

Ethical decision-making in research: Identifying all competing interests

Commentary on "Six Domains of Research Ethics" (K.D. Pimple)

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ABSTRACT: *Ethical dilemmas are the result of conflicts between potential benefits or harms for two or more competing interests. Therefore, ethical decision-making implies a responsibility to identify those interests, harms, and benefits. For this purpose, researchers have responsibilities to the research, the subjects of research, other researchers, the institution, society, the environment, and self.*

The proposition that responsible conduct of research should be taught is increasingly assumed, even as the goals and substance of such training remain ill-defined. Unfortunately, most approaches to formulate curricula for responsible conduct of research (RCR) training have been *ad hoc* rather than derived from clear principles. A first attempt to remedy this problem is provided by Pimple.¹

The advantage of Pimple's analysis is that he has effectively applied the methods of moral reasoning to the question of what should be included in an RCR curriculum. Ethical dilemmas result because of conflicts between the potential benefits or harms of two or more competing interests. Assuming it is our responsibility to maximize benefit and minimize harm, then responsible conduct of research requires that all such interests be identified. Beginning from this principle, Pimple has created a new framework useful for thinking about the domains of RCR. This framework differs from the conventional approach to RCR training, which appears to be a reaction to problems as they occur, rather than derived from basic principles.

As Pimple notes, part of the utility of his approach is to make it easier to see what should and should not be included in RCR training. A useful alternative to Pimple's review of the *relationships* of researchers to others is to consider the *responsibilities* of researchers. With this slight change, it is possible to identify a wider—and possibly

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complete—listing of the competing interests that should be considered in making a responsible, ethical decision. With the addition of two new domains, responsibility to the environment and responsibility to self, a proposed alternate list is summarized in Table 1 (see p. 218).

Responsibility to consider all interests

To better understand how these domains might be useful, each is briefly described below along with a listing of examples of specific topics that might be included.

Responsibility to the research: Any discussion of responsible conduct of research should begin with the research itself. A commitment to integrity in science is central to every aspect of research ranging from its planning to its publication. Examples of relevant topics include *Data Management*, *Publication*, *Conflicts of Interest*, and *Research Misconduct / Whistleblowing*.

Responsibility to the subjects of research: Because the object of nearly all research is to better understand and to improve the human condition, much depends on the use of human or animal subjects. Any analysis of the ethical dimensions of such research necessarily includes the researcher's responsibility to consider and protect the interests of the subjects of that research. The two logical topics to be covered are *Human Subjects* and *Animal Subjects*.

Responsibility to other researchers: Research is a social enterprise involving interactions with trainees, with collaborators and with peers. Each of these relationships implies additional interests to be considered by the individual researcher. Researchers have responsibilities for teaching and mentoring their trainees (e.g., *Mentoring*). The interdependence of collaborators defines additional responsibilities that are necessary to optimize the conduct of research and minimize the risk of misunderstandings when it comes time to report that research (e.g., *Collaborations in Science* and *Authorship*). Finally, the infrastructure of scholarly activity depends on independent peer review for academic advancement, publication of research, and funding of new research. Thus, researchers have additional responsibilities that extend to their peers (e.g., *Peer Review*).

Responsibility to the institution: Although researchers can be found in many different types of institutions (e.g., for profit and non-profit, private and public, basic and clinical) the fact remains that most research is done within an institution. Because such institutions provide much of the infrastructure (e.g., buildings, libraries, other researchers) necessary for high quality research, it follows that the researcher should consider the interests of her/his institution. This responsibility is exemplified by the liability an institution carries for the actions of its investigators. For example, an investigator's failure to properly manage grant funds could result in significant harm to the institution. Although lists of RCR topics do not often include examples of responsibilities to the institution, one that would be appropriate is *Fiscal Management*.

Responsibility to society: An important dimension of any research is its implications for society. This topic is unfortunately absent from most RCR curricula. Its absence is difficult to explain given the public's ethical concerns surrounding many research topics (e.g., development of the atomic bomb, studies of possible racial correlates of intelligence, genetic modification of food crops, experimental use of human fetal cells, reproductive cloning). Clearly responsible conduct of research must include consideration for the interests of both the researcher's own society and the global community. While RCR courses rarely include this as a distinct topic, some forums do address the topic of *Social Responsibility*.

Responsibility to the environment: While responsibilities to both the research itself and to the various constituencies are often included in RCR courses, responsibilities to the physical world are seldom considered. Because choices of research topics and the ways in which research is done can have an impact on the environment, this is an additional dimension of responsibility for the researcher. One correlate of this responsibility would be *Environmental Health and Safety*.

Responsibility to self: The element not yet considered is a researcher's responsibility to her or himself. Various decisions about the ways in which research is done can have implications for harm or benefit to the researcher. While self-interest should not take precedence over the above responsibilities, consideration for self should reasonably be part of ethical decision-making. Minimally, a topic for consideration is the responsibility of a researcher to *Balance Work and Personal Life*.

Questions

In his analysis, Pimple proposed three fundamental questions: *Is it true, is it fair, and is it wise?* For the question of responsibilities of researchers, three somewhat different questions will help to define the consequences of possible courses of action: *What are the benefits, what are the costs, and what are the risks?*

How should these lists of questions and responsibilities be used?

If this framework has value, then how can it be used to make teaching of RCR more effective? At first glance, it appears that the list of responsibilities would serve well as the topics to be covered in a structured program of RCR instruction. However, like Pimple's six domains, the suggested responsibilities (Table 1) do not represent mutually exclusive considerations. For example, a proper discussion of research with human subjects must include the responsibility for data management. An alternative is to make these questions and responsibilities the framework for deriving an ethically defensible solution.

Descriptions of ethical decision-making typically begin with the challenge to identify all interested parties (e.g. ref. 2). The proposed list of responsibilities can be a checklist for any such discussion. In short, ethical decision-making by a responsible researcher would begin with reviewing the proposed list of domains of responsibility to

be sure that all potential interests have been identified. For each case in which an interest has been identified, the consequences of a given course of action could be measured by answers to the questions: *What are the benefits, what are the costs, and what are the risks?*

Table 1. Competing interests: Responsibilities and questions to be considered for ethical decision-making in research

Responsibilities
To the research
To the subjects of research
• Human subjects
• Animal subjects
To other researchers
• Trainees
• Collaborators
• Peers
To the institution
To society
To the environment
To self

Questions
What are the benefits?
What are the costs?
What are the risks?

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