# Bioethics Is a Naturalism

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In this chapter I argue that bioethics is a naturalistic philosophy in the sense associated with the tradition of American philosophic naturalism, and that the genealogy of bioethics as a predominantly American intellectual field helps account for bioethics as a naturalism. To offer these views is not to deny that there have been multiple intellectual influences on the origins of bioethics. It is patent that several faith traditions, especially Roman Catholicism, and several secular moral philosophic orientations, especially utilitarianism and deontology, have heavily influenced both the methods and the substance of modern biomedical ethics. It is also clear that bioethics has arisen in other national contexts, particularly in the United Kingdom and the Commonwealth countries, in western Europe, in some Latin American countries, and increasingly in central Europe.

Nevertheless, one of my premises in this chapter is that the social institution of bioethics has an undeniable American flavor and that bioethics is mainly an American field in its origins and, perhaps more controversially, in its style. By the latter claim I mean that bioethics emphasizes themes such as moral autonomy and pluralism and that in its practice, from calling for clinical ethics consultations to convening national ethics commissions, it is consensus oriented. In fact, a former director of the French equivalent to the U.S. National Institutes of Health has complained that bioethics commissions are so preoccupied with consensus that consensus is often forced on society. Although consensus is not exclusively American, American society is exceptional in being autonomy driven in its ideology and pluralistic in its makeup. Perhaps for this reason, our public discourse is particularly preoccupied with the problem of achieving consensus.

### 4 Pragmatic Bioethics

Few bioethicists—and not all philosophers—have a firm grasp of the views associated with American philosophic naturalism. Therefore, I first need to explicate that philosophy, partly by distinguishing it from the somewhat more familiar epistemological naturalism associated with thinkers such as Willard van Orman Quine. I then move to an account of some ideas in ethical naturalism, after which I am in a position to explain more fully why I see bioethics as a naturalism.

# American Philosophic Naturalism

Although pragmatism may be regarded as a philosophic method, American philosophic naturalism is a worldview most closely identified with the writings of Charles S. Peirce, William James, John Dewey, George Herbert Mead, and Clarence Irving Lewis.<sup>3</sup> Both pragmatism and naturalism have come to be identified as well with the writings of a more recent distinguished philosopher, Willard van Orman Quine. However, the similarities and differences between what may be called epistemological naturalism and philosophic naturalism are instructive.

Both naturalisms reject foundationalism, the notion that knowledge must be grounded in a priori methods of inquiry. Versions of foundationalism are represented in many of the most influential philosophies, Platonism being the classic example. The naturalisms find the same essential flaw in all philosophies that appeal to transcendent essences or structures: These philosophies fail to see that knowledge can—and in the final analysis must—be understood as embedded in the world of our experience rather than in some separate realm of being. Foundationalism is not only a failure to apprehend knowledge as "a natural phenomenon that must be examined in its natural setting"; 4 it is also a failure of nerve, a fruitless and even pathetic attempt to reach into some great and mysterious beyond for answers that can be attained only within experience.

Part of the appeal of foundationalism lies in its promise that the key to knowledge can be found without doing the hard work of inquiring into the world as it is. Rather, according to naturalist philosophers there is no escaping the nitty-gritty of such work if any real knowledge is to be found. All else is a philosophical form of that emotional refuge known to psychologists as magical thinking. The classic critique of this poignant, ancient, but finally tragic quest for certainty is found in Dewey's critical work of that title.<sup>5</sup>

Both naturalisms thus agree that a satisfactory account of the nature of knowledge can be achieved only by attending to the methods and techniques exemplified within experience, and that by so attending an account can be given of the possibility of knowledge itself. In other words, the two great epistemological questions must be approached in a naturalistic spirit. The pragmatic element of this attitude should be apparent; indeed, it is a pragmatic temperament that leads one to a naturalistic worldview. Further, when one engages in a naturalistic inquiry into knowledge by examining the ways in which it is actually attained, one notes certain means and patterns that are more productive in the pursuit of knowledge than others. These lessons are inherently normative, in the sense that they provide guidance concerning the ways that the expansion of knowledge ought to be pursued. Some of these normative lessons have moral as well as instrumental implications, insofar as they provide counsel about, for example, the most economic and therefore least wasteful ways to pursue what can be known.

Epistemologic naturalism and American philosophic naturalism also agree that attention to the ways knowledge is gained shows a continuity between these means and the method of science itself. At this point, however, the two naturalisms begin to part company. The pragmatic temperament can be traced to a rejection of a "spectator" theory of knowledge associated with Cartesianism, the view that the observer stands apart from and over against the object of knowledge. The pragmatic naturalist understands that the knower and that which is known are in the same matrix, just as the inquirer is within nature and is one of its entities along with the object of knowledge, not outside of nature or fundamentally disconnected from the object.

Yet epistemological naturalism, for all its powerful contributions to modern philosophy, is too closely associated with causal theories of observation, such that causal processes are said to produce true belief-states. The psychological behaviorism of Quine, for example, is in the tradition of J. B. Watson and B. F. Skinner, who stressed a stimulus-response model that places observer and observed apart from each other in static relations. But the "behaviorism" of Mead and Dewey stresses the dynamic interaction of the knower with that which is to be known, the fact that the attitude (physical as well as psychological) of the inquirer influences the way the object is apprehended, just as the object influences the inquirer's

experience. To use Dewey's phrase, the stimulus-response relation is not an arc, but a circuit.<sup>6</sup>

In rejecting epistemological naturalism, American philosophic naturalism also rejects the notion that the ultimate authority on the nature of the world is natural science, and that the only questions that can legitimately be framed about the world must be expressed in the terms of natural science. The philosophic naturalist stresses the method of science rather than the content of science. Too great an emphasis on the content of science can lead to scientism, which is the substitution of dogma derived from current scientifically validated ideas for the open-minded inquiry and critical thinking characteristic of the method of science.

According to the philosophic naturalist, science can flourish only through an active engagement of the knower with the known, operating within the same matrix in a dynamic interaction through which emerge the meanings that make knowledge possible. Moreover, the method of science does not result in only scientific information, and it is not used only in "scientific" contexts, for the method of science is mainly an intensified version of the pattern of successful investigation into any subject matter. Therefore, the meanings realized from inquiry may be the data typical of a scientific setting, but they may also be aesthetic signifiers or moral guides or some other type of information suitable to a certain type of inquiry.

Consistent with its conception of the dynamic interplay between the knower and the known within the tissue of lived experience, philosophic naturalism also emphasizes the experimental character of experience. Of course, not all experience is experimental in the systematic fashion of the method of science, but all experience is said to be continuous with that more intensified version characteristic of scientific inquiry. In fact, philosophic naturalists contend that scientific investigation is rooted in the same tendencies that are brought to experience in general: Stimulated by a problematic situation, the organism applies its various resources (prior experience, creative imagination, and so on) to the problem, implements a hypothetical solution, assesses the success of the endeavor, and, if necessary, formulates an alternative approach.

Philosophic naturalism's rejection of the notion that only science can give a legitimate account of experience has been embraced by another recent prominent philosopher whose views should not be too closely identified with naturalism. Richard Rorty rightly credits American naturalists, especially Dewey, for a pioneering critique of foundationalism. In elaborating his own version of that critique, Rorty has attracted more attention to some of Dewey's ideas than has been given to them for over fifty years. However, Rorty does not accept the philosophic naturalists' positive doctrine concerning the nature of experience and the intellectual tools inherent in experience. Hence Rorty contends, with the naturalists, that the content of science is only one way of representing the world, that it does not have sole license to confer legitimacy upon experience; but he does not appreciate that the method of science as intelligent inquiry has characteristics that inhere in all experience. Therefore, he is left to conclude that science is merely one sort of conversation among many, with none having any particular claim to priority.

Philosophic naturalists, while they agree that there is no privileged representation of experience, find within the method of science ways of knowing that are characteristic of all successful modes of representing experience, including the aesthetic and the moral. That is, not only scientific explorations, but also artistic projects and ethical inquiries, exhibit qualities of intelligent examination of the material provided by experience, including purposeful efforts at interpreting that material, revising it so that it bears the imprints of the examination, and engaging in further reconstructions in light of previous results. In other words, there are no hard and fast lines between different forms of inquiry into the nature of experience; each bears some characteristics of the others. In turn, these modes of inquiry into experience identify generic qualities of existence that extend well beyond the self-limited conditions established by the terms of even the most erudite conversation.

One element that the notion of conversation does capture is the social, and this is an important feature of philosophic naturalism, which views the interpersonal dimension as crucial for all modes of representing experience. Inquiry, whether scientific, aesthetic, or moral, is viewed as a social enterprise. The role of community is perhaps most apparent in science, wherein the opinion of a single investigator is subject to scrutiny by many colleagues who have the opportunity to confirm or disconfirm the hypothesis that has been proffered. Only when the community of inquirers reaches a consensus can the matter be said to have been settled, and even then it is settled only until no further doubt is raised.

In aesthetic affairs the success of a composition is dependent on the judgment of a community of appreciation, and in ethics the soundness of a principle or maxim of conduct depends on the judgment of a moral community. In a still more general sense, all forms of representation, all symbol systems and modes of signification, obviously require the cooperation of a linguistic community. In this respect the early American naturalists such as Peirce and James anticipated Ludwig Wittgenstein's famous private language argument, while Dewey, Mead, and Lewis elaborated its sociological and logical implications.

#### Ethical Naturalism

The American philosophic naturalists wrote extensively about the implications of their views (which were by no means as uniform in their details as my very general summary might suggest) for many fields, including metaphysics, epistemology, logic, social and political philosophy, education, semiotics, and aesthetics. But it might well be that they had less to say about moral philosophy than any other field. The most comprehensive anthology of writings central to American naturalism in the past fifty years, for example, includes only two selections on ethics, one of which was included in a volume published in 1944,8 the other originally published in 1965.9

One explanation for this relative lack of treatment of moral matters may be that American naturalists have been more interested in the process of inquiry, including inquiry into moral questions and the way society works out ethical quandaries, than in the big questions associated with classical moral philosophy, including What is the nature of the good? and What is the good life? Much of Dewey's theoretical ethics, for example, emerged through his writings on the nature of inquiry and community. Dewey's substantive ethical views appeared in his less technical essays—and in his social activism—related to concrete moral problems, such as his support of equality for women, his championing of civil liberties, and his opposition to American involvement in World War I.

Another reason for the paucity of commentary among American naturalists on ethical theory per se is that they do not accept the traditional agenda of moral philosophy, which engages in efforts to justify moral claims. The preferred form of justification is deductive, with one or more

general moral principles comprising the major premise of an argument. But naturalists reject not only the a priori metaphysics of moral principles already noted, but also the abstraction from actual moral experience represented in this conception of justification. Simply put, unless we are engaged in a mere academic exercise, we do not confront moral problems separate from our daily lives.

Actual moral problems are living problems and problems of living; they are "contexted" or embedded in states of affairs. Reminiscent of Aristotle's conception of practical wisdom, naturalists contend that actual moral problems call forth a wide range of skills, including a capacity to generalize from previous experience and an ability to project imaginatively what it would be like to select one alternative for action or the other. Context also helps determine our moral obligations, for what is an evident duty in one state of affairs is not at all apparent under another. Consider, for example, how the environment has been elevated to a moral concern in a short time by public awareness of such phenomena as the fragility of the ozone layer.

It is clear that American philosophic naturalists cannot accept the notion, so important in so much modern ethical theory, that there is a discrepancy between facts and values. The celebrated naturalistic fallacy is a fallacy only if expressed in a fashion that begs the question, according to naturalists, for it is patent that in the world of experience moral judgment requires that one be informed of the facts. What kind of ethics is it that can afford to ignore actual states of affairs? One way to characterize the error inherent in the idea of the naturalistic fallacy is that it suggests there can be only one sort of relationship between facts and values—namely, a deductive one. The philosopher Owen Flanagan has noted that inductive and abductive processes are alternatives that the naturalist does well to select. Induction refers, of course, to generalization from previous experience, and abduction (a logic elaborated by Peirce) refers to the formulation of novel hypotheses based also on prior experience.

Even the idea that facts and values can be readily distinguished is doubtful, considering that facts are often, if not always, value laden and that values are often encountered as facts. The value-ladenness of assertions that are held up as fact is now a familiar phenomenon. Less familiar is the insight, associated especially with Dewey but also found in James's writings, that values are encountered in experience as features of states of affairs.

The work of the cultural anthropologist is perhaps most consistently associated with values encountered in the field as facts in the worldview of a people. To turn this account upon ourselves (the inheritors of the western European worldview), the proposition that human rights are embedded in human dignity is so familiar as nearly to have lost its character as a value and claim authority as a fact.

Another prominent feature of ethical naturalism to which I have already alluded, but which may be brought out more sharply, is an emphasis on the situation or, perhaps a better term, the context of moral decision making. As has been said, what counts as a moral problem is tied up with a matrix of conditions that both define the problem and render it perceptible. For naturalists the context-dependent nature of moral choice is very nearly self-evident, for how else could any choice make contact with the issue at hand if it were not formulated in the light of the actual circumstances? Critics of naturalism may deride this approach as an invitation to "moral relativism," since it suggests that general principles or rules will have, at best, limited applicability in different situations. Naturalists embrace this conclusion. They especially see general rules or principles as providing orientation and guidance, but also as carrying the seeds of dogmatism if not subject to interpretation in light of the facts of the case at hand. This position is entirely consistent with their view that inquiry requires openness, which is a methodological principle rather than a substantive general rule.

Similarly, naturalists regard choice as prior to rules in terms of actual experience. When faced with a concrete dilemma, moral or otherwise, people do not in fact consult theory, but "apply ourselves" to the problem. To be sure, this application of oneself includes application of what one knows about general rules, but it also includes application of one's experience with previous similar problems, as well as judgment, intuition, temperament, and "gut feelings."

In other words, we bring to bear on an actual problem the greater or lesser part of the totality of our experience. An individual who literally consulted an ethics textbook when faced with a concrete dilemma would rightly be regarded as either naive, obsessive, or simply lacking in understanding of the nature of ethical principles. Rather than implying a conclusion that must be drawn in particular cases, moral generalizations represent the retrospective aggregate insights gleaned from eons of human experience—or so we hope. Whatever wisdom inheres in such generaliza-

tions cannot be deductively transferred to a problem at hand; rather, wisdom in the form of judgment or what Aristotle called practical wisdom is also required in the assessment of the problematic situation with the aid of theory, rules, and principles.

By now it should be apparent why philosophic naturalists are not concerned with justification in the way that mainstream ethics has come to understand that as part of its mandate. Principles do not justify a means of resolving a problem, moral or otherwise; only experience itself can do that. And in the real world any resolution always has a tentative quality, is always subject to revision. Only in a metaphysical fantasy are solutions permanent. "The Good," therefore, is not a mere static thing, but a project, one that is undertaken not by isolated individuals, but by social individuals, generally persons working together, even if often at odds. The Good, that which is desirable, is an ideal that helps organize human energies, which are in fact engaged in continuous social reconstruction. Conflict is frequently a feature of this process, but so is cooperation. Both conflict and cooperation are largely superficial qualities of social reconstruction, however. What is more important is the quality of the deliberation with which we have entered into the reconstructive process.

Like any dimension that calls on the method of inquiry, reconstruction requires intelligence, and in the world of actual human affairs it requires social intelligence. A socially intelligent response to a problematic situation that seems to require reconstruction resembles the method of science. It requires, among other things, reliable information, an understanding of the problem, a plan of action, a purpose or "end-in-view," and a willingness to engage in a further reconstruction if the hypothesized approach proves unsatisfactory.

These are among the crucial elements of ethical naturalism. It now remains to see not only how the field of bioethics exemplifies these elements, but how at least some of the practices associated with it might be viewed as a vindication of ethical naturalism.

#### Bioethics as a Naturalism

"By their fruits shall ye know them." This biblical admonition was cited by William James in one of his many attempts to define the pragmatic method. In this section I take a pragmatic view of the field of bioethics, for

in ascertaining exactly what bioethics is I am less concerned with how it is represented by its participants or commentators than how it presents itself as an institution, a set of social practices.

The "practice" of bioethics occurs in numerous settings and groups: case conferences, ethics committees, classrooms, institutional review boards, print and broadcast media, professional organizations, bedside rounds, governmental panels, and civic organizations—and these do not exhaust the list. These settings and groups do have some elements in common, among the most important of which is that all of them involve communication, usually within a small group. This underscores the fact that bioethics is a social activity. Even when the ultimate goal is communication about an issue with a large group, such as members of a profession or the public in general, discussion tends to emanate from a relatively small number of initial participants.

It may be said that characterizing bioethics as a social activity is trivial, since by naturalism's own lights any intelligent activity is social. But the sociality I am referring to here is of the more quotidian variety. Compare the creative process in the traditional humanities disciplines with that of bioethics. It is a commonplace that humanistic creativity, while obviously profoundly influenced by teachers and contemporaries, has an ineluctably individual dimension. Put simply, it is the rare important document in the history of philosophy that has more than one author, and one that does is often labeled a manifesto. Yet important writings in bioethics appear regularly with multiple authors without prompting surprise.

One might argue that the difference can be explained by the relatively more fundamental concepts that are dealt with in philosophy, which require individual reflection, as compared to the concepts dealt with in an applied field such as bioethics. Apart from the fact that it is not always easy to tell which idea is more basic than another—and the problem of explaining why one sort of reflection calls upon individuality more than another—this account does not conflict with the observation that bioethical work, even in its written form, has a social character that the traditional humanities tend not to have.

As I have argued elsewhere, the social character of bioethics is closely associated with its institutional functions. To see this it is necessary to distinguish bioethics from the traditional humanistic disciplines in another way. Humanities professors may—and arguably should—leave their stu-

dents in a state of doubt about some great human issues, such as the meaning of personhood or the significance of death. The Socratic tradition renders this view of humanistic pedagogy more than respectable.<sup>10</sup>

Bioethicists, too, may adopt the posture of the perpetual critic, but only insofar as they occupy the role of professor. Put bluntly, those who leave the seminar room for the hospital conference room either drastically change their professional role or soon find themselves unwelcome or ineffective in the latter setting. Raising hard questions is important work, as is challenging prejudices and preconceptions and "speaking truth to power," but when action is required, as it is in virtually all the contexts in which medicine functions, the critical posture is simply not enough. Perhaps the most striking personal effect of bioethics on those who, like me, have undergone the transformation from humanities professor to bioethicist, is the way it forces those who might otherwise remain perpetual critics to "cash out" their views and take a position.

In framing matters in terms of their "cash value" I have made reference to the inherently pragmatic strain in bioethical practice. The naturalistic strain emerges insofar as the views that cash out do so influenced as much by the problem at hand as by any prior theoretical views that participants bring to the table. In other words, it is rare (in my experience at least) to hear an ethics committee member explicitly appeal to the problem of balancing autonomy and beneficence, for example. Rather the facts of the case, the medical uncertainty, the suffering involved, its human importance, the legal and administrative complexities, and other more immediate factors tend to overwhelm theory.

To be sure, theory is often brought to bear on the problem at hand, but far more gingerly than is normally the case in the textbooks. And when theory is brought to bear, usually by oblique references or the shorthand use of terms such as *self-determination*, it bears none of the earmarks of deductive moral argument so dear to the hearts of many philosophical traditionalists. Instead there is a tentative and "hand-over-hand" quality to many of these conversations, with ethical theory one foothold among a precious few others, including prevailing practices, theological paradigms, institutional policies, useful analogies, and the law. Other resources are previous cases, and adumbrations suggested by casuistry in moral reasoning by Jonsen and Toulmin, which has generated so much enthusiasm in the bioethical literature. These

resources blend well with naturalism's emphasis on the moral guidance available in experience.<sup>11</sup>

When ethical naturalists survey instances in which moral problems have been solved, they find that the most important resources are those that dwell within the situation rather than those that are introduced from outside of it. Principles are viewed, along with theories and other generalizations, as reducible to hypotheses about the realization of desirable outcomes. Among the resources inherent in the problematic situation are moral values themselves. When an ethical course is unclear it is not owing to lack of moral options, but due to an excess of them. The challenge lies partly in ascertaining what outcome is both most desirable and within reach, then in constructing a means for its realization. Consider the example of physician-assisted suicide. What is wanted by all who dispute the matter is the most dignified death consistent with respect for life. Setting aside abstract recriminations about right and wrong, what concrete steps would be most likely to ensure the generally desired outcome?

I alluded to the casuistic explorations of Jonsen and Toulmin as compatible with a naturalistic bioethics. I now want to go further and argue that many of the arguments and accounts of bioethics are implicitly naturalistic, that the naturalistic orientation in bioethics is prevalent but unrecognized. A reliance on experience gleaned from previous cases is only one example, and one that has even been embraced by Tom Beauchamp and Jim Childress in the most recent edition of their influential text. <sup>12</sup> Other examples can be drawn from references to "species-typical functioning," as in debates about the meaning of health, <sup>13</sup> from attempts to rationally establish that fetuses have moral status through studies of fetal development, <sup>14</sup> from appeals to neuroanatomy in arguments about brain death, <sup>15</sup> or even from generic attempts to highlight values as proper parts of medical education because they are inherent in medical practice.

The whole of efforts to incorporate bioethics into policy creation, to render values explicit in public life and evaluate political structures in their light, as in the federal and state ethics commissions now so popular, can be seen as a Deweyan adventure. Bioethics is not only capable of being understood as ethics naturalistically pursued; it is already a naturalism in light of the kind of field it has become since its beginnings in the 1960s.

The last comment requires some elaboration. It may well be argued that the roots of bioethics include some decidedly non-naturalistic strands, especially the theological ethics that were so important to the beginnings of the field. The important role of theologians and their deontological orientation in the early period is undeniable, but what is noteworthy is that as the field grew in the 1970s, its style and mode of argument became decidedly more empirical or "consequentialist," and theologians and moral theology steadily lost influence. A sociological explanation for this shift might point out that the institutional environment of bioethics changed from small conferences dominated by churchmen in the 1950s and 1960s to major universities and government panels in the 1970s and 1980s. <sup>16</sup> Without celebrating or bemoaning these historical facts, they can be noted as important forces in the naturalization of bioethics.

## Bioethics, American Society, and Dewey's Legacy

Dewey liked to use the term *social intelligence* in his discussions of the importance of cooperative inquiry conducted in an experimental spirit. At the heart of social intelligence is the use of the best available information to craft improved living conditions. Today we might regard Dewey's call for socially intelligent action as best represented in the policy sciences, wherein a program is implemented according to expressed goals and in light of historic evidence, is evaluated, and then is redesigned in light of actual experience and the extent to which the goals have been achieved. In this respect Dewey and other ethical naturalists resemble the French *philosophes* of the eighteenth century, who arguably founded the notion of public policy.

Bioethicists, too, operate largely through policy reform and adjustment, whether at the local department or institutional level or through state or national entities. Even individual interventions—for example, the clinical ethics consultation—are part of a larger effort to enhance the prospects for more general change in the way medical culture deals with ethical issues. The bioethicist is in many respects a policy scientist—or, as some might prefer, a policy humanist.

Dewey's interest in the way values operate in problem solving stemmed from his concern to show that they are not merely abstractions, but are crucial in what we might today call policy making. Dewey thought of values as organizing principles for otherwise undisciplined energies. Values for Dewey were like vectors that galvanize and give shape and direction to energies that must be harnessed for effective social action. The ideas that values have an organizing function and that they have a practical role are perhaps most obvious in a pluralistic society like that of the United States. Anyone who believes that values are not concrete, vital forces has never traversed with open eyes and ears the variegated neighborhoods of a place like Brooklyn.

It is in such a cultural climate that ethical naturalism and bioethics both flourished. In many ways bioethics practices what ethical naturalism preaches. Like the early New World settlers who brought an ancient but abstruse intellectual tradition into the wilderness, bioethicists have by and large been more impressed with what they have found in the clinic than with the philosophies they brought with them. In its attempts to find moral lessons in actual experience—and in its efforts to secure and expand moral values for human enjoyment—bioethics reveals itself as not merely pragmatic, but naturalistic.

Among the many fields in which Dewey attempted to apply social intelligence, including education, race and gender relations, disarmament, and industrial policy, medicine would surely have been added to the list if Dewey had lived long enough to witness the technological breakthroughs of the 1960s and 1970s. One philosopher who was strongly influenced by Dewey, Joseph Fletcher, published a pioneering work in the 1950s in which the promises and perils of modern medicine were analyzed from a framework of "situational" ethics,<sup>17</sup> but prior to the full rush of the new biotechnology and without the richness of naturalism as its philosophical background.

Although history did not permit Dewey to become the first bioethicist, it did allow him to articulate a dynamic philosophy that was well suited to American society. America provided fertile ground for the most dramatically new intellectual and social reform movement since the heyday of Continental existentialism and Marxian politics: bioethics.

# Pragmatic Method and Bioethics

Glenn McGee

John Dewey spent much of his life reconstructing institions in society so that they might better serve the common good. In his public life as a philosopher he revolutionized sociology, education, American aesthetic theory, and public health. However, perhaps his greatest challenge was an attempt to reconstruct and promote the practice of ethics and social philosophy in public life. His goal was to make philosophical tools more useful both in policy and in communal life. He created a method of working on social issues that he called a new logic.

"New" logic was probably a bad choice as a name for Dewey's social theory. Just about nothing inspires less public interest than logic. Pulse rates slow measureably at the mention of the word. Logic is, after all, traditionally understood as the furthest point from practice, a "science of necessary laws of thought, and . . . the theory of ordered relations which are wholly independent of thought." They do not teach logic in medical school, and few Americans could be persuaded that politicians are logical, either. Logic is typically independent of practical and professional life, a "pure field" in which the "order" of the way that existence "must be" is articulated, often in a highly abstract and symbolic way.

Mr. Spock, the pointy-eared Vulcan of *Star Trek*, loved logic. And for many contemporary logicians logic is exactly what Spock took it to be: an unemotional glue of the universe, a tie that binds together matter and consciousness in an tidy language of order and completeness to which everything adheres. Although logic might normally be justified in terms of its ability to help us think more clearly, this feature is only an externality for traditional logic, not its matrix, purpose, or limit. However, John Dewey thought logic arises "within the operation of inquiry and [is] concerned with control of inquiry so that it may yield warranted assertions."<sup>2</sup>