



IMPLEMENTING ETHICS IN RADIOLOGICAL PROTECTION DECISION MAKING: APPLICATION TO POST-ACCIDENT SITUATIONS

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Introduction

- The ICRP publication of TG 94 has two key objectives
 - To clarify the ethical basis of the system of RP
 - To bring awareness about the ethical aspects of RP to both the interested public and RP professionals
- ICRP aims to communicate the “whys” of the system with the public and professionals as well as to help strengthen the basis of the recommendations
- Ethics should be incorporated as an established part of practice and training in RP
 - E.g. courses, lectures, workshops, continuing education, etc.

How can ethical theory be made accessible to practitioners?

Goal: engage practitioners in ethical decision making

How can ethical theories be applied in a practical way?

Goal: provide a framework for dealing with real problems

What is the most important thing in radiation protection?

Ask a health physicist: Safety

Results driven; typically utilitarian approach

Often doesn't capture the whole picture

Ask a philosopher: Prudence, justice, preserving dignity, etc.

Process driven; focus is on how results are achieved, with varying approaches

Not always practical

Finding Balance

Balancing theory vs practical considerations

Balancing competing values

Ensuring benefit outweighs risk

If the highest aim of a captain were to preserve his ship, he would keep it in port forever.

-St Thomas Aquinas

Perception of ethics

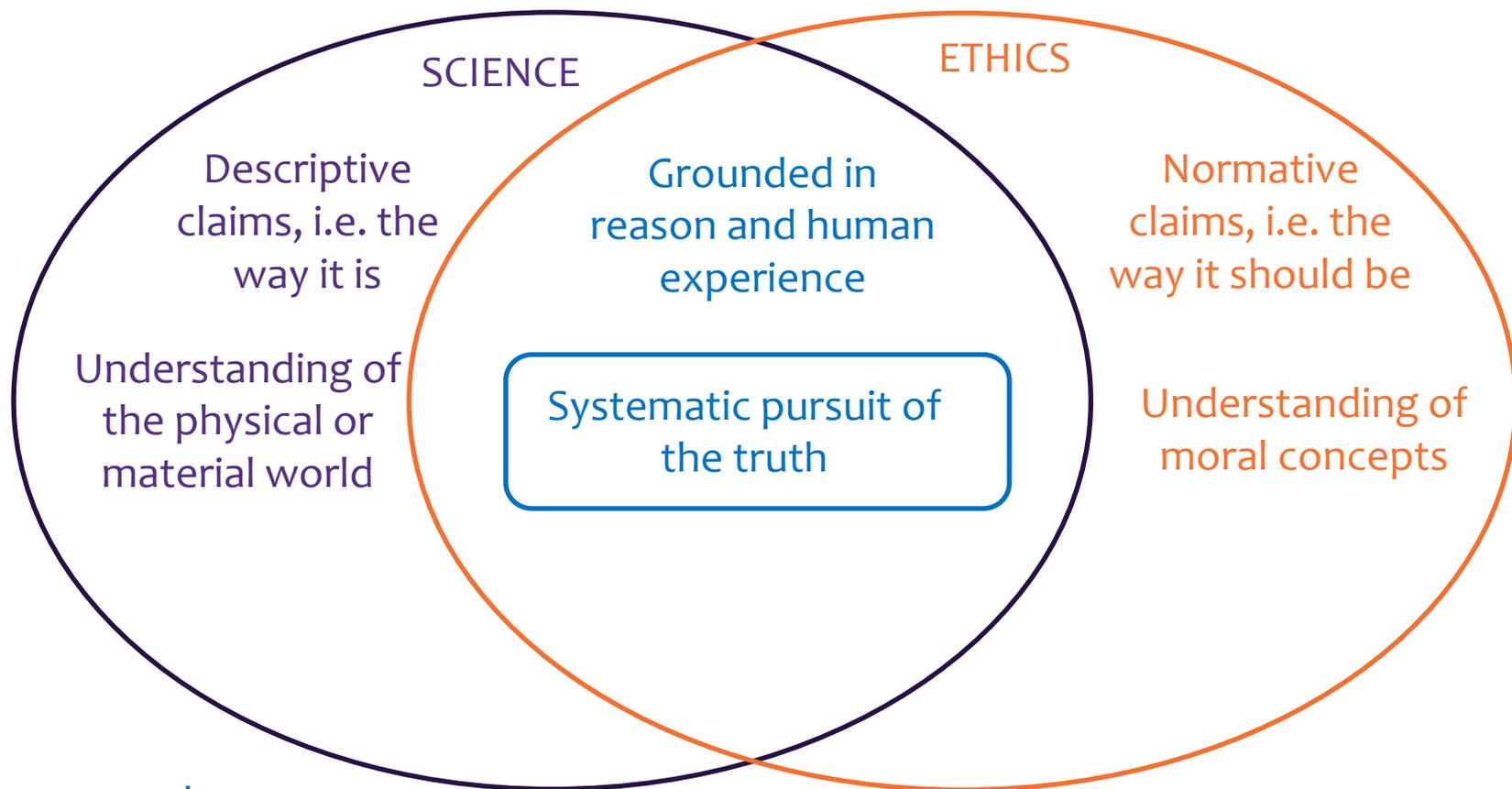
- Most practitioners are familiar with a professional code of ethics from their respective organization
 - Typically provides a succinct statement of the ethical values, obligations, duties, and professional ideas of a particular profession
 - Can lack information on implementation or explanation of the theoretical basis
 - Studies have suggested that the value of ethics training comes from increased familiarity with moral concepts along with having a framework in place to think about and discuss ethical issues
- Beyond that, ethical theory is generally perceived as
 - Irrelevant or impractical
 - Outside of expertise
 - Subjective (“anything goes”)

Methods of scientific investigation impinge on the individual scientist's way of life not only as regards knowledge acquisition but also at a deep personal level

-Louis Caruana

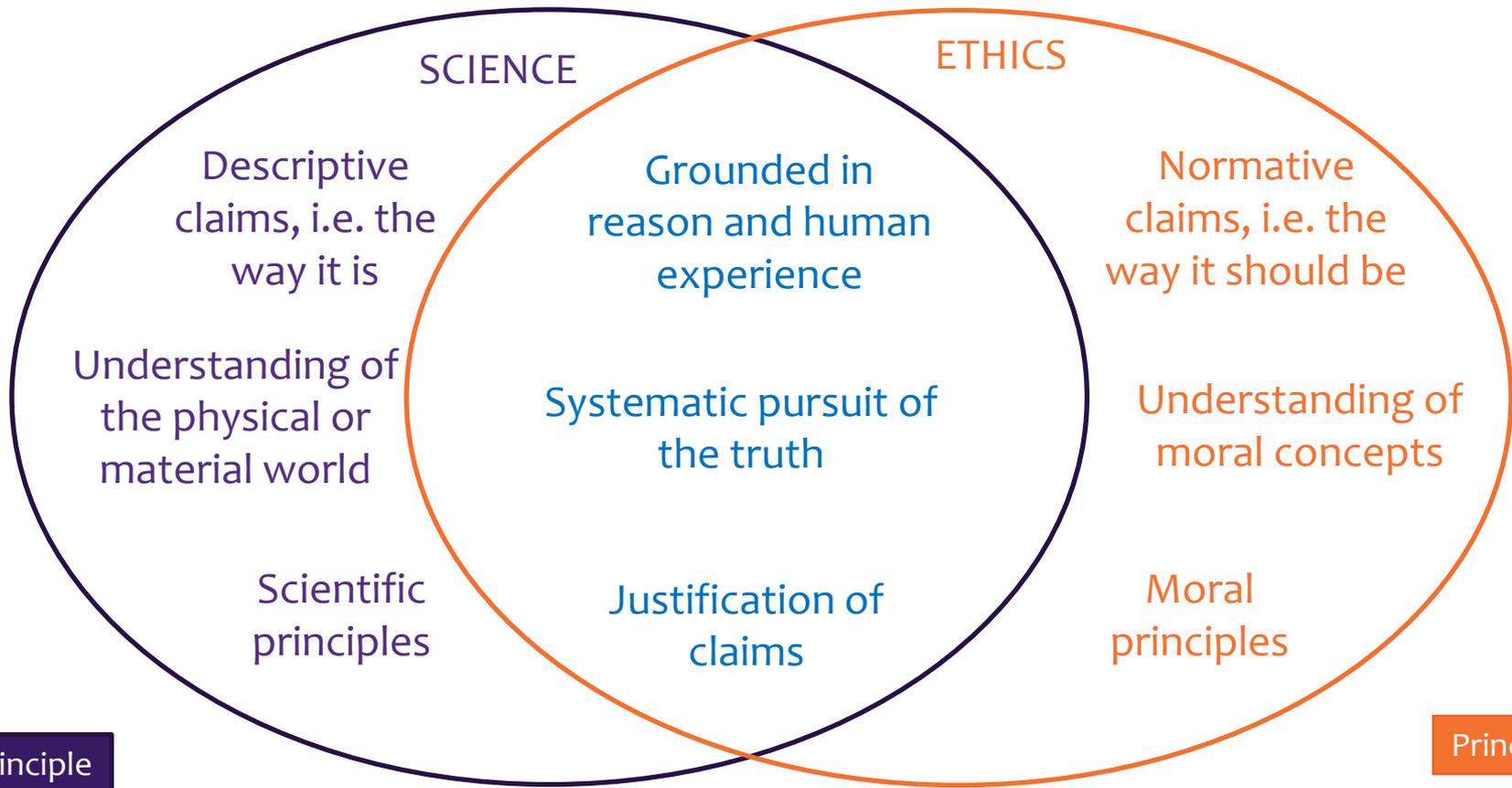
Finding common ground

Relatability: How is ethics like science?



A note on truth:

- Necessary belief that discovery of the truth is possible
- Current beliefs are **qualified**; they are the best answers in light of **current knowledge**
- **Confidence** increases with number of independent supporting arguments or lines of evidence



Principle

Principle

A fundamental truth or theory

A standard or rule of personal conduct

A rule or law concerning natural phenomena or system behavior

A set of moral or ethical standards or judgements

An adopted rule, method, or policy for application in action

A mechanism for safe guarding values

An ethical toolbox

Rutland Institute for Ethics

Ethical theory

- The system of radiological protection is rooted in the 3 major theories of ethics: **virtue** (character), **deontological** (rights) and **utilitarian** (consequences) ethics
- Each theory can be seen as a “tool” to use in analyzing a situation

In discussing ethics with people, it is important to expose them to concepts and the arguments behind the concepts, rather than just providing a list of rules to follow

Consequentialist ethical theories maintain that right and wrong are a function of the consequences of our actions... that our actions are right or wrong because, and only because, of their consequences.

-William Shaw

Cost-benefit

Act in such a way that you treat humanity, whether in your own person or the person of another, always at the same time as an end and never simply as a means.

-Immanuel Kant

The Golden Rule

Ethical behavior is one of the traits of the mature, strong, healthy, fully developed human personality

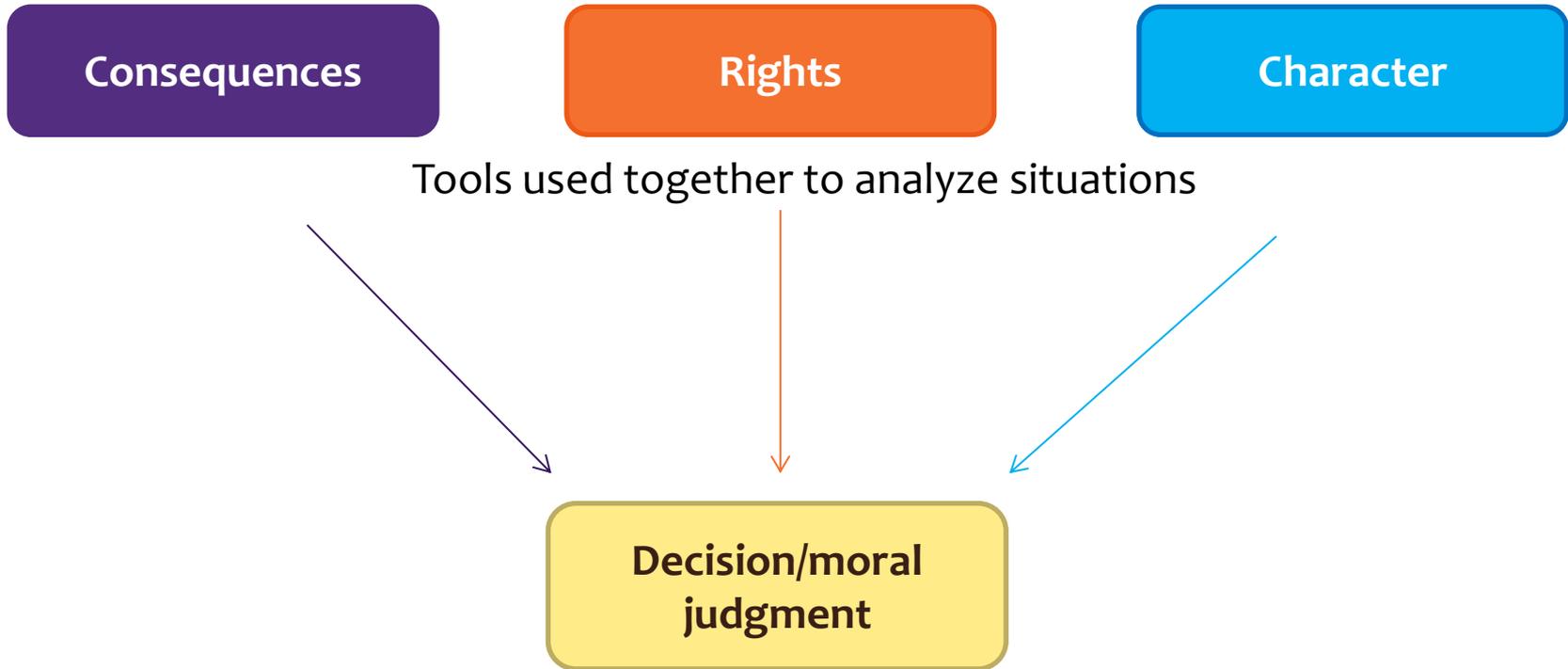
-Thomas White

Ethics of aspiration

A decision-making framework

The virtue of adopting multiple or redundant modes of analysis is, then, two fold: (a) convergence (or agreement) among them supports greater confidence in our conclusions; and (b) divergence (or conflict) signals the need to critically reexamine the issue in a search for reconciliation. In sum, convergence begets confidence, divergence stimulates discovery

-Randy Barnett

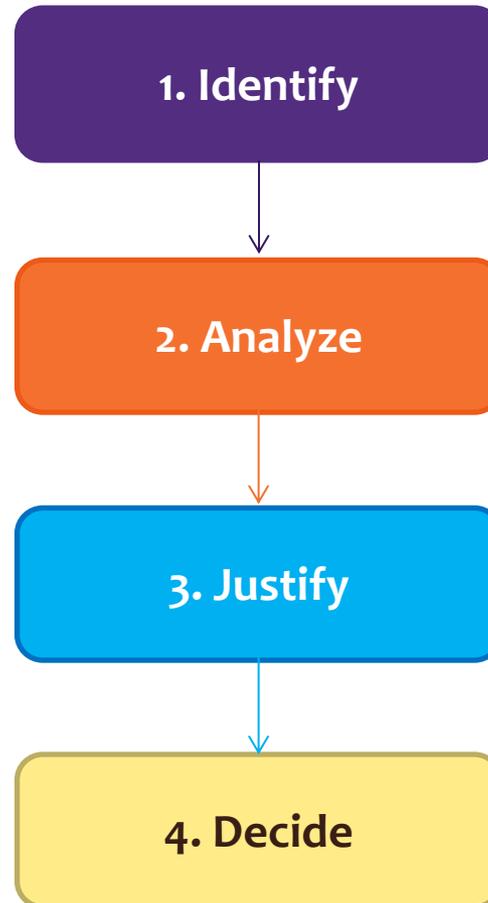


The norms of professional ethic are arrived at and are justified because and insofar as adherence to them:

1. Leads to good consequences
2. Involves and promotes respect for persons and their rights
3. Promotes the development of good character and integrity

Ethical decision making

A four-step approach



Ethical decision making

1. Identify

- What are the problems or issues under consideration?
- Who are the stakeholders?
- What do they care about?

These capabilities are particularly relevant in post-accident situations; e.g. contamination and evacuation has resulted in

- *Loss of control/autonomy*
- *Loss of community*
- *Loss of livelihood*
- *Fear associated with health*

Example capabilities that communities value:

- Ability to have good health, including adequate nourishment and shelter
- Ability to achieve self respect
- Social integration
- Happiness and enjoyment of life
- Self-determination
- Ability to form attachments and to be near loved ones

People will attach different values to different things

For example, Western cultures often value, or place emphasis on, the individual whereas Eastern cultures often place greater value on relationships/community

Identifying values involves actively **engaging and **communicating** with stakeholders as well as other experts and decision makers**

Ethical decision making

1. Identify



2. Analyze

- What are the problems or issues under consideration?
- Who are the stakeholders?
- What do they care about?

- What are the options or possible courses of action?

Consequences

- What are potential consequences, both short and long term?
- Are the consequences positive or negative?

Rights

- Does the action respect the rights of persons?
- Consider the various stakeholders

Character

- How does this effect (or what does the action say about) the character of a person
- Consider various roles and responsibilities

For the above, is there a better option?

Ethical decision making

1. Identify

- What are the problems/issues under consideration?
- Who are the stakeholders?
- What do they care about?

2. Analyze

- What are the options or possible courses of action?

3. Justify

- The realistic “why”
- Convergence begets confidence

Ideally, arguments for each ethical theory lead to the same decision/judgement, although situations are rarely black and white
Revisit analysis in difficult cases to see whether something has been overlooked or incorrectly weighed

In the absence of complete convergence, make a presumption in favor of two converging lines of argument, in effect going with the weight of the reasons

Analysis and justification may also often involve consulting other experts and decision makers

Ethical decision making

1. Identify

- What are the problems/issues under consideration?
- Who are the stakeholders?
- What do they care about?

2. Analyze

- What are the options or possible courses of action?

3. Justify

- The realistic “why”
- Convergence begets confidence

There is a need to “balance” values and to embrace the messiness of ethics; there may be incommensurable values and moral ties and indeterminacy – but this does not lead to relativism – there are still lots of wrong answers, even if there isn’t a uniquely right one.

Ethical decision making

1. Identify

- What are the issues under consideration?
- Who are the stakeholders?
- What do they care about?

2. Analyze

- What are the options or possible courses of action?

3. Justify

- The realistic “why”
- Convergence begets confidence

4. Decide

- What is the prudent course of action to maximize good and minimize harm?

Ethical decision making

4. Decide

- What is the prudent course of action to maximize good and minimize harm?
- Moving from ethical decision making into action
- Action typically requires
 - Confidence in the decision
 - Courage to implement decision
- Implementing decisions in post-accident situations will involve many parties

The value of prudence is the **cornerstone of the system of protection**: it allows to take into account the inevitable uncertainties of radiation science and to **act judiciously and reasonably**

How does this tie-in to the existing system of radiation protection?

Post-accident situations

Principle of Justification

- Do more good than harm
- Decision whether to allow re-habitation
- Definition and implementation of protection strategies, which incorporate individual protection actions

Justification of protection strategies goes far beyond the scope of radiological protection as they may also have various economic, political, environmental, social, and psychological consequences

1. Identify

2. Analyze

3. Justify

4. Decide

Principle of Optimization

- Maximizing the margin of good over harm
- Selection of best protection strategy under the prevailing circumstances, avoiding inequitable outcomes
- Transparency, balance, autonomy

Optimization of protection is *not* minimization of dose. Optimization of protection is the result of an evaluation which *carefully balances* the detriment from the exposure with the relevant economic and social factors.

1. Identify

2. Analyze

3. Justify

4. Decide

Use of reference levels

- Level of dose or risk above which it would be inappropriate to allow exposures to occur
- Set when decision is made to allow people to live in contaminated areas
- Three bands with associated guidelines (ICRP 103)

*The value of the reference level should result from a **careful balance** of many inter-related factors, including the sustainability of social, economic, and environmental life, and the overall health of the affected populations... appropriately including stakeholder views*

1. Identify

2. Analyze

3. Justify

4. Decide

Conclusion

- An approach to engaging practicing radiation protection professionals in the ethical aspects of decision-making was discussed, which ties in with the existing system of radiation protection
- Ethical decision making in radiation protection, particularly in post-accident situations, requires prudent balancing of many factors as well as active inclusion of stakeholders
- Including discussion of both ethical theory and a framework for applying the theory may make ethics more accessible to those working in the field, hopefully making them more apt to apply ethical principles in decisions and practice.

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