

Can Bioethics Be Taught?

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OVER THE PAST SEVERAL YEARS a revolutionary change has taken place in the relationship between science and society, and science has become a social issue. Science is in a vastly more powerful position to influence world events than at any other time in human history. Though it will not serve our purpose here to review the long list of recent scientific and medical advances that demonstrate this truism, those innovations resulting from the “new biology” would figure prominently in such a catalog (Kieffer 1977 and 1978). How should our society cope with the new issues especially when there is no clear-cut ethical framework to guide us? Changes in both our societal and in individual ethical perspectives are imperative.

Today’s students will significantly influence the future direction of society. However, the aura of glamour excitement, and interest that surrounded social activism in the past is gone for this group, as well as for the majority of our citizens. In the late 1960s and early 1970s, large numbers of students and young people were actively involved in environmental issues and social, biological, and political questions, but “influencing social values” and “keeping up with political affairs” are no longer high priority goals (Astin 1977). Such issues today fail to capture students’ interest, much less their concerned involvement. Several reasons have been cited as the cause of this difference including:

1. The present generation of students has grown up with many of these problems and has become immune to their ramifications;
2. Students’ interest in idealistic values has declined and been superceded by a growing interest in materialistic goals including wealth, security and status.
3. Students are disillusioned; when their attempts to correct the flaws in society met with little or even nega-

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tive success, they dropped out, adopting a “the system is too big to change” attitude.

4. Finally, many people refuse to believe that our society has problems. In their view, we—as individuals and as a society—are really quite well-off, and if things are not getting better as quickly as we would like, certainly they are not getting worse.

For whatever reasons, it is apparent that individuals are not as easily moved to become involved in social problems as they once were.

Major problems still exist, however. Some have been momentarily alleviated; fewer have been corrected. We are not as indiscriminate as we were in the past about polluting our lakes or our watersheds with toxic chemicals. Guidelines have been developed to regulate the use of fetal tissue for research purposes and the manipulation of genetic material in organisms in research projects is now under some control. All of these measures are “first generation” responses—measures initiated to prevent immediate crises. Until now, our main objective has been to avoid a biological calamity. We are now entering a new phase aimed at finding effective and long-term resolutions for the issues arising from scientific discoveries and their technological applications are not so easily solved that a few general guidelines will make them go away.

Second-generation problems require analysis and deliberation. To respond adequately to them will require fundamental changes in our attitudes. Education at all levels is in a position to contribute much to this process. We must introduce a humanistic direction to our science teaching, changing the emphasis from the purely cognitive to the affective. As a beginning, we can insert into the curriculum what has been labeled the humanist’s “three Rs”: Responsibility, Realization of self, and Relating to others (Palm 1974). Essentially the “three Rs” can be reduced to the following proposition: We are free to make choices but we are bound by the consequences of our choices. We are not free to ignore how our choices affect others, both now and in the future. The exercise of freedom generates this responsibility.

Many science teachers who have posed socially relevant questions to their students experienced misgivings as to how they should have their students evaluate new issues. Calling students’ attention to such problems is a

relatively simple task—the popular media are filled with such information. It is, however, another matter to respond effectively to the questions students raise once these issues are brought to their attention. “How should we evaluate the uses of the new biology?” is a question that continues to perplex us long after an awareness of the problem has been created. Biologists find this a particularly difficult problem because scientific training usually does not include a methodology through which value questions can be analyzed. As a result, many instructors shy away from topics that are value-laden; or if they do introduce them (usually as an optional part of a unit or course), they leave students to work out the issues on their own with little or no guidance. Often such an approach leaves students bewildered and frustrated. A more serious result is the complete rejection of science by some students, which, in their view, has created serious hazards for society.

Furthermore, settling ethical issues by allowing any choice is unacceptable. This approach fosters an ethical pluralism where any choice is as good as any other, and it is simply a matter of preference whether this or that value is selected. The only criterion that must be met is sincerity. Of course, all ethical views are highly individual, but to allow a moral “free-for-all” is incompatible with having a well-ordered society. Unlimited freedom, be it social or ethical, carries with it the seeds of its own destruction. Contempt for legitimate authority and noncompliance with laws are all too frequently the outcomes when moral rules are out of touch with reality. If history has any lesson to teach, it is that a total concern for oneself leads to socially disruptive behavior.

Ethics Methodology

For the past several years, I have presented value questions to a wide range of audiences—from concerned laypeople with varied backgrounds to first-year college students, to graduate students, to professionals trained in the natural sciences, the social sciences, philosophy, and theology. All of these groups felt the pressing need to formulate a method that could be used to clarify moral dilemmas and resolve ethical conflicts. An approach for judging the ethical merit of a specific scientific or technological advance so that live options could be formulated for individuals and also assisting directly in the broader enterprise of developing public policy was needed. The remainder of this article describes the approach that emerged from these discussions. It has proven effective in responding to value questions. I present the method especially to this audience of professional biologists to demonstrate that some methodology does exist that can be applied to any learning situation and that does not require extensive training in the ethical, philosophical, or theological disciplines.

Ethics deal with “the good,” and ethical decisions are designed to promote the good. Ethics ask and try to

answer questions regarding what action is right; or in ethical terms, is the *ought* behavior. By definition, an ethical decision is based on reason alone—not on revelation—and, therefore, some mental process is followed in establishing an ethical position. Ethical decision-making involves, then, rather definitive steps. We can call this “ethical methodology.” Ethical methodology is the procedure one follows to arrive at a decision based on weighing different values. As with any procedure, we can improve our ability to make ethical decisions with practice if a rational methodology is used rather than taking a haphazard or intuitive approach to making value judgments.

In defining ethical methodology, we introduced a new concept—the concept of values. In ethical decision-making different values are compared; and in weighing these values, an ethical judgment is reached. Characteristics of values include:

1. Values indicate what is judged to be “the good.”
2. Values imply preference.
3. Values are supported by rational justification.
4. Values countenance strong feelings or intense attitudes.
5. Values specify a course of action.

To qualify as a value, a statement must satisfy all of these criteria. This requirement differentiates a value statement from a purely technical statement. The following are examples of two extremes of value statements: (1) All abortions are wrong. (2) Abortion is an exercise of a fundamental right of women to the privacy of their own bodies. Both statements reveal what is judged as “the good”; both imply a preference that can be supported by rational justification. Certainly each provokes strong feelings on the part of its supporters; and each specifies a course of action.

This introduces a new problem, however: because most ethical decisions involve choices between different outcomes, and humans are likely to place different values on different outcomes, how do we choose the *ought* behavior? The seemingly simple question of what is “the good” has eluded moral philosophers for centuries. In making ethical decisions, this question will not occupy our attention because in responding to the questions posed by the new biology, we are engaged in that branch of ethics called “normative” ethics (as opposed to meta-ethics that is concerned with epistemological or semantic matters as they relate to right conduct).

Normative ethics deals with developing a set of principles that guide us in judging which acts are right or wrong, good or bad, obligatory, permissible, or forbidden. Ideally, normative ethics embodies some core of values that serve as the foundation for important value decisions. They function as guides for directing correct or *ought* behavior. To have a normative ethic is to be prepared to do something; and the more developed the normative ethic, the more forceful and systematic will be the

FIGURE 1. Posing an Ethical Problem—the Perception of the Problem (Step 1)

Case Study: Food Incentives for Sterilization

Value Object: Are food incentives for curbing family size a just policy for bringing about population control?

Case Study: Sterilizing the Retarded Child

Value Object: Can a mildly retarded child be sterilized only with the consent of the mother?

Case Study: The fetus as an “organ farm”

Value Object: Should a genetically related, six-month-old fetus be deliberately sacrificed so that its kidneys can be transplanted to an adult whose death from kidney failure is imminent?

Note: Students should have available a full description of the case study, not simply a one-line description as is given above.

course of action. This is the kind of ethics required to respond properly to the issues arising in the life sciences.

Humans develop their ethics based on experience through discussion leading to communal acceptance of what appears to be right and good and rejection of what is judged to be wrong or bad. Further, concepts of what is ethical, right, and good change as humans acquire new knowledge and experience or through continuing debates. The touchstone of ethical choices is the human judgment of whether something is right and good. Using these tactics, societies and individuals can develop effective ways of sanctioning the uses of new knowledge and technology, even when these uses initially conflict with existing societal or individual legal, moral, or ethical codes. How can this be done?

One way to examine an ethical issue is this:

1. Perceive that an ethical problem exists by stating it in plain language.
2. List all recognized alternative courses of action both immediate and long term.
3. State all the values that bear on the identified courses of action.
4. Analyze the individual values and their consequences in ethical terms.
5. Rank order the studied values on a preferential scale from most to least desirable.
6. Make a selection on the basis of this scaling and analysis.

This approach is useful for two reasons: first, it insists that a choice be made (the issue under question is not left

hanging); and second, the choice is validated in ethical terms. The procedure begins with the recognition of an ethical problem. This step is not always easy, but it can be done. One way of focusing attention on a specific issue is the familiar case study approach because it poses real issues concisely. Case studies are descriptions of real or hypothetical events that illustrate one or several ethical dilemmas arising from a particular scientific or medical application. An excellent source of case studies related to biomedical issues is *Case Studies in Medical Ethics*, edited by Robert Veatch (1977). The important point to emphasize in this first step of ethical analysis is that the identification of the problem should be as clear as possible to reduce uncertainty and ambiguity. By insisting on this, the discussion can be more easily kept on track. I have found it useful to pose the issue in question form. This approach encourages further analysis because (1) the problem is clearly stated and it must be answered; and (2) a series of steps will be required to arrive at the solution to the problem. I label the statement of the ethical issued in question form the *value object*—that object about which a value judgment must be made. By giving it a special name, students will be impressed with the idea that clarifying the ethical problem under study has a distinct role to play in ethical reasoning. The ultimate point of this method is always—has the question been answered? Again, careful formulation is essential. Figure 1 illustrates the first step in posing an ethical problem.

The next step in the procedure is listing *all* possible courses of action. A common error here is to restrict the choices to as few as possible, usually in “either-or” form. Humans seem to prefer to minimize complexity by reducing the number of choices to manageable numbers, but students must be encouraged to progress beyond this stage.

After identifying all of the possible courses of action, the next step in the methodology requires that we list all conceivable values that bear some relationship to the case under study. Here, too, the obvious difficulty is with identifying all of the pertinent values. Again, it is helpful to formalize each value by stating it in writing, only in this instance, these are rendered as simple declarative statements. Each sentence should embody a single value. This is desirable because analysis can be more effectively done if only single values are compared. Figure 2 lists examples of value statements.

As I stated previously, values must be supported by rational justifications; therefore, students must defend the positions suggested by their respective values. Because this process engages students in a serious, and sometimes agonizing, search for ethical validity, it is the most instructive part of the whole procedure. Of course, meta-ethical and metaphysical opinions have their place in such discussions because the basis of any ethical theory ultimately derives from some particular value theory. Articulation of personal world-views is extremely valua-

FIGURE 2. Examples of Value Statements

Case Study: Food Incentives for Sterilization

1. The right of individual self-determination includes the right to procreate.
 2. Society has the right to protect itself from forces or actions that might upset or destroy it or prevent it from carrying out social policy aimed at promoting the common good.
 3. Discrimination against a single group or groups for any reason is ethically unacceptable.
 4. Incentive programs are unjust since they tend to exploit poverty.
 5. Sterilization programs without adequate social security policies irretrievably threaten the welfare of those sterilized.
 6. Economic injustice, not lack of food, accounts for much of the suffering in the world today.
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ble both to the individual enunciating the view, who is forced to identify and then defend his/her position to others, and to other students whose own views can be broadened or strengthened by the interchange.

Rank-ordering of the identified values is another difficult part of the procedure. This is essentially what ethics is all about—the rank-ordering of values. Values imply preference; therefore, values between two people, applying the same methodology, can conceivably result in two different courses of action. This is, no doubt, the most bothersome aspect of ethical reasoning.

Are there ways we can adjudicate this variety of preferences so that some reasonable consensus can be reached? Unfortunately, the answer is no. No unmistakable set of rules once and for all settles ethical questions unless one leaves the domain of ethical reasoning and considers only moral absolutes. Though there are many different types of moral logic, two or three stand out in the field of biomedical technology. Thus, there are some measures that can be used so that though no one value can be the sole claimant to ethical validity, there may be only a few *good* answers. Furthermore, those who engage in ethical analysis must realize that the objective is not to force an ethical position on a student. Instead, the emphasis should be on presenting alternatives and validating choices in *ethical terms*. We are still in a period of study and analysis; societal consensus is yet to be reached in many cases.

One formula for evaluating the rightness of an action is to compare the consequences with one's value set by simply asking, "Could I live with this?" If the answer is "yes," one can assume that the selected action is consist-

ent with one's own values. The course of action dictated by the value is then judged as ethically valid. This procedure is nothing more than placing oneself in another's shoes, and postulating whether a particular action would be acceptable if one had to personally experience the consequences. If, on applying this test, one is emotionally uncomfortable, then it is necessary to ask, "Why does this action bother me?" A reconsideration of the value is in order to search for, and perhaps remove, the disturbing element. This process may lead to an entirely new ethical statement of action.

A second method for testing the validity of an ethical choice is determining whether one can apply the more general principle of universalizability. This principle assumes that because a position specifies right conduct directing what ought to be done, then any person under similar circumstances ought to perform the selected behavior. Directly related to this principle is another aspect of ethical decision-making, which asserts that simply deciding to take a particular action has no ethical weight because at a later time and under exactly the same circumstances, an individual might decide to act differently. Ethical behavior has broader implications. Once the decision is made that action X is ethically correct, then any individual at any time, under similar circumstances, ought also to take action X. Thus, the test of ethical validity according to the principle of universalizability, is this: What would be the results if everyone did this? Both long-term and short-term consequences must be considered in responding to this question.

The principle of universalizability is a key test for the validity of ethical positions, and is, in fact, considered so important that many ethical philosophers contend that an individual deserves respect as a truly moral person only if that person is willing to universalize his/her ethical judgments.

The "proportionate good" view is a third test of ethical validity. In this approach, an act is judged ethically valid, or good, when it helps people; it is ethically invalid, or bad, when it hurts people. Situations are examined and relative choices made on the basis of what is judged to offer the most good. This view is known as "consequentialist ethics." Its proponents contend that most of us in our daily lives make decisions on the basis of the proportionate good. "Proportionate good" really means that moral flexibility is required; thus, some acts that may be performed in certain circumstances may not be performed in others. The only test is the greatest good.

The consequentialist school of ethics is at variance with the universalizability principle. Rather than insisting that a stated ethical behavior is applicable to all individuals in similar situations, the proponents of proportionate good insist that sometimes specific actions are right; sometimes they are wrong; sometimes they are good; and sometimes they are bad. On questions surrounding the ethical issues of abortion, egg transfers, behavior modification, life-prolonging medical treatment, popula-

tion policies, environmental questions—or any area where an ethical judgment must be made—there are no absolutes, no “open and shut” authority. Ethical matters are not settled in advance.

Fletcher (1974) suggests these guidelines for making proportionate good choices:

1. Compassion for people as human beings;
2. Consideration of consequences;
3. Proportionate good;
4. Actual needs take precedence over ideal or potential needs;
5. A desire to enlarge choice and reduce chance;
6. A courageous acceptance of our responsibility to make decisions and of the outcome of our decisions.

To continue with ethical methodology, the next task is to display a rank-order of options for policy choice. Keep in mind that a single option may not result from the analysis, nor is it absolutely necessary at this stage in our thinking. Converting values to viable options is also a complex part of the procedure. The previous testing of value positions should have clarified the pros and cons so that respective values can be compared. One useful process here is to identify “trade-offs,” as an economist might do in deciding on one policy over another. This method may not be useful in all situations but it is effective in determining the benefits of one policy over another. Ethicists might, for example, consider the advantages and the disadvantages of inaugurating a national health service; on the basis of the “balance sheet” developed in this comparison, a choice could then be made. In other circumstances, the principle of universalizability might be applied to settle an issue such as the provision of health care for all in need, regardless of their ability to pay.

When these methods for making decisions are successful, ethical preferences can be chosen from practical possibilities so that, even though the best decision that satisfies all concerned cannot be made, at least the worst decision can be avoided. This is the object of using an ethical methodology. Not every option possible is ethically valid. By forcing students to focus on value considerations and by applying a few relatively simple ethical measures, we can show students that not all the answers are viable alternatives. Thus, we reduce ethical plurality by minimizing the available options to the few that have stood the scrutiny of ethical analysis.

Biology Teachers and Ethics

This article describes some practical ways to examine the process of making ethical decisions. My purpose in presenting these methods has been to encourage biology teachers to actively engage themselves and their students in the search for a new ethical structure. We must move from merely describing the many problems arising

from the new biology to a second-generation phase—an analysis that can lead to the effective resolution of the many vexing problems we face. One need not be a professional ethicist to consider these questions but neither will the adoption of these simple roles make one a practiced and polished ethicist.

Much progress is being made in teaching students the techniques needed to analyze value issues, and many schools have instituted programs in value clarification. Now we need to apply our knowledge.

Ethical decision-making is difficult at best. No value decision is made from perfect knowledge, and because we cannot see into the future, we will make mistakes. We will have false starts, but we must accept them. To accommodate the changes in biology and medical technology, we must change our ethical thinking. I invite you and your students to join in this quest for a new ethic for the new biology.

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I left the woods for as good a reason as I went there. Perhaps it seemed to me that I had several more lives to live, and could not spare any more time for that one. It is remarkable how easily and insensibly we fall into a particular route, and make a beaten track for ourselves. I had not lived there a week before my feet wore a path from my door to the pond; and though it is five or six years since I had trod it, it is still quite distinct....The surface of the earth is soft and impressible by the feet of men; and so with the paths which the mind travels. How worn and dusty, then, must be the highways of the world—how deep the roots of tradition and conformity...

Henry David Thoreau
(Excerpted from *Walden*)

The unexamined life is not worth living.

Socrates