

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Stewardship

- Attending to professional relationships & curating working environments
- Service to societies and institutions
- Mentorship and education
- Society

Mertonian Norms & Counter-Norms

A **normative system** is:

- a systemic or societal attribute
- the set of all norms associated with a particular social system
- the members' collective subscription to the norms
- the members' collective weighting of the norms' importance and applicability

A **normative orientation** is:

- an individual attribute
- describes a unique pattern of subscription and resistance to a ***normative system***

Mertonian Norms & Counter-Norms

- Robert Merton came up with four **research norms** in 1942 and acknowledged there were direct **counter-norms** to each
- A **norm** may be a behavior that is typical within the social group, OR a behavior that is deemed desirable or ideal for the social group
- Ian Mitroff (1974) outlined four **direct counter-norms** to Merton and Michael Mulkay (1976, 1980) argued neither one describe a **normative system** actually adhered to by the scientific community
- Anderson et al. (2010) propose 4 more pairs of **norms and counter-norms** and study their adherence in modern science

Mertonian Norms & Counter-Norms

Norms	Counter-norms
1. communalism	1. individualism
2. universalism	2. particularism
3. disinterestedness	3. self-interestedness
4. organized skepticism	4. organized dogmatism
5. governance	5. administration
6. quality	6. quantity
7. calling	7. employment
8. breadth	8. narrowness

Communalism vs Individualism

- **Communalism:** Scientists openly share new findings with colleagues.
- **Secrecy/Individualism:** Scientists protect their newest findings to ensure priority in publishing, patenting, or applications.

Universalism vs Particularism

- **Universalism:** Scientists evaluate research only on its merit, i.e., according to accepted standards of the field.

- **Particularism:** Scientists assess new knowledge and its applications based on the reputation and past productivity of the individual or research group

Disinterestedness vs Self-interestedness

- **Disinterestedness:** Scientists are motivated by the desire for knowledge and discovery, and not by the possibility of personal gain.

- **Secrecy/Individualism:** Scientists compete with others in the same field for funding and recognition of their achievements.

Organized skepticism vs Organized dogmatism

- **Organized skepticism:** Scientists consider all new evidence, hypotheses, theories, and innovations, even those that challenge or contradict their own work.

- **Organized dogmatism:** Scientists invest their careers in promoting their own most important findings, theories, or innovations.

Governance vs Administration

- **Governance:** Scientists are responsible for the direction and control of science through governance, self-regulation and peer review.

- **Administration:** Scientists rely on administrators to direct the scientific enterprise through management decisions.

Quantity vs. Quality

- **Quality:** Scientists judge each others' contributions to science primarily on the basis of quality.

- **Quantity:** Scientists assess each others work primarily on the basis of numbers of publications and grants.

Calling vs. Employment

- **Calling:** Scientists view science as serving a purpose worth of personal sacrifice.

- **Secrecy/Individualism:** Scientists work in accordance with the terms of their employment, such as pay, benefits, working hours, and vacation time.

Breadth vs Narrowness

- **Breadth:** Scientists fulfill a broad range of responsibilities in the areas of teaching, research and service.

- **Narrowness:** Scientists put more of their time and effort into their research than into any other aspect of their work.