

Ronald M. Swartz, Henry J. Perkins and Stephanie G. Edgerton, *Knowledge and Fallibilism: Essays on Improving Education* (New York: New York University Press, 1980, pp. LV, 152, \$16.95).

The authors of this book espouse the view that human understanding is imperfect and fallible, and they explore some implications for education of that position. The fallibility is not the commonplace admission that we all make mistakes, but the philosophical standpoint of some modern philosophers of science. The book begins with a substantial introduction by Swartz, outlining fallibilism in philosophy. There is then a collection of essays dealing with educational implications. I shall discuss them in turn.

"Fallibilism is a philosophical perspective which rests on the assumption that people can never be certain that their ideas or beliefs are absolutely true. For a fallibilist, all that is known today will very likely be superseded by very different and potentially better ideas" (p. XI). This says that we should not expect our mundane knowledge, or even the systematic knowledge of the sciences, to be certain and irreversible. Three major philosophers, who agree on this point, but differ on other central issues on the nature of scientific enquiry, are discussed in the introduction. Russell believed that there is such a thing as absolute truth, but that it is unobtainable, although still the rightful aim of science. Science should proceed by attempting to justify, by experience, our ideas and theories, but the inductive procedures which science needs to use can produce only provisional, not conclusive confirmation. Dewey agreed with Russell on scientific method, but not on truth. He believed that there is no such thing as absolute truth, but only pragmatic truth, understood as the prevailing opinion of scientists. This lesser goal of pragmatic truth is achievable by scientific enquiry with induction, but is not final and can be superseded by a new opinion. Lastly, Popper agrees with Russell that there is absolute truth, but differs from both the others on scientific method. He believes that science should proceed by attempting to bring our ideas closer and closer to the unobtainable goal of absolute truth, and this does not require induction. Scientific theories should be regarded as conjectures which are open to falsification by disconfirming instances, rather than verification by confirming instances. A falsified theory can then be replaced by a, hopefully, better conjecture, but although it is possible to discover that a theory is false, it is not possible to conclusively prove one to be true.

The authors are indebted to all three philosophers, but it is Popper whose ideas they most closely follow. Popper's theory is distinctive for its avoidance of the problem of induction. This problem was introduced by Hume, who pointed out that no empirical generalization can be demonstrated by experience to be true. Such a generalization implies statements about the future which, inevitably, is not yet available for observation. Thus, no matter how many white swans have been detected, the statement, "All swans are white," might yet be confounded by the discovery of a black or purple one next year. Russell believed that this makes science incapable of attaining absolute truth. What is distinctive about Popper is that he suggests that the hypothesis, "All swans are white," should not provoke the search for white swans but rather the search for ones of another colour. No theory is proven true, but a theory can stand as not yet proven false. And the results of scientific enquiry are a succession of improved ideas, rather than an ever-expanding storehouse of known truths. The authors are of the opinion that this has significant implications for education.

This introduction is generally well done. It is an interesting and informative piece. The three kinds of fallibilism are carefully outlined and a summary of them, in the form of a table, is a handy reference (p. XLIX). So far, the book is engaging - even exciting - and shows promise of being a quantum-leap advance on the familiar work in epistemology and education which offers tedious analysis of what it is to know, learn or understand.

The rest of the book consists of three parts, each of three chapters. The opening chapter brings to our attention the fact that social studies planners are unaware of the problem of induction, and the second considers the place of mistakes in the learning process. These are banal and inconsequential. Not so the third, "Against Learning," by Perkins, which is the most significant piece in the book. The premise is that anything that is learned may be mistaken. From this it follows that authoritarianism is wrong, and prevents the advancement of knowledge. But the unusual extension is made that to suppose that one's own experience makes things true is also an authoritarian or dogmatic stance and has the same tendency to close the mind to criticism or revision. It is therefore no good simply transferring the status of final authority from teacher to learner. Instead, as the title suggests, we need to question whether schools are there to promote learning. Perkins suggests that schools are not for imparting justified ideas or skills, but for the improvement upon, and refinement of, what ideas or skills the children already have. Just as in science, progress is made by revising existing theories, the development of the individual should be by the gradual amelioration of his cognitive and practical abilities.

By this view, the school is to be regarded as a critical agency, and the teacher as someone not with truths to offer but with the capacity to eradicate error. "I suggest we adopt the closet-cleaning metaphor. Every student has a closet full of ideas, skills and dispositions that he has accumulated in the course of his life. But much of what he has accumulated is false, mistaken, erroneous, mythical, inadequate and may even be harmful. The educational process is one of closet-cleaning" (p. 34). Authoritarianism is avoided by construing the teacher as a friendly critic. No level of skill is final; improvement is always possible. When new ideas, unfamiliar to the children, are presented, they too must be offered for criticism from teacher and students.

Despite the fact that the metaphor is perhaps ill-chosen or embarrassing, there is much in this chapter that is stimulating. It is a serious attempt to derive educational prescriptions from philosophical theory, and is not oblivious to practical questions such as what kinds of material are suitable for what level of schooling, given the fallibilist project (p. 39ff). I would say that the position offered is defensible with respect to its account of the nature of knowledge, especially science, and to its rejection of authoritarianism. Criticism would have to come from a wider perspective, and might include these two points: (1) While it is true that the nature of the subject matter means that refinement is possible, it still might be that the

attitude of a person who is always striving for betterment is degenerate. There is the fusspot whose work is never done, and the neurotic compulsive who washes his hands continually, each of which could be described as a good fallibilist. And it is not obviously wrong to learn just enough of a skill to get by, and take no interest in increasing one's competence. (2) In the industrial age, it is arguable that the continual refinement in activities which are a part of life is incompatible with the increased quality of life as a whole. Thus, the supporter of the idea of public workshops where customers participate in the construction of the less intricate kinds of appliances, might concede that the designs would have to be simple and static, and that the quality of product was inferior to that of the latest from the assembly line, but that this was a price worth paying for the pleasure of making and of understanding one's household appliances which was an increase in the quality of *life*.

The second part is concerned with reforming schools, and opens with a piece called "Liberalism and Imaginative Educational Reforms" in which the author argues that social theorists should have a free hand in devising theory, but, because fallible, should not necessarily be allowed to implement their proposed reforms. This is no doubt a reasonable position, but the chapter is on the whole trite, and is perhaps the worse case in the book of a recurring irritating feature - the peppering of nugatory material with references to overdone footnotes linking the author's thoughts to those of major thinkers. Chapter 5, by Perkins, is called "How to Improve Your School". In it, a revision is called for in the way change is construed. Rejected is the view, called teleological, which sets up a goal or ideal and then tries to realize it - a view presupposing that the goal is good, if not perfect. In its place is proposed an alternative, called ecological, which consists of steady improvement of what exists by way of constructive criticism and defeasible progressions, a view which is in keeping with human fallibility. The analysis of the two views, and the way that the first view thwarts improvements is acute, and once again a good application of philosophical theory to a practical matter. Of especial interest is the account of two irrational manoeuvres used in discussion to dampen the call for change - the "cool-the-critic" move which questions the speaker's credentials, and the move of self-justification which simply sanctions the status quo (p. 86-7). Both moves are invalid, says the author. True, and all too common. Fortunately, Perkins does say something about how constructive critical dialogue can be fostered, but the task must surely be an uphill one, since thought-stopping manoeuvres are the usual means of treating serious matters, especially by politicians and journalists. The second part closes with a brief but suggestive piece called "Skepticism and Schooling". One important observation is that it can have harmful effects if children internalize their knowledge instead of regarding it as objective and impersonal. There is material here which could be elaborated and extended.

Part III is concerned with educational innovations. The first essay is called "Education and the New Pluralism," and although interesting to read, says nothing that is not already familiar. Chapter 8, "Induction, Skepticism and Refutation," says nothing of interest. The final contribution derives from fallibilism a reasonable case for self-government in schools, and is worth reading.

As indicated, the quality of the book is very uneven. There are a few pages which live up to the promise of the introduction, but much of the book is dispensable. Perhaps more important is that some of the material can be improved upon or extended, a fact which the authors would welcome. I have shown parts of the book to students, who find it unengaging, so I do not recommend it as a textbook. But the project these writers undertake is worthwhile, and their limited success at least shows that there can be substantive positions on practical matters derived from philosophy, and interesting philosophy at that. It is to be hoped that this book will stimulate more work on fallibilism, and on the related topic of what we can most rationally do to live with the fact that we are only imperfectly rational. Also, a teacher of philosophy of education could begin with this book in devising courses which are interesting and worthwhile and which inform students of the nature of scientific reasoning and of the revolutions in scientific thought which are their immediate heritage.

Richard Barrett  
Concordia University