Williams rightly concludes that this is an unrealistic objective. He then continues: “If, by contrast, the justification is addressed to a community that is already an ethical one, then the politics of ethical discourse, including moral philosophy, are significantly different. The aim is not to control the enemies of the community or its shirkers, but, by giving reason to people already disposed to hear it, to help in creating a community continually held together by that same disposition.”

The conception of moral philosophy that Williams suggests here seems to me to have been exactly Dewey’s conception. Yet Williams’ book ignores not only the historical figure John Dewey, but the very possibility of the justification that Dewey gave. When Williams comes to discuss strategies of justification based on conceptions of human flourishing, “human flourishing” gets taken in an entirely individualistic sense. For example, Williams writes, “On Aristotle’s account a virtuous life would indeed conduce to the well-being of the man who has had a bad upbringing, even if he cannot see it. The fact that he is incurable, and cannot properly understand the diagnosis, does not mean that he is not ill” (Ethics, p. 40). An objective justification, in the only sense that Williams considers possible, is one that could be given to each human being who is not “ill”. In short, the only hope for an objective foundation for ethics—what Williams considers is what we might call a “medical” justification—an objective justification for ethics would show that in some non-question-begging sense of “ill”, the amoral and/or immoral man is ill. The only place that such a justification could come from, according to Williams, would be “some branch of psychology”, and Williams is sceptical about that possibility, although he says that “it would be silly to try to determine a priori and in a few pages whether there could be such a theory”. The aim mentioned earlier, “not to
control the enemies of the community or its shirkers, but, by
giving reason to people already disposed to hear it, to help in
continually creating a community held together by that same
disposition”, has been given a radically individualistic inter-
pretation.

However, when Williams explains why it is unlikely that
there will ever be a “branch of psychology” which will provide
us with objective foundations for ethics, he makes a very inter-
esting remark: “There is . . . the figure, rarer perhaps than
Callicles supposed, but real, who is horrible enough and not
miserable at all but, by any ethological standard of the bright
eye and the gleaming coat, dangerously flourishing. For people
who want to ground the ethical life in psychological health it
is somewhat of a problem that there can be such people at all.”

Note the reference to “any ethological standard of the bright
eye and the gleaming coat”. In Williams’ view, an objective
standard of human flourishing would regard us as if we were
tigers (or perhaps squirrels). Bernard Williams, at least at this
moment, is thinking of a standard of human flourishing that
ignores everything that Aristotle himself would have regarded
as typically human. Dewey, on the other hand, is thinking of
us primarily in terms of our capacity intelligently to initiate
action, to talk, and to experiment.

Dewey’s justification is not only a social justification—that
is, one which is addressed to us as opposed to being addressed
to each “me”—it is also, as I said at the outset, an epistemolog-
ical justification, and this too is a possibility that Williams
ignores. The possibility that Williams considers is a “medical”
justification; a proof that if you are not moral then you are in
some way ill. If we tried to recast Dewey’s justification in such
terms, then we would have to say the society which is not
democratic is in a certain way ill; but the medical metaphor is,
I think, best dropped altogether.

The Noble Savage and the Golden Age

Although John Dewey’s arguments are largely ignored in cont-
temporary moral and political philosophy, his enterprise—of
justifying democracy—is alive and well. John Rawls’ monu-
mental A Theory of Justice, for example, attempts to produce
both a rationale for democratic institutions and a standpoint
from which the failures of those institutions can be criticized;
this could also serve as a description of Dewey’s project. But
outside of philosophy, and to some extent even inside philos-
ophy, there are those for whom the very enterprise of justifying
democracy is wrong-headed. One sort of objection comes from
anthropologists and other social scientists, although it is by no
means limited to them. A case I have in mind is an essay by
Stephen Marglin and Frédérique Marglin, a radical economist
and a radical anthropologist. These writers reject the idea that
we can criticize traditional societies even for such sexist prac-
tices as female circumcision. The Marglins defend their point
of view in part by defending cultural relativism; but besides
their extreme relativism, I think there is something else: at
work—something which one finds in the arguments of many
social scientists who are not nearly as sophisticated as the Mar-
glins. Not to be too nice about it, what I think we are seeing
is the revival of the myth of the noble savage. Basically, tradi-
tional societies are viewed by these thinkers as so superior to
our own societies that we have no right to disturb them in any
way. To see what is wrong with this view, let us for the moment
focus on the case of sexual inequality in traditional societies.

It is important in discussing this to separate two questions:
the question of paternalistic intervention and the question of
moral judgment, moral argument, and persuasion. It is no part
of Dewey’s view, for example, that benevolent despot should
step in wherever there are social ills and correct them:
The conception of community of good may be clarified by reference to attempts of those in fixed positions of superiority to confer good upon others. History shows that there have been benevolent despots who wish to bestow blessings on others. They have not succeeded, except when their actions have taken the indirect form of changing the conditions under which those live who are disadvantageously placed. The same principle holds of reformers and philanthropists when they try to do good to others in ways which leave passive those to be benefited. There is a moral tragedy inherent in efforts to further the common good which prevent the result from being either good or common—not good, because it is at the expense of the active growth of those to be helped, and not common because these have no share in bringing the result about. The social welfare can be advanced only by means which elicit the positive interest and active energy of those to be benefited or “improved”. The traditional notion of the great man, of the hero, works harm. It encourages the idea that some “leader” is to show the way; others are to follow in imitation. It takes time to arouse minds from apathy and lethargy, to get them to thinking for themselves, to share in making plans, to take part in their execution. But without active cooperation both in forming aims and in carrying them out there is no possibility of a common good.6

Those who object to informing the victims of sexual inequality—or of other forms of oppression wherever they are to be found—of the injustice of their situation and the existence of alternatives are the true paternalists. Their conception of the good is basically “satisfaction” in one of the classic Utilitarian senses; in effect they are saying that the women (or whoever the oppressed may be) are satisfied, and that the “agitator” who stirs them up is the one who is guilty of creating dissatisfaction.

What the radical social scientists I mentioned are in fact proposing is what Karl Popper has called an “immunizing strategy”, a strategy by which the rationales of oppression in other cultures can be protected from criticism. This is based on the idea that the aspirations to equality and dignity are confined to citizens of Western industrial democracies. The events of Tiananmen Square in the spring of 1989 are a more powerful refutation of the view than any words I could write here.

At the other extreme, at least politically, from the “noble savage” argument against attempting to justify democratic institutions is an argument that I seem to detect in the recent writings of Alasdair MacIntyre.7 In these books, MacIntyre gives a sweeping philosophical résumé of the history of Western thought which does indeed endorse the idea that one system of ethical beliefs can “rationally defeat” another system; which does indeed insist that there can be progress in the development of worldviews; but which is haunted by the suggestion that that progress fundamentally stopped somewhere between the twelfth and fourteenth centuries, and that we have been retrogressing ever since.

If I am disturbed by the suggestion that I describe as haunting MacIntyre’s writing, the suggestion that we have been retrogressing ever since the late Middle Ages (a suggestion that has been put forward in a much more blatant way in Allan Bloom’s best-seller, The Closing of the American Mind), it is because the politics which such views can justify are nothing less than appalling.

What the defenders of the Noble Savage and the defenders of the Golden Age have in common is that their doctrines tend to immunize institutionalized oppression from criticism. The immunizing strategies are different, but they have this in common: they abandon the idea that it would be good for the victims of oppression to know of alternative ways of life, alter-
native conceptions of their situation, and to be free to try for themselves which conception is better. Both Noble Savagers and Golden Agers block the path of inquiry.

Dewey’s Metaphysics (or Lack Thereof)

From what premises does Dewey derive the claim that I imputed to him, that is, the claim that democracy is a precondition for the full application of intelligence to the solution of social problems? As we shall shortly see, the underlying “premises” are some very commonplace assumptions.

Dewey believes (as we all do, when we are not playing the sceptic) that there are better and worse resolutions to human predicaments—to what he calls “problematical situations”. That this is so is not something Dewey argues on a priori grounds. But neither are Dewey’s premises drawn from some branch of psychology. Here it is instructive to recall Peirce’s (as well as Dewey’s) arguments for the scientific method itself: in the two famous articles in Popular Science Monthly in which Peirce launched the pragmatist movement, he argued that we have learned from experience that the method of authority, the method of tenacity, and the method of What Is Agreeable to Reason don’t work. In a similar vein, Dewey’s Logic conceives of the theory of inquiry as a product of the very sort of inquiry that it describes: *epistemology is hypothesis.* In short, Dewey believes that even if we cannot reduce the scientific method to an algorithm, we have learned something about how to conduct inquiry in general, and that what applies to intelligently conducted inquiry in general applies to ethical inquiry in particular.

This would not be the view of the scientistic metaphysicians I have been criticizing. In their view, one cannot suppose that intelligent people are able to tell better resolutions to problematical situations from worse (after experimentation, reflection, and discussion); one first has to show “ontologically” that there is a “fact of the matter” about better and worse resolutions to problematical situations. This is, for example, what bothers Bernard Williams; for Bernard Williams the only way in which there could be facts about what forms of social life are better and worse would be if such facts issued from “some branch of psychology”. Lacking such a branch of psychology (and Williams thinks it very unlikely there will ever be one) we have no basis for believing that one form of social life can be better than another unless the judgment of better or worse is admitted to express only a “local” truth, a truth in a language game which presupposes the interests and practices of “some social world or other”. For Williams the distinction between facts which are “local” in this way and facts which are “absolute” is omnipresent; there can not be “absolute” facts of the kind Dewey thinks intelligent people are able to discover. Dewey, as I read him, would reply that the whole notion of an “absolute” fact is nonsensical.

However, it is a fact about analytic philosophy that, while at one time (during the period of logical positivism) it was an antimetaphysical movement, it has recently become the most prometaphysical movement on the world philosophical scene. From a metaphysical realist point of view, one can never begin with an epistemological premise that *people are able to tell whether A or B;* one must first show that, in “the absolute conception of the world”, there are such possible facts as A and B. A metaphysical-reductive account of what good is must precede any discussion of what is better than what. In my view, the great contribution of Dewey was to insist that we neither have nor require a “theory of everything”, and to stress that what we need instead is insight into how human beings resolve problematical situations.
[Philosophy's] primary concern is to clarify, liberate, and extend the goods which inhere in the naturally generated functions of experience. It has no call to create a world of "reality" de novo, nor to delve into secrets of Being hidden from common sense and science. It has no stock of information or body of knowledge peculiarly its own; if it does not always become ridiculous when it sets up as a rival of science, it is only because a particular philosopher happens to be also, as a human being, a prophetic man of science. Its business is to accept and to utilize for a purpose the best available knowledge of its own time and place. And this purpose is criticism of beliefs, institutions, customs, policies with respect to their bearing upon good. This does not mean their bearing upon the good, as something itself formulated and attained within philosophy. For as philosophy has no private store of knowledge or of methods for attaining truth, so it has no private access to good. As it accepts knowledge of facts and principles from those competent in science and inquiry, it accepts the goods that are diffused in human experience. It has no Mosaic or Pauline authority of revelation entrusted to it. But it has the authority of intelligence, of criticism of these common and natural goods.11

The need for such fundamental democratic institutions as freedom of thought and speech follows, for Dewey, from requirements of scientific procedure in general: the unimpeded flow of information and the freedom to offer and to criticize hypotheses. Durkheim offered similar arguments up to a point, but came to the conclusion that political opinions should rest on "expert opinion", those without expertise being required to defer to the authority of the experts (and especially to sociologists).12 While Dewey may not have known of Durkheim's essay, he did consider and reject this view, and he did so for frankly empirical reasons: "A class of experts is inevitably so removed from common interests as to become a class with private interests and private knowledge, which in social matters is not knowledge at all."13 Here Dewey links up with another of his themes, that privilege inevitably produces cognitive distortion: "All special privilege narrows the outlook of those who possess it, as well as limits the development of those not having it. A very considerable portion of what is regarded as the inherent selfishness of mankind is the product of an inequitable distribution of power—inequitable because it shuts out some from the conditions which direct and evoke their capacities, while it produces a one-sided growth in those who have privilege" (Dewey and Tufts, Ethics, pp. 385-386). Thus, if a value as general as the value of democracy is to be rationally defended in the way Dewey advocates, the materials to be used in the defense cannot be circumscribed in advance. There is no one field of experience from which all the considerations relevant to the evaluation of democracy come.

The dilemma facing the classical defenders of democracy arose because all of them presupposed that we already know our nature and our capabilities. In contrast, Dewey's view is that we don't know what our interests and needs are or what we are capable of until we actually engage in politics. A corollary of this view is that there can be no final answer to the question of how we should live, and therefore we should always leave it open to further discussion and experimentation. That is precisely why we need democracy.

At the same time, we do know that certain things stunt our nature and capacities. Dewey was well aware that equality and freedom can conflict, and that there is no easy solution when they do conflict; but he would, I think, feel that this conflict is too much emphasized in present-day political philosophy. In Dewey's view, there is simply no doubt that inequality, on the scale that exists today, stunts our nature and capacities, and thus leads to unfreedom on a massive scale. If we are to talk...
about “conflicts between equality and freedom”, we should also talk about the ways in which inequality leads to unfreedom.

Dewey and James

While Dewey’s social philosophy is overwhelmingly right, as far as it goes, his moral philosophy is less satisfactory when we try to apply it to individual existential choices. To see why, consider the famous example of an existential choice that Sartre employed in his *Existentialism and Humanism*.14 It is World War II, and Pierre has to make an agonizing choice between joining the Resistance, which means leaving his aging mother alone on the farm, or staying and taking care of his mother, but not helping to fight the enemy. One of the reasons that Dewey’s recommendation to use intelligently guided experimentation in solving ethical problems does not really help in such a case is Dewey’s consequentialism. Pierre is not out to “maximize” the good, however conceived, in some global sense; he is out to do what is right. Like all consequentialist views, Dewey’s has trouble doing justice to considerations of right. I am not saying that Dewey’s philosophy never applies to individual existential choices. Some choices are just dumb. But Pierre is not dumb. Neither of the alternatives he is considering is in any way stupid. Yet he cannot just flip a coin.

There are, of course, problems of individual choice which can be handled just as one should handle social problems. If, for example, I am uncertain as to which school my child should attend, I may decide to experiment. I may send the child to a school with the idea that if it doesn’t work out, I can take her out and put her in a different school. But that is not the sort of problem that Pierre faces.

What some philosophers say about such a situation is that the agent should look for a policy such that if everyone in a similar situation were to act on that policy the consequences would be for the best, and then do that. Sometimes that is reasonable; but in Pierre’s situation it isn’t. One of the things that is at stake in Pierre’s situation is his need to decide who Pierre is. Individuality is at stake; and individuality in this sense is not just a “bourgeois value” or an Enlightenment idea. In the Jewish tradition one often quotes the saying of Rabbi Susiah, who said that in the hereafter the Lord would not ask him “Have you been Abraham?” or “Have you been Moses?” or “Have you been Hillel?” but “Have you been Susiah?” Pierre wants to be Pierre; or, as Kierkegaard would say, he wants to “become who he already is”. This is not the same thing as wanting to follow the “optimal policy”; or perhaps it is—perhaps the optimal policy in such a case is, in fact, to become who you already are. But doing that is not something that the advice to use the “scientific method” can help you very much with, even if your conception of the scientific method is as generous as Dewey’s.

There are various possible future continuations of Pierre’s story, no matter what decision he makes. Years afterward, if he survives, Pierre may tell the story of his life (rightly or wrongly) depicting his decision (to join the Resistance or to stay with his mother) as clearly the right decision, with no regrets or doubts about it, whatever the costs may have turned out to be. Or he may tell his story depicting his decision as the wrong decision, or depicting it as a “moral dilemma” to which there was no correct answer.15 But part of the problem Pierre faces at the time he has to make the decision is that he doesn’t even know that what he faces is a “moral dilemma” in that sense.

It was precisely this sort of situation that William James was addressing when he wrote the famous essay “The Will to Believe” (which James later said should have been titled “The Right to Believe”). Although this essay has received a great deal
of hostile criticism, I believe that its logic is, in fact, precise
and impeccable; but I will not try to defend that claim here.
For James it is crucial for understanding situations like Pierre’s
that we recognize at least three of their features: that the choice
Pierre faces is “forced”, that is, these are the only options
realistically available to him; that it is “vital”—it matters deeply
to him; and that it is not possible for Pierre to decide what to
do on intellectual grounds. In such a situation—and only in
such a situation—James believes that Pierre has the right to
believe and to act “in advance of the evidence”. The storm of
controversy around “The Will to Believe” was largely occa-
sioned by the fact that James took the decision to believe or
not to believe in God to be a decision of this kind. Because
religious (and, even more, anti-religious) passions are involved,
most of the critics do not even notice that the argument of
“The Will to Believe” is applied by James and is meant to apply
to existential decisions of the Pierre type (this is clear not only
from the essay itself, but from many other essays in which
James offers similar arguments). It is also not noticed that it is
meant to apply to the individual’s choice of a philosophy,
including pragmatism itself.16

James believed, as Wittgenstein did, that religious belief is
neither rational nor irrational but arational. It may, of course,
not be a live option for you, because you are either a committed
atheist or a committed believer. But if it is a live option for
you, then you may be in a situation completely analogous to
the one Sartre imagines (or so James believed). The need to
believe “in advance of the evidence” is not confined to religious
decisions and existential decisions, for James. It plays an essen-
tial role in science itself. Although this assertion is hardly
controversial nowadays, it was, according to the testimony of
someone present,17 what caused the most controversy when the
lecture “The Will to Believe” was repeated for the graduate
students at Harvard University. A very nice example of the will
to believe in science was related to me recently by Gerald
Holton: Max Planck was an early convert to Einstein’s theory
of (special) relativity, and played an absolutely crucial role in
getting that theory the attention of elite physicists. Holton tells
me that the physicists in Berlin met with Planck on one oc-
casion and drove him to the wall with their demand that he
provide an experimental reason for preferring Einstein’s theory
over Poincaré’s. But Planck could not do this. Instead he said,
“Es ist mir eigentlich mehr sympathisch” (It’s simply more
sympathetic to me). Another example is Einstein’s own passionate
belief in his own general theory of relativity. In a letter to
someone, Einstein answered the question of what he would
have said if the eclipse experiment had turned out the wrong
way by saying, “I would have felt sorry for the Lord God.”

James’s point was not just a point about the history of science,
although he was quite right about that. His claim—which
paradoxically the logical positivists helped to make part of con-
ventional philosophy of science with their sharp distinction
between context of discovery and context of justification—was
that science would not progress if we insisted that scientists
never believe or defend theories except on sufficient evidence.
When it comes to the institutional decision, the decision by
academically organized science, to accept a theory or not, then
it is important that we apply the scientific method. In the
context of justification (although James did not use that jargon)
James was all on the side of scrupulous attention to evidence.
But James recognized, before logical positivism appeared, that
there is another moment in scientific procedure, the discovery
moment, and that in that context the same constraints cannot
be applied.
The situation with respect to religion is, of course, quite different. Even though the physicist or the molecular biologist who invents a theory, or other advocates who find the theory *sympathetic*, may believe the theory ahead of the evidence, eventual acceptance by the scientific community depends on public confirmation. In the case of religious belief however—*pace* Alisdair MacIntyre—there is never public confirmation. Perhaps the only one who can “verify” that God exists is God himself. 18 The Pierre case is still a third kind of case. In that case, as I already remarked, Pierre may come to feel afterward that he made the right choice (although he will hardly be able to “verify” that he did), but there is no guarantee that he will. James would say that what these cases have in common is that it is valuable, not just from the point of view of the individual, but from the point of view of the public, that there should be individuals who make such choices.

James thought that every single human being has to make decisions ahead of the evidence of the kind that Pierre had to make, even if they are not as dramatic (of course, this was Sartre’s point as well). James argued again and again that our best energies cannot be set free unless we are willing to make the sort of existential commitment that this example illustrates. Someone who acts only when the “estimated utilities” are favorable does not live a meaningful human life. Even if I choose to do something of whose ethical and social value there is absolutely no doubt, say, to devote my life to comforting the dying, or helping the mentally ill, or curing the sick, or relieving poverty, I still have to decide not whether it is good that someone should do that thing, but whether it is good that I, Hilary Putnam, do that thing. The answer to that question cannot be a matter of well-established scientific fact, in however generous a sense of “scientific”.

This existentialist note is unmistakable in the quotation from

Fitzjames Stephen with which James ends “The Will to Believe”:

What do you think of yourself? What do you think of the world? These are questions with which all must deal as it seems good to them. They are riddles of the Sphinx, and in some way or other we must deal with them . . . in all important transactions of life we have to take a leap in the dark. If we decide to leave the riddles unanswered, that is a choice. If we waver in our answer, that too is a choice; but whatever choice we make, we make it at our peril. If a man chooses to turn his back altogether on God and the future, no one can prevent him. No one can show beyond reasonable doubt that he is mistaken. If a man thinks otherwise, and acts as he thinks, I do not see how anyone can prove that he is mistaken. Each must act as he thinks best, and if he is wrong so much the worse for him. We stand on a mountain pass in the midst of whirling snow and blinding mist, through which we get glimpses now and then of paths which may be deceptive. If we stand still, we shall be frozen to death. If we take the wrong road, we shall be dashed to pieces. We do not certainly know if there is any right one. What must we do? “Be strong and of good courage”. Act for the best, hope for the best, and take what comes . . . If death ends all, we cannot meet death better. 19

James’s existentialism is all the more remarkable because he had not read a single existentialist writer (except Nietzsche, whom he pitied, 20 and whom he certainly did not read with any sensitivity). At the same time, James never fails to see the need for a check on existential commitment. My right to my own existential commitments stops, for James, where it infringes on the like right of my neighbor. Indeed, the principle of tolerance ("our ancient national doctrine of live and let live") is described by James as having "a far deeper meaning than our
people now seem to imagine it to possess». In his Lectures on Religious Belief, Wittgenstein argued that religious belief (insofar as it does not degenerate into superstition) is neither rational nor irrational, and, indeed, the religious people Wittgenstein knew were a pretty gentle lot. But as both Kant and Kierkegaard remind us, there are certain specific diseases of the religious impulse. Kant speaks of fanaticism, idolatry, sorcery, and superstition, and Kierkegaard repeatedly mentions both fanaticism and idolatry, adding that there is the constant danger that the religious person may be worshipping an “idol” even though he or she says all the right words. If reason (or “intelligence”) cannot decide what my ultimate commitment should be, it can certainly decide from long and bitter experience that fanaticism is a terrible and destructive thing. In James, a sympathetic understanding of the need for commitment is always tempered by a healthy awareness of the horrors of fanaticism.

If Dewey is not as sensitive to the limits of intelligence as a guide to life as James was, the problem is, perhaps, Dewey’s dualistic conception of human goods. For Dewey there are fundamentally two, and only two, dominant dimensions to human life: the social dimension, which for Dewey meant the struggle for a better world, for a better society, and for the release of human potential; and the aesthetic dimension. To the criticism that he saw fundamentally saw all of life as social action, Dewey could and did always reply that, on the contrary, in the last analysis he saw all “consummatory experience” as aesthetic. The trouble with this answer is that a bifurcation of goods into social goods which are attained through the use of instrumental rationality and consummatory experiences which are ultimately aesthetic is too close to the positivist or empiricist division of life into the prediction and control of experiences and the enjoyment of experiences to be adequate. James, I think, succumbs less than Dewey to the temptation to offer a metaphysics of value.

Conclusion

I have in this book been trying to say something about how philosophical reflection can and must go on—about what philosophical reflection can and cannot be. I have argued that the decision of a large part of contemporary analytic philosophy to become a form of metaphysics is a mistake. Indeed, contemporary analytic metaphysics is in many ways a parody of the great metaphysics of the past. As Dewey pointed out, the metaphysics of previous epochs had a vital connection to the culture of those epochs, which is why it was able to change the lives of men and women, and not always for the worse. Contemporary analytic metaphysics has no connection with anything but the “intuitions” of a handful of philosophers. It lacks what Wittgenstein called “weight”.

At the same time, I have argued that philosophy must not become a pseudo-scepticism (or nihilism) which announces that it has been discovered that there is no world, no truth, no progress, and so on. My argument has not been directed against technicity—argument and rigorous analysis—nor against engagement with literature. I fully grant that the positivists, for example, did a great service to philosophy by showing how the methods of modern mathematical logic could be used to carry the investigation of a great many philosophical arguments and issues much further than it had been carried before; and the deconstructionists, for all their faults, have called attention to aspects of literature—in particular, to aspects of philosophical literature—which the tradition has neglected. But philosophy cannot be either para-science or para-politics. If I have taken
Wittgenstein as an example of a kind of reflection that avoids both of these temptations, it is because of his relentless honesty and his very real compassion, his constant effort to understand sympathetically forms of life which he himself did not share. If I have taken John Dewey as a model, it is because his reflections on democracy never degenerate into propaganda for the status quo. It is true that the optimism about human potential that Dewey expresses is not something which has been proved to be right, nor does Dewey claim that it has been proved to be right. But, as Dewey emphatically points out, neither has pessimism about human potential been proved to be right. On the contrary, whenever we have given previously oppressed groups a chance to display their capacities, those capacities have surprised us.

I would like to close by saying a little more about this critical dimension of Dewey’s thought. When Dewey speaks of using the scientific method to solve social problems he does not mean relying on experts. Dewey emphasizes that, as things are, experts cannot solve social problems. Experts belong to privileged classes and are affected by the rationalizations of which Dewey spoke. They are an elite, and as an elite they are accustomed to telling others what to do to solve their social problems. But the solution to social problems, Dewey argues, requires not that we tell other people what to do, but that we release their energies so that they will be able to act for themselves. (An example that comes to mind is the energies that were released when the workers in Poland formed Solidarity.) Dewey’s social philosophy is not simply a restatement of classical liberalism; for, as Dewey says, the real fallacy of classical liberalism lies in the notion that individuals have such a native or original endowment of rights, powers, and wants that all that

is required on the side of institutions and laws is to eliminate the obstructions they offer to the “free” play of the natural equipment of individuals. The removal of obstructions did have a liberating effect upon such individuals as were antecedently possessed of the means, intellectual and economic, to take advantage of the changed social conditions, but left all others at the mercy of the new social conditions brought about by the free powers of those advantageously situated. The notion that men are equally free to act if only the same legal arrangements apply equally to all—irrespective of differences in education, and command of capital, and that control of the social environment which is furnished by the institution of property—is a pure absurdity, as facts have demonstrated. Since actual, that is effective, rights and demands are products of interactions and are not found in the original and isolated constitution of human nature, whether moral or psychological, mere elimination of obstructions is not enough. The latter merely liberates force and ability as it happens to be distributed by past accidents of history. This “free” action operates disastrously as far as the many are concerned. The only possible conclusion, both intellectually and practically, is that the attainment of freedom conceived as power to act in accord with choice turns upon positive and constructive changes in social arrangements.

We too often forget that Dewey was a radical. But he was a radical democrat, not a radical scoffer at “bourgeois democracy”. For Dewey the democracy that we have is not something to be spurned, but also not something to be satisfied with. The democracy that we have is an emblem of what could be. What could be is a society which develops the capacities of all its men and women to think for themselves, to participate in the design and testing of social policies, and to judge results. On such a conception, it would be fundamentally misguided to
think that majority rule, by itself, amounts to democracy. A majority which does not listen to opinions it finds uncomfortable is not engaging in the intelligent conduct of communal inquiry any more than is an elite which does not allow the majority to decide; and the intelligent conduct of communal inquiry is what democracy is all about, for John Dewey. By the same token, Dewey's civil libertarianism is not a simple giving of priority to something called "freedom" over something called "democracy"; civil liberty is necessary for democracy.\textsuperscript{23}

I have said something about why I take Wittgenstein as a model, and something about why I take Dewey as a model. Their virtues are in a sense complementary, but I think they have this in common, that Dewey at his best and Wittgenstein at his best illustrate how philosophical reflection which is completely honest can unsettle our prejudices and our pet convictions and our blind spots without flashy claims to "deconstruct" truth itself or the world itself. If the moral of a deconstruction is that everything can be "deconstructed", then the deconstruction has no moral. When Wittgenstein, as I read him, deconstructs pet philosophical categories, or when Dewey challenges us to ask how far we are really living our democratic faith, the effect can be to change both our lives and the way we see our lives; and that is the role of philosophical reflection at its best.
Traditionally Gifford Lectures have dealt with questions connected with religion. In recent years, although reference to religion has never been wholly absent, they have sometimes been given by scientists and philosophers of science, and have dealt with the latest knowledge in cosmology, elementary particle physics, and so on. No doubt the change reflects a change in the culture, and particularly in the philosophical culture. But these facts about the Gifford Lectures—their historical concern with religion and their more recent concern with science—both speak to me. As a practicing Jew, I am someone for whom the religious dimension of life has become increasingly important, although it is not a dimension that I know how to philosophize about except by indirection; and the study of science has loomed large in my life. In fact, when I first began to teach philosophy, back in the early 1950s, I thought of myself as a philosopher of science (although I included philosophy of language and philosophy of mind in my generous interpretation of the phrase “philosophy of science”). Those who know my writings from that period may wonder how I reconciled my religious streak, which existed to some extent even back then, and my general scientific materialist worldview at that time. The answer is that I didn’t reconcile them. I was a thoroughgoing atheist, and I was a believer. I simply kept these two parts of myself separate.
Renewing Philosophy

In the main, however, it was the scientific materialist that was dominant in me in the fifties and sixties. I believed that everything there is can be explained and described by a single theory. Of course we shall never know that theory in detail, and even about the general principles we shall always be somewhat in error. But I believed that we can see in present-day science what the general outlines of such a theory must look like. In particular, I believed that the best metaphysics is physics, or, more precisely, that the best metaphysics is what the positivists called "unified science", science pictured as based on and unified by the application of the laws of fundamental physics. In our time, Bernard Williams has claimed that we have at least a sketch of an "absolute conception of the world" in present-day physics. Many analytic philosophers today subscribe to such a view, and for a philosopher who subscribes to it the task of philosophy becomes largely one of commenting on and speculating about the progress of science, especially as it bears or seems to bear on the various traditional problems of philosophy.

When I was young, a very different conception of philosophy was represented by the work of John Dewey. Dewey held that the idea of a single theory that explains everything has been a disaster in the history of philosophy. Science itself, Dewey once pointed out, has never consisted of a single unified theory, nor have the various theories which existed at any one time ever been wholly consistent. While we should not stop trying to make our theories consistent—Dewey did not regard inconsistency as a virtue—in philosophy we should abandon the dream of a single absolute conception of the world, he thought. Instead of seeking a final theory—whether it calls itself an "absolute conception of the world" or not—that would explain everything, we should see philosophy as a reflection on how human beings can resolve the various sorts of "problematical situations" that they encounter, whether in science, in ethics, in politics, in education, or wherever. My own philosophical evolution has been from a view like Bernard Williams' to a view much more like John Dewey's. In this book I want to explain and, to the extent possible in the space available, to justify this change in my philosophical attitude.

The Project of Artificial Intelligence

In the first three chapters, I begin with a look at some of the ways in which philosophers have suggested that modern cognitive science explains the link between language and the world. This chapter deals with Artificial Intelligence. Chapter 2 will discuss the idea that evolutionary theory is the key to the mysteries of intentionality (i.e., of truth and reference), while Chapter 3 will discuss the claim made by the philosopher Jerry Fodor that one can define reference in terms of causal-counterfactual notions. In particular, I want to suggest that we can and should accept the idea that cognitive psychology does not simply reduce to brain science cum computer science, in the way that so many people (including most practitioners of "cognitive science") expect it to.

I just spoke of a particular picture of what the scientific worldview is, the view that science ultimately reduces to physics, or at least is unified by the world picture of physics. The idea of the mind as a sort of "reckoning machine" goes back to the birth of that "scientific worldview" in the seventeenth and eighteenth centuries. For example, Hobbes suggested that thinking is appropriately called "reckoning", because it really is a manipulation of signs according to rules (analogous to calculating rules), and La Mettrie scandalized his time with the claim that man is just a machine (L'Homme Machine). These ideas were, not surprisingly, associated with materialism. And the question which anyone who touches on the topic of Artificial Intelligence is asked again and again is "Do you think that a computing machine could have intelligence, conscious-
ness, and so on, in the way that human beings do.” Sometimes the question is meant as “could it in principle” and sometimes as “could it really, in practice” (to my mind, the far more interesting question).

The story of the computer, and of Alan Turing’s role in the conception of the modern computer, has often been told. In the thirties, Turing formulated the notion of computability in terms which connect directly with computers (which had not yet been invented). In fact, the modern digital computer is a realization of the idea of a “universal Turing machine”. A couple of decades later materialists like my former self came to claim that “the mind is a Turing machine”. It is interesting to ask why this seemed so evident to me (and still seems evident to many philosophers of mind).

If the whole human body is a physical system obeying the laws of Newtonian physics, and if any such system, up to and including the whole physical universe, is at least metaphorically a machine, then the whole human body is at least metaphorically a machine. And materialists believe that a human being is just a living human body. So, as long as they assume that quantum mechanics cannot be relevant to the philosophy of mind (as I did when I made this suggestion), materialists are committed to the view that a human being is—at least metaphorically—a machine. It is understandable that the notion of a Turing machine might be seen as just a way of making this materialist idea precise. Understandable, but hardly well thought out.

The problem is the following: a “machine” in the sense of a physical system obeying the laws of Newtonian physics need not be a Turing machine. (In defense of my former views, I should say that this was not known in the early 1960s when I proposed my so-called functionalist account of mind.) For a Turing machine can compute a function only if that function

belongs to a certain class of functions, the so-called general recursive functions. But it has been proved that there exist possible physical systems whose time evolution is not describable by a recursive function, even when the initial condition of the system is so describable. (The wave equation of classical physics has been shown to give rise to examples.) In less technical language, what this means is that there exist physically possible analogue devices which can “compute” non-recursive functions. Even if such devices cannot actually be prepared by a physicist (and Georg Kreisel has pointed out that no theorem has been proved excluding the preparation of such a device), it does not follow that they do not occur in nature. Moreover, there is no reason at all why the real numbers describing the condition at a specified time of a naturally occurring physical system should be “recursive”. So, for more than one reason, a naturally occurring physical system might well have a trajectory which “computed” a non-recursive function.

You may wonder, then, why I assumed that a human being could be, at least as a reasonable idealization, regarded as a Turing machine. One reason was that the following bit of reasoning occurred to me. A human being cannot live forever. A human being is finite in space and time. And the words and actions—the “outputs”, in computer jargon—of a human being, insofar as they are perceivable by the unaided senses of other human beings (and we might plausibly assume that this is the level of accuracy aimed at in cognitive psychology) can be described by physical parameters which are specified to only a certain macroscopic level of accuracy. But this means that the “outputs” can be predicted during the finite time the human lives by a sufficiently good approximation to the actual continuous trajectory, and such a “sufficiently good approximation” can be a recursive function. (Any function can be approximated to any fixed level of accuracy by a recursive function over any
finite time interval.) Since we may assume that the possible values of the boundary parameters are also restricted to a finite range, a finite set of such recursive functions will give the behavior of the human being under all possible conditions in the specified range to the desired accuracy. (Since the laws of motion are continuous, the boundary conditions need only to be known to within some appropriate \( \Delta \) in order to predict the trajectory of the system to within the specified accuracy.) But if that is the case, the “outputs”—what the human says and does—can be predicted by a Turing machine. (In fact, the Turing machine only has to compute the values of whichever recursive function in the finite set corresponds to the values that the boundary conditions have taken on), and such a Turing machine could, in principle, simulate the behavior in question as well as predict it.

This argument proves too much and too little, however. On the one hand, it proves that every physical system whose behavior we want to know only up to some specified level of accuracy and whose “lifetime” is finite can be simulated by an automaton! But it does not prove that such a simulation is in any sense a perspicuous representation of the behavior of the system. When an airplane is flying through the air at less than supersonic speeds, it is perspicuous to represent the air as a continuous liquid, and not as an automaton. On the other hand it proves too little from the point of view of those who want to say that the real value of computational models is that they show what our “competence” is in idealization from such limitations as the finiteness of our memory or our lifetimes. According to such thinkers, if we were able to live forever, and were allowed access to a potentially infinite memory storage, still all our linguistic behavior could be simulated by an automaton. We are best “idealized” as Turing machines, such thinkers say, when what is at stake is not our actual “performance” but our “competence”. Since the proof of the little theorem I just demonstrated depended essentially on assuming that we do not live forever and on assuming that the boundary conditions have a finite range (which excludes a potentially infinite external memory), it offers no comfort to such a point of view.

Again, it might be said that any non-recursively either in our initial conditions or in our space-time trajectories could not be reliably detected and hence would have no “cognitive” significance. But it is one thing to claim that the particular non-recursive function a human might compute if the human (under a certain idealization) were allowed to live forever has no cognitive significance, and another to say that the whole infinite trajectory can therefore be approximated by a Turing machine. Needless to say, what follows the “therefore” in this last sentence does not follow logically from the antecedent! (Recall how in the “chaos” phenomena small perturbations become magnified in the course of time.)

In sum, it does not seem that there is any principled reason why we must be perspicuously representable as Turing machines, even assuming the truth of materialism. (Or any reason why we must be representable in this way at all—even non-perspicuously—under the idealization that we live forever and have potentially infinite external memories). That is all I shall say about the question whether we are (or can be represented as) Turing machines “in principle”.

On the other hand, the interesting question is precisely whether we are perspicuously representable as Turing machines, even if there are no a priori answers to be had to this question. And this is something that can be found out only by seeing if we can “simulate” human intelligence in practice. Accordingly, it is to this question that I now turn.
Induction and Artificial Intelligence

A central part of human intelligence is the ability to make inductive inferences, that is, to learn from experience. In the case of deductive logic, we have discovered a set of rules which satisfactorily formalize valid inference. In the case of inductive logic this has not so far proved possible, and it is worthwhile pausing to ask why.

In the first place, it is not clear just how large the scope of inductive logic is supposed to be. Some writers consider the “hypothetic-deductive method”—that is, the inference from the success of a theory’s predictions to the acceptability of the theory—the most important part of inductive logic, while others regard it as already belonging to a different subject. Of course, if by induction we mean “any method of valid inference which is not deductive”, then the scope of the topic of inductive logic will be simply enormous.

If the success of a large number of predictions—say, a thousand, or ten thousand—which are not themselves consequences of the auxiliary hypotheses alone always confirmed a theory, then the hypothetic-deductive inference, at least, would be easy to formalize. But problems arise at once. Some theories are accepted when the number of confirmed predictions is still very small—this was the case with the general theory of relativity, for example. To take care of such cases, we postulate that it is not only the number of confirmed predictions that matters, but also the elegance or simplicity of the theory: but can such quasi-aesthetic notions as “elegance” and “simplicity” really be formalized? Formal measures have indeed been proposed, but it cannot be said that they shed any light on real-life scientific inference. Moreover, a confirmed theory sometimes fits badly with background knowledge; in some cases, we conclude the theory cannot be true, while in others we conclude that the background knowledge should be modified; again, apart from imprecise talk about “simplicity”, it is hard to say what determines whether it is better, in a concrete case, to preserve background knowledge or to modify it. And even a theory which leads to a vast number of successful predictions may not be accepted if someone points out that a much simpler theory would lead to those predictions as well.

In view of these difficulties, some students of inductive logic would confine the scope of the subject to simpler inferences—typically, to the inference from the statistics in a sample drawn from a population to the statistics in the population. When the population consists of objects which exist at different times, including future times, the present sample is never going to be a random selection from the whole population, however; so the key case is this: I have a sample which is a random selection from the members of a population which exist now, here (on Earth, in Scotland, in the particular place where I have been able to gather samples, or wherever); what can I conclude about the properties of future members of the population (and of members in other places)?

If the sample is a sample of uranium atoms, and the future members are in the near as opposed to the cosmological future, then we are prepared to believe that the future members will resemble present members, on the average. If the sample is a sample of people, and the future members of the population are not in the very near future, then we are less likely to make this assumption, at least if culturally variable traits are in question. Here we are guided by background knowledge, of course. This has suggested to some inquirers that perhaps all there is to induction is the skilful use of background knowledge—we just “bootstrap” our way from what we know to additional knowledge. But then the cases in which we don’t have much background knowledge at all, as well as the exceptional cases
in which what we have to do is question background knowledge, assume great importance; and here, as just remarked, no one has much to say beyond vague talk about "simplicity".

The problem of induction is not by any means the only problem confronting anyone who seriously intends to simulate human intelligence. Induction, indeed all cognition, presupposes the ability to recognize similarities among things; but similarities are by no means just constancies of the physical stimulus, or simple patterns in the input to the sense organs. For this reason, the success certain computer programs have had in detecting patterns (e.g., the shapes of letters of the alphabet) does not solve the "similarity" problem in the form in which it confronts someone learning a natural language. What makes knives similar, for example, is not that they all look alike (they don’t), but that they are all manufactured to cut or stab; any system that can recognize knives as relevantly similar needs to be able to attribute purposes to agents. Humans have no difficulty in doing this; but it is not clear that we do this by unaided induction; we may well have a "hard-wired" ability to "put ourselves in the shoes" of other people which enables us to attribute to them any purposes we are capable of attributing to ourselves—an ability that Evolution the Tinker found it convenient to endow us with, and which helps us to know which of the infinitely many possible inductions we might consider is likely to be successful. Again, to recognize that a chihuahua and a Great Dane are similar in the sense of belonging to the same species requires the ability to realize that, appearances notwithstanding, chihuahuas can impregnate Great Danes and produce fertile offspring. Thinking in terms of potential for mating and potential for reproduction is natural for us; but it need not be natural for an artificial intelligence—unless we deliberately simulate this human propensity when we construct the artificial intelligence. Such examples can be multiplied indefinitely.

Similarities expressed by adjectives and verbs rather than nouns can be even more complex. A non-human "intelligence" might know what white is on a color chart, for example, without being able to see why pinko-grey humans are called "white", and it might know what it is to open a door without being able to understand why we speak of opening a border (or opening trade). There are many words (as Wittgenstein pointed out) that apply to things that have only a "family resemblance" to one another; there need not be one thing all X’s have in common. For example, we speak of the Canaanite tribal chiefs mentioned in the Bible as kings although their kingdoms were probably little more than villages, and we speak of George VI (who did not literally rule England at all) as a king; and there are even cases in history in which "the kingship was not hereditary", we say. Similarly (Wittgenstein’s example), there is no property all games have in common which distinguishes them from all the activities which are not games.

The notional task of artificial intelligence is to simulate intelligence, not to duplicate it. So, perhaps one might finesse the problems I just mentioned by constructing a system that reasoned in an ideal language—one in which words did not change their extensions in a context-dependent way (a sheet of typing paper might be "white" and a human being might be "white", in such a language, where white is color-chart white, and white is pinko-grey). Perhaps all "family resemblance" words would have to be barred from such a language. (How much of a vocabulary would be left?) But my budget of difficulties is not yet finished.

Because the project of symbolic inductive logic appeared to run out of steam after Carnap, the thinking among philosophers
of science has run in the direction of talking about so-called bootstrapping methods—that is, methods which attribute a great deal to background knowledge. It is instructive to see why this has happened, and also to realize how unsatisfactory such an approach is if our aim is to simulate intelligence.

One huge problem might be described as the existence of conflicting inductions. To use an example from Nelson Goodman:11 as far as I know, no one who has ever entered Emerson Hall in Harvard University has been able to speak Inuit (Eskimo). Thinking formalistically, this suggests the induction that if any person \( X \) enters Emerson Hall, then \( X \) does not speak Inuit. Let \( U \) be an Eskimo in Alaska who speaks Inuit. Shall I predict that if \( U \) enters Emerson Hall, then \( U \) will no longer be able to speak Inuit? Obviously not, but what is wrong with this induction?

Goodman answers that what is wrong with the inference is that it conflicts with the “better entrenched” inductively supported law that people do not lose their ability to speak a language upon entering a new place. But how am I supposed to know that this law does have more confirming instances than the regularity that no one who enters Emerson Hall speaks Inuit? Background knowledge again?

As a matter of fact, I don’t believe that as a child I had any idea how often either of the conflicting regularities in the example (conflicting in that one of them must fail if \( U \) enters Emerson Hall) had been confirmed, but I would still have known enough not to make the “silly” induction that \( U \) would stop being able to speak Inuit if he entered a building (or a country) where no one had spoken Inuit. Again it is not clear that the knowledge that one doesn’t lose a language just like that is really the product of induction—perhaps this is something we have an innate propensity to believe or, if that seems unreasonable, something that we have an innate propen-
of information involved); and it is not clear that the result would be more than a gigantic "expert system". No one would find this very exciting; and such an "intelligence" would be dreadfully unimaginative, unable to realize that in many cases it is precisely background knowledge that needs to be given up.

(2) One could undertake the more exciting and ambitious task of constructing a device that could learn the background knowledge by interacting with human beings, as a child learns a language and all the cultural information, explicit and tacit, that comes with growing up in a human community.

The Natural Language Problem

The second alternative is certainly the project that deserves the name of Artificial Intelligence. But consider the problems: to figure out the information implicit in the things people say, the machine must simulate "understanding" a human language. Thus the idea mentioned above, of sticking to an artificial "ideal language" and ignoring the complexities of natural language, has to be abandoned if this strategy is adopted; abandoned because the cost is too high. Too much of the information the machine would need is retrievable only via natural language processing.

But the natural language problem presents many of the same difficulties all over again. Some thinkers—Chomsky and his school—believe that a "template" for natural language, including the semantic or conceptual aspects, is innate—hard-wired—by Evolution the Tinker. Although this view is taken to extremes by Fodor, who holds that there is an innate language of thought, with primitives adequate for the expression of all concepts that humans are able to learn to express in a natural language, Chomsky himself has hesitated to go this far: it seems that what he is committed to is the existence of a large number of innate conceptual abilities which give us a propensity to form certain concepts and not others. (In conversation, he has suggested that the difference between postulating innate concepts and innate abilities is not important if the postulated abilities are sufficiently structured.) At the opposite extreme, there is the view of classical behaviorism, which sought to explain language learning as a special case of the application of general rules for acquiring "habits"—i.e., as just one more bundle of inductions. (An in-between position is, of course, possible: why should language learning not depend partly on special-purpose heuristics and partly on general learning strategies—both developed by evolution?)

The view that language learning is not really learning, but rather the maturation of an innate ability in a particular environment (somewhat like the acquisition of a bird call by a species of bird that has to hear the call from an adult bird of the species to acquire it, but which also has an innate propensity to acquire that sort of call) leads, in its extreme form, to pessimism about the likelihood that human use of natural language can be successfully simulated on a computer—which is why Chomsky is pessimistic about projects for natural language computer processing, although he shares the computer model of the brain, or at least of the "language organ", with AI researchers. Notice that this pessimistic view of language learning parallels the pessimistic view that induction is not a single ability, but rather a manifestation of a complex human nature whose computer simulation would require a vast system of subroutines—so vast that generations of researchers would be required to formalize even a small part of the system. Similarly, the optimistic view that there is an algorithm (of manageable size) for inductive logic is paralleled by the optimistic view of language learning: that there is a more or less topic-neutral heuristic for learning, and that this heuristic suffices (without the
The Mind as Chaos

When I published a paper with these arguments, the American philosopher Daniel Dennett characterized my view as “the mind as chaos.” This is an interesting charge.

Up to now I have been discussing the prospects of simulating human intelligence, not the prospects of finding informative models of the way the brain works. Dennett is connecting the two tasks: in effect, he is claiming that pessimism about the success of AI in simulating human intelligence amounts to pessimism about the possibility of describing the functioning of the brain. Hidden in this charge is a variant of Pascal’s wager: you have nothing to lose if you assume AI will succeed and you are wrong, but if you assume AI will not succeed, you will lose the only chance there is to describe the brain. But what connection is there between simulating intelligence and describing the brain?

Even if the computer model of the brain is correct, it does not at all follow that AI will succeed. As mentioned above, Noam Chomsky believes the computer model is correct, but he does not expect AI to succeed. Language-using, he once put it to me in conversation, is not a separable ability of human beings: you can simulate baseball-throwing without simulating total human intellectual capacity, but you cannot simulate

language-using—even language-using in a fixed context, such as going to the store and buying some milk, without simulating total human intellectual capacity. Yet Chomsky does not despair of understanding the brain; we can understand the weather without being able to predict it any better than we could before, and we may understand the brain, as a hierarchically structured system of computational systems (“modules”), without being able to describe all of them and all of their interactions well enough to predict or even simulate the brain’s activities.

Another example which makes the same point is the current interest in computer models of the brain which do not assume that the brain computes using “representations” and rules for manipulating those representations in the style of a logical calculus. Perhaps the most interesting of these is the “neural Darwinist” model suggested by Gerald Edelman. Knowing that such a model of the brain was correct would not, in and of itself, enable us to predict which inductions the person whose brain that would make; that depends on the system(s) of hard-wired-in basic similarities, and (in the “neural Darwinist” model, on the operation of an analogue to natural selection in the unique individual brain) there may be a vast number of such systems (and selection events) at different levels of the brain’s processing activity. Yet, if we verified that such a model was correct, we would hardly express the discovery by saying “the mind has turned out to be chaos”. And the same thing goes if we discover that some model that does not come from computer science at all is the best model for the brain’s activity. Many systems are too complex for us to survey and predict or simulate their activity in detail; this is not to say that we cannot seek useful theoretical models of such systems. To take an example from a totally different field, pessimism about the possibility of ever realistically simulating the behavior of an
economy over a reasonably long period of time is not the same thing as pessimism about the possibility of a science of economics.

There is another side to Dennett's charge that I think the mind is chaos, however. Dennett is saying—and Fodor often says—that pessimism about the power of computational models is skepticism about the possibility of "cognitive science". But the hidden premise in both thinkers' minds is a reductionist one. There is, in fact, an enormous amount of cognitive psychology that is not at all reductionist. There is no reason why the study of human cognition requires that we try to reduce cognition either to computations or to brain processes. We may very well succeed in discovering theoretical models of the brain which vastly increase our understanding of how the brain works without being of very much help to most areas of psychology, and in discovering better theoretical models in psychology (cognitive and otherwise) which are not of any particular help to brain science. The idea that the only understanding worthy of the name is reductionist understanding is a tired one, but evidently it has not lost its grip on our scientific culture.

For the last three centuries a certain metaphysical picture suggested by Newtonian or Galilean physics has been repeatedly confused with physics itself. (More recently, metaphysical pictures suggested by biology and by computer science have been confused with those subjects themselves, in much the same way.) Philosophers who love that picture do not have very much incentive to point out the confusion—if a philosophical picture is taken to be the picture endorsed by science, then attacks on the picture will seem to be attacks on science, and few philosophers will wish to be seen as enemies of science. As far as our ways of understanding mind and language are concerned, the thrust of that picture was well captured by the claim of La Mettrie that man is a machine.

The discovery of the idea of evolution by natural selection by Darwin and Wallace approximately a hundred years later seemed to add further evidence for the thesis that mind is to be understood by being reduced to physics and chemistry (we know from Darwin's journals that that is how he himself was inclined to see the matter). Today even materialist philosophers do not think that follows; it is on computer modeling, rather than on direct physical or chemical explanation, that thinkers of a reductionist bent, like my former self, now pin their hopes. But recently evolutionary theory has again come into play in
the future (my "absolute future"). Events outside my light cone are such that they can be neither causes nor effects of what is happening now, since no causal signal can travel faster than light.


8. Wittgenstein, Lectures, p. 68.


11. Wittgenstein, On Certainty (Oxford: Basil Blackwell, 1969), §605: "But what if the physicist's statement were superstition, and it were just as absurd to go by it in reaching a verdict as to go by an ordeal by fire?"

12. Throughout this chapter, references by section number are to On Certainty.


14. See the discussion of relativism in chap. 5 of Reason, Truth, and History.


9. A Reconsideration of Deweyan Democracy


2. Although Williams also considers the Kantian strategy, he concludes that it is unworkable, and that if any objective justification could be given—which he doubts—it would have to be along Aristotelian lines. See chap. 3 in Williams, Ethics.

3. Ibid., p. 45.

4. Ibid., pp. 45–46.


8. In this respect Dewey differs radically from Habermas, who in many ways agrees with Dewey that democracy is a prerequisite for rational social decision making with respect to ends as well as with respect to means, but wishes to establish this by a "transcendental argument". For a discussion of the similarities and differences between Dewey's views and those of Habermas and K.O. Apel, see the version of this chapter published in the Southern California Law Review 63 (1990):1681–1688.


15. A similar point is made by Ruth Anna Putnam in “Weaving Seamless Webs,” *Philosophy* 62 (1987):207–220. The example she uses is that of a pacifist who has to decide whether and to what extent he is willing to participate in the war effort, for example by serving in a non-combatant capacity. As she says, “sometimes only within the frame of a whole life, and sometimes only within the frame of the life of a whole community, can these decisions be evaluated” (p. 216).

16. James makes this explicit in chap. 8 of *The Meaning of Truth* (1909), particularly in footnote 9, where he writes “whether the pragmatic theory of truth is true really, they [the pragmatists] cannot warrant—they can only believe it. To their hearers they can only propose it, as I propose it to my readers, as something to be verified *ambulando*, or by the way in which its consequences may confirm it”. *Pragmatism and the Meaning of Truth* (Cambridge, Mass.: Harvard University Press, 1975), p. 281.


18. This is not to say that religious belief is unwarranted. What I myself believe is that it is “warranted”, though not by evidence. This stance is intimately connected with the sense of existential decision.


21. James, *Talks to Teachers on Psychology*, first published in 1899

(Cambridge, Mass.: Harvard University Press, 1983), p. 5. The entire concluding paragraph of the preface, from which this quotation is taken, is a pacem to tolerance and an attack on “the pretension of our nation to inflict its own inner ideals and institutions vi et armis upon Orientals” (James was referring to the Philippines).


23. Thus constitutional restrictions on the unlimited exercise of majority power, such as the Bill of Rights, are not a limitation of “democracy” in Dewey’s sense, but a protection of it.