Ethics in research

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www.niehs.nih.gov/research/resources/bioethics/whatis

What are ethics?

- Most people think ethics are rules between right and wrong
- Ethics are norms for conduct between acceptable and unacceptable behavior
- Different people have different views of right and wrong
- Most societies have legal rules, but ethical standards are broader and more informal

Ethics

- Ethics and law are not the same
  - Something may be legal but unethical (lying) or illegal but ethical (paying for someone's parking meter)
  - We use ethics to evaluate, propose or interpret laws
- **One may define ethics as a method for how to act and how to analyze complex problems**
- Different disciplines have standards of behavior that suit their particular aims and goals
- Ethical norms apply to people who conduct scientific research

Ethics in research

- Important to adhere to ethical norms in research
  - Promotes the aims of research
    - Knowledge
    - Truth
    - Avoidance of error
    - Prohibits against fabricating, falsifying, or misrepresenting data
  - Research often deals with cooperating and coordination of different people
    - Trust
    - Accountability
    - Mutual respect
    - Fairness
    - Guidelines for authorship, copyrights, patents, data sharing

Ethics in research

- Ethical norms help to ensure that researchers can be held accountable to the public
  - Federal policies
  - Conflicts of interest
- Help build public support for research
  - People are more likely to fund research if they can trust quality and integrity of research

Policies

- Given the importance of ethics in research, different professional associations, government and universities have specific codes and rules
  - NIH
  - NSF
  - FDA
  - EPA
  - USDA
  - DOE

Principles

- Honesty
  - Honestly report data, results and methodology, and publication status
  - Do not fabricate, falsify, or misrepresent data
  - Do not deceive colleagues, research sponsors, or the public
- Objectivity
  - Avoid bias in design, data analysis, interpretation, peer review, grant writing
  - Disclose personal or financial interests that may affect research

Principles

- Integrity
  - Keep promises and agreements
  - Act with sincerity
- Carefulness
  - Avoid careless errors and negligence
  - Carefully and critically examine your work
  - Keep good records of research activities

Principles

- Openness
  - Share data, results, ideas, tools, resources
  - Be open to criticism and new ideas
- Respect for Intellectual property
  - Honor patents, copyrights
  - Do not use unpublished data, methods, or results without permission
  - Give proper acknowledgement for all contributions
  - Never plagiarize

Principles

- Confidentiality
  - Protect confidential communications, such as papers or grants submitted for publication
- Responsible Publications
  - Publish to advance research and scholarship
  - Avoid wasteful and duplicative publications
- Responsible Mentoring
  - Help to educate, mentor, and advise students
  - Promote their welfare

Principles

- Respect for Colleagues
- Social Responsibility
  - Strive to promote social good
- Non-Discrimination
- Competence
  - Maintain and improve your own professional competence through lifelong education and learning

Principles

- Legality
  - Know and obey all relevant laws

Example cases

- Codes, policies and principles are important but like any rules they do not cover every situation, and they require interpretation
- Important for researchers to be able to interpret, assess and apply various research rules and how to make ethical decisions in various situations.

Case 1

- Research protocol requires a measurement of 50 modules. After the researcher finishes 45 modules, the researcher wants to leave and so extrapolates the 45 completed results to produce the 5 additional results.

Ethical?

- Many research ethics policies would say that the researcher has acted unethically by fabricating data. If this study was sponsored by a federal agency, it would be a form of research misconduct, which the government defines as "fabrication, falsification, or plagiarism" (or FFP).
- However, misconduct occurs only when researchers intend to deceive. Honest errors related to sloppiness, poor record keeping, miscalculations, bias, self-deception, and even negligence do not constitute misconduct.
- Reasonable disagreements about research methods, procedures, and interpretations do not constitute research misconduct.

Case 2

- You discover a mathematical error in your paper which has been accepted for publication in a journal. The error does not affect the overall results, but it is potentially misleading. You decide to ignore the error to avoid embarrassment.

Case 2

- The error is not misconduct
- Most researchers would say that you should tell the journal and any coauthors about the error and publish a correction or errata
- Failing to publish a correction would be unethical because it violates the norms relating to honesty and objectivity

Other examples

- Not misconduct, but unethical
  - Publishing same paper in two different journals without telling editors
  - Submitting same paper to different journals without telling editors
  - Not informing a collaborator of your intent to file a patent to make sure you are the sole inventor
  - Including a colleague as an author in return for a favor even though colleague did not contribute to the paper
  - Discussing confidential data from a paper you are reviewing
  - Using data, ideas you learn while reviewing a grant
  - Removing outliers from data without discussing reasons
  - Using inappropriate statistical technique
  - Bypassing peer review and announcing results at press conference
  - Giving same research project to 2 graduate students to see who can do it the fastest

Case 3

- A researcher obtains a large dataset that includes data useful for many papers. After publishing the first paper, the researcher plans to publish many more papers from the dataset. The researcher receives a request from a research team to access the data to study some correlation. The researcher was already planning on conducting the same correlation study. Should the researcher allow access to the data?

Case 3

- Ethical norm of openness obliges the researcher to share data.
- If data shared, competitor may publish paper first!

- To know what to do, the researcher needs to have more information concerning such matters as university or funding agency or journal policies that may apply to this situation, the team's intellectual property interests, the possibility of negotiating some kind of agreement with the other team, whether the other team also has some information it is willing to share, the impact of the potential publications, etc.
- Not a clear answer to question. The main point is that human reasoning plays a pivotal role in ethical decision-making but there are limits to its ability to solve all ethical dilemmas in a finite amount of time.

What to do

- If not sure of ethical or unethical behavior, talk to colleagues, senior researcher, department chair,…

- Rate of misconduct is low
  - 0.01% confirmed misconduct
  - 1% self-reporting

- https://en.wikipedia.org/wiki/List_of_scientific_misconduct_incidents