How to Implement Ethics in Environmental Health Education

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Ethical decision-making (*applied ethics*) is required at every step in both research and in practice, and is *context-dependent*.
Lenses through which we apply our training

- **Macro-level lens** *(macro-ethics)*
  - State/province, country or global-level

- **Meso-level lens** *(meso-ethics)*
  - Regional, city or community-level

- **Micro-level lens** *(micro-ethics)*
  - One-on-one-level
Classical Health Risk Assessment – reductionist and linear in approach, EPA, 1960s

1. Hazard Assessment
2. Vulnerability Assessment
3. Risk Evaluation
4. Risk Communication
5. Risk Management
GANHLY ALL RELEVANT INFORMATION

SPECIFY CLEARLY ALL COMPONENTS OF THE IDENTIFIED ETHICAL DILEMMA

SPECIFY ALL OPTIONS AS POSSIBLE COURSES OF ACTION

SELECT A SINGLE BEST ALTERNATIVE

ACT AND REVIEW

GENERIC PROBLEM-SOLVING MODEL FOR ETHICAL DECISION-MAKING
1. INFORMATION & IDENTIFICATION

- Problem
- People
- Ethical Components

2. CLARIFICATION & EVALUATION

- Ethical Principles
  - Respect for Autonomy
    - Veracity
    - Fidelity
  - Beneficence
  - Non-Maleficence
  - Justice

- Social Expectations

- Legal Requirements

- Range of actions and anticipated consequences of each action

3. ACTION & REVIEW

MAKING AN ETHICAL DECISION
(Adapted from Storch JL; 1989: unpublished)
And, to address every box, we need to appreciate some of the basic language in and approaches to being an ethical professional in whatever the context is within which we work
Ethics – derivations/origins

- Biblical directives *(prescriptive)*
- The Golden Rule
- History of guideline development
  - Nazi experiments → Criminal trials → The Belmont Report
  - Georgetown “Mantra”
  - Specialty and sub-specialty codes, guidelines, and standards of “best” practice *(aspirational)*
- Casuistry – using resolved cases as *precedents*
• What is hateful unto you, do not do unto your neighbour
  
  *Hillel, Babylonian Talmud, Tractate Shabbat, 31B*

• Treat others as we would want them to treat us or our loved ones
  
  *Luke 6:31 and Matthew 7:12*

• Treat others justly so that no one would be unjust to you
  
  *From the Prophet Mohamed’s Last Sermon*

• Do our level best

• Assert ourselves if we find someone else who has done ill
THE NORMAL RANGE OF HUMAN CONDUCT

VERY POOR  AND EVERYTHING IN BETWEEN  VERY GOOD

DISHONEST  HONEST

POWER CORRUPTS. ABSOLUTE POWER CORRUPTS ABSOLUTELY!

(Lord Acton’s premise)

NO ONE IS IMMUNE!
But, what are we up against?

- What creates/drives misconduct in science?
- What tempts scientists away from the pursuit of truth (questionable *moral integrity*)?
- How does misconduct derail scientific discourse?
- How does misconduct influence public policy and hence population and global environmental health?
Influences and pressures exposed

PERVERSIVE

- From funding sources to peer review
- From the questions we ask through access to data
- From study design to data analysis and interpretation
- From dissemination of findings to job security
Be aware of forces at play that influence both science and policy.

... Great vigilance and personal integrity are required to change course.
“Industry’s offensive against the regulation of health and safety hazards uses academics to downplay or deny the seriousness of the hazards...”

Clayson and Halpern
J. of Public Health Policy
September, 1983
The Four D’s applied to scientists studying that which does not support the *status quo*

- Deny
- Delay
- Divide
- Discredit
  - [ Dismiss ]
Teflon... linked to birth defects?

Don't worry, the accusation won't stick.
On “Corporate Ethics and Environmental Pollution”:

“Corporations create 80% of our GNP. They, of all entities working, have the most potential for good or evil in our society.”
The Manufacture of Doubt

- D. Michaels, *Doubt is their Product*  
  Oxford University Press, 2008
- D. Davis, *The Secret History of the War on Cancer*  
  Basic Books, 2007
- And several others …

By increasing uncertainty, the policy-maker’s ability to implement health policy is made all the more difficult…

→ *subversion and ambushing of science*
PUBLIC POLICY

- Personal/Self-Interest
- Cultural Interests
- Religious Interests
- Corporate/Multinational Business Interests
- International Agency & Public Interests
- NGO - Stakeholder Interests
- Media Interests
- Sectoral Interests
- Minority Interests

SCIENCE

EDUCATION
- Social
- Health
- Economic

ADVOCACY

FOREIGN INTERESTS

CORPORATE / MULTINATIONAL BUSINESS INTERESTS
Science is but one such pressure

→ HUMILITY AND EMPATHY FOR THE POLICY-MAKER
So, how do we prepare students for professional work in any field that impinges on environmental health? For instance:

- environmental epidemiology
- exposure assessment
- toxicology
- public health policy
- public health practice
Definitions

ETHICS - The rules of conduct/behavior recognized in respect to a particular class of human actions or a particular group or culture.

SELF-REGULATED

MORALS - Principles or habits with respect to right or wrong.

LEGALLY ENFORCED
Core Values & Mission Statements

They provide the anchor for our activity and collective motivation for the public’s health… maintain, enhance, and promote health in communities worldwide … work to protect the public health interest above any other interest …
Why ethics in the professions?

- Keep ourselves on track, or keep our own house in order
- Socialize our students
- Professional accountability according to norms of behaviour

IN WHOSE BEST INTERESTS?

WHO IS TAKING THE RISKS?
WHO IS DERIVING THE BENEFITS?
Find examples that might resonate with students and ask if the example seems “right” to them ... recognizing that context and values influence what motivate and drive us.
Ethical dimensions of global climate change

November 6, 2007 (Courtesy J. Patz) -- Cartograms
The Eight Millennium Development Goals - MDGs *(UN, 2000)*

1. Eradicate extreme poverty and hunger
2. Achieve universal primary education
3. Promote gender equality and empower
4. Reduce child mortality
5. Improve maternal health
6. Combat HIV and AIDS, malaria and other diseases
7. Ensure environmental sustainability
8. Develop a global partnership for development
To start, we first must recognize

- The non-sustainability of a world that operates currently with a 90:10 split / gap (where 90% of research funding goes to diseases affecting 10% of the global population)

- The existence of the Millennium Development Goals, set in 2000 amid a flurry of idealism and hope

- Disappointing movement towards achieving these 2015 goals

- Our collective responsibility as health scientists to be concerned about the health and well-being of both present and future generations
THEORETICAL APPROACHES/MODELS

ETHICAL THEORIES

- Normative
- Utilitarian
- Deontological
- Egalitarian
- Relational
- Libertarian
- Virtue
THE DISCIPLINE OF ETHICS

RULES

PRINCIPLES

THEORIES/APPROACHES
Prescriptive codes

versus

Aspirational codes
THE TEN COMMANDMENTS

• Thou shalt have no other Gods before me
• Thou shalt not bow down before graven images
• Thou shalt not take the name of the Lord thy God in vain
• Remember the Sabbath Day and keep it holy
• Honour thy father and thy mother
• Thou shalt not kill
• Thou shalt not commit adultery
• Thou shalt not steal
• Thou shalt not bear false witness against thy neighbour
• Thou shalt not covet

Moses, Mount Sinai
The Buddhist Code of Moral Conduct

by Vajirananavarorasa

The First Precept:
Abstaining from taking the lives of living beings

The Second Precept:
Abstaining from taking that which is not given

The Third Precept:
Abstaining from sexual misconduct

The Fourth Precept:
Abstaining from false speech

The Fifth Precept:
Abstaining from distilled and fermented intoxicants which are the occasion for carelessness which also includes drugs
The Scientific Ethic*

A set of norms that define the scientific endeavor an ethos that evolved gradually and organically.

PROFESSIONAL ETHICS embody some of these norms, but “The Ethic of Science” is more like the charter that makes science possible than like a law book that spells out the specific rules.

This ethic defines the boundaries that must be respected by those who wish recognition as part of the scientific community.

Deontological (i.e., duty-based)

In essence, the scientific ethic expects of scientists the duty to:

1. Use appropriate methods;
2. Be objective;
3. Be honest in reporting;
4. Publish results - POSITIVE as well as NEGATIVE;
5. Prohibit distortion in, for example:
   - Falsification of data
   - Biases inherent to study design
   - Proper analytical procedures
   - Objective interpretation
6. Do one’s own work:
   - Plagiarism
   - Acknowledge sources
   - Graduate students not to be exploited

GOOD ETHICS ⇔ GOOD SCIENCE
The FUNDAMENTAL PRINCIPLES of BIOETHICS include:

RESPECT FOR AUTONOMY

- Requires Respect for Individual Rights and Freedoms (voluntary vs. involuntary exposures)

BENEFICENCE

- Requires Doing Good - Consider consequences of interventions in people’s lives and of findings

NON-MALEFICENCE

- Requires Doing No Harm

JUSTICE

- Requires the fair and equitable allocation of risks and benefits to all without discrimination
- No hierarchy

- Constant tension among the four main principles

- Aim to maximize each of the four
Other public health principles

- PROTECT THE MOST VULNERABLE IN SOCIETY
  - Beneficence
- INVOLVE COMMUNITIES IN OUR RESEARCH
  - Respect for autonomy
- SERVE THE PUBLIC HEALTH INTEREST ABOVE ANY OTHER INTEREST
  - Beneficence and non-maleficence
The FUNDAMENTAL PRINCIPLES of BIOETHICS include (under Justice)

- ENVIRONMENTAL JUSTICE
  Who is taking the risks?
  Who is deriving the benefits?

- THE POLLUTER PAYS
  incentive to internalize costs
The FUNDAMENTAL PRINCIPLES of BIOETHICS include (under Non-maleficence and Respect for Autonomy)

- PRECAUTIONARY PRINCIPLE

  where there is a risk from a certain agent, the presence of uncertainty shall not be used as a reason for postponing cost-effective measures to prevent such exposure
GUIDELINES versus CODES

• Normative statements that are *aspirational* versus *prescriptive*

• A “list” versus a “checklist”

• “List” provides a basis for discussion:
  • Context
  • Recognize tensions
  • Not for application as a “checklist”!

→ Intended to stimulate a thoughtful dialectic
Principles – their utility

- Normative basis for rational policy
- Transparency of collective values
- Accountability for actions taken
On Virtue Ethics …

Because to be a professional of integrity, we must appreciate the traits of a virtuous character.
Character vs. Actions

**Virtues** do not replace ethical rules. Rather, an account of professional ethics is more complete if virtuous traits of character are identified, such as:
VIRTUES OF PROFESSIONALS

- **Humility**  – Respect the input & opinions of others / Self-effacement
- **Fidelity**  – Honour one’s commitments / Promote trust
- **Justice**  – Act fairly
- **Patience**  – Take time to hear others’ viewpoints
- **Industry**  – Do your level best / Excel
- **Veracity**  – Tell the truth / Be honest
- **Compassion**  – Empathize
- **Integrity**  – Demonstrate good moral character
- **Serve**  – Protect the most vulnerable/Serve the public interest
- **Prudence**  – Err on the side of caution/Demonstrate good judgment
Oversight and Watchdog Bodies

- (Health) Research Ethics Boards
- Institutional Review Boards
- and the like
A COMPREHENSIVE ETHICS PROGRAMME INCLUDES FOUR DIMENSIONS

The model includes four dimensions:

- Consensus building
- Ethics guideline development and review
- Education and Learning
- Implementation
Professional Organization

See Table 1 for professional organization’s role

- See Table 2 for specific components of implementation phase

Evolving Beliefs/Values

“Aspirations”

Main Principles

Core values

Guidelines (Accountability)

Context-Specific Commentary

Standards of Practice

Research & Practice

“Real World”

Case Studies

Value Conflicts

Personal Beliefs

Legal & Social Requirements

Stakeholder Input

Beliefs/Values of Stakeholders

Broader Social Consequences

THE RELATIONSHIPS BETWEEN THE PROFESSIONAL ORGANIZATION, PROFESSIONAL CORE VALUES, AND RESEARCH AND PRACTICE
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<tr>
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<th>PROFESSIONAL ORGANIZATION’S ROLES</th>
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<tr>
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<td>A focus for the profession and a “collective identity”</td>
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<td>A voice for the profession:</td>
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<td></td>
<td>→ Public education on the role of the profession</td>
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<td>→ An advocate for public health and the interests of the profession</td>
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<td>Professional education about the ethical and philosophical basis for the profession</td>
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<td>Interaction with other professions to better maintain public relevance and protect against adverse consequences</td>
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<td>Mediation service among member- and stakeholder-interests</td>
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<td>Ongoing oversight and commitment to ethics programme: Centres of Excellence in Ethics</td>
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<td>Act as a clearinghouse for epidemiological information to the media and the public</td>
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<td>Accountability to both the public and stakeholders</td>
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## TABLE 2

**COMPONENTS OF THE IMPLEMENTATION PHASE OF THE ETHICS PROGRAM**

- Organizational infrastructure and established procedures that resonate with ethics and philosophy involvements
- Ongoing evaluation in relation to medium- and long-term ethics goals
- Agreements of understanding to minimize risk of allegations of unethical behaviour
- Ethics education and training through ethics sessions at association meetings and columns in its scientific and more general literature
- Develop model ethics curricula
- Incentives (e.g., student prizes for ethics papers)
- Ethics consultation service
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Beliefs/Values of Stakeholders
A VALUES-related QUESTION

- Is science value free?
- OR, said another way,
- Is science value neutral?
Libertarian Values
... in the USA

The individual’s right to “life, liberty and the pursuit of happiness”

Declaration of Independence
Benjamin Franklin, Thomas Jefferson, … John Locke (1776)
Egalitarian Values
... in France

Liberty, Equality, and Fraternity

“If they cannot afford to eat bread, let them eat cake”
Louis XVI and Marie Antoinette
The French Revolution (1789-1792)
Communitarian Values … in Canada

- Greater focus on community through

  “Peace, order and good government”

Constitution Act
“Fathers of Confederation” (1867)
Distinguish between

Individual Rights

and

Public Duties
Universal Declaration of Human Rights

Rights-based
The Earth Charter … duties-based

A soft law instrument … to save us from ourselves

Preamble

- Respect and care for the community of life
- Ecological integrity
- Social and economic justice
- Democracy, non-violence, and peace

The Way Forward

http://www.earthcharter.org/
Risk Perception – Context (1 of 2)
Risk Perception – Context (2 of 2)

AGNOSTICISM
This shit has happened before.

ATHIEISM
If shit happens, it isn't really shit.

JUDAISM
Ask me into your house, and I will tell you why shit happens.

HINDUISM

BUDDHISM

JEHOVAH WITNESS

* ORIGINAL CONCEPT BY UNKNOWN
SAME PLANET, DIFFERENT WORLDS.
TAKE HOME MESSAGES

- Uncertainty IS inherent to science

- Science strives to be value-neutral/value-free, but the human instrument is neither

- Look first to ourselves, because causal inference is a function of who it is that is making the inference which, in turn, is a function of how we apply our scientific methods
The Challenge – while science advances

Who takes the risks while who derives the benefits? Or, whose interests are to be served under a proposed policy?
Discussion