and those which are obviously unacceptable. Perhaps! But one wonders if students, who successfully use the two conditions to discuss media reports, will have learned from Giere enough about the nature of science to distinguish good reports from bad when, years from now, he has forgotten the two conditions.

As I completed this report, this criticism of both Giere and my teaching was given an added point when I told one of my students who completed the class very successfully just two months ago that I had finished the report. He asked: "Did you criticize Giere for getting into all that complicated stuff about theories when all along he was merely making a very simple point about the use of the two conditions?"

It really is very difficult to make some things easy in a satisfactory way or to convince others that some things ought not to be thought of as simple.

REASONING
Michael Scriven

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Into a growing market of informal logic texts, many of which are either interminable and boring lists of argument fallacies or watered-down formal logic manuals, Michael Scriven introduces Reasoning, an engaging alternative. With a conscious attempt to avoid making argument analysis a witch-hunt for fallacies or an over-technical glossary of logic terms, he endeavours to explain the nature of reasoning and argumentation and to demonstrate, step-by-step, how arguments are structured and a systematic means by which this structure can be drawn from prose and examined. The enterprise is as much a positive tuition in the construction of sound practical arguments as it is skill training in the rather more negative art of critical analysis. It is, most commendably, a teaching device to the last.

Scriven makes a considerable departure from a number of accepted views in logic and an even greater distancing move from standard approaches to informal logic. On the former, he gives up on talk of "validity" in favour of "sound inferences" and "true premises"; he eschews the use/mention distinction and its quotation mark symbolization; he makes a number of attacks against the utility of formal logic in "real reasoning", Scriven points out, for instance, that formal systems can have value to natural language arguments only if (a) the natural language can be encoded into the symbolism (b) transformations can be made within the calculus (c) the symbolism can then be decoded into the natural language; the value in this process being in the reliability of the transformations. However the encoding step, he maintains, is as problematic in all but trivial cases as the assessment of the original argument would have been. And he goes on to claim that formal systems have never developed a satisfactory way of dealing with assumptions, something which real arguments are rarely without. Equally, formal systems are rife with paradoxes such as that of "material implication"; and the willingness of logicians to substitute formal simplicity for practical utility is evident from the work of C. I. Lewis, and of Anderson and Belnap who simply do not tackle the need to distinguish "guarantees of truth for p" from "good reasons for believing that p" from "allows the derivation of p". Says Scriven: "The truth of p guarantees the truth of p, but it sure isn't a good reason for believing it" (p. xvi). To contrast with this, and to introduce the approach to be taken to informal logic (the latter point mentioned above), Scriven states: "This book is about good reasons, not repetitions or transformations. It's just a start on what shouldn't be but is, almost an untouched subject" (ibid).

What Scriven is after in this book, then, is to show the reader what real reasoning is and how to do it well. Specifically, his aims are to improve one's skill in "analysing and evaluating arguments and presentations" and in "presenting arguments, reports and instructions clearly and persuasively." To be improved as well are one's "critical instincts" and "knowledge about the facts and arguments relevant to a large number of important contemporary issues in politics, education, ethics, and several practical fields" (p. ix).

These aims are to be brought about by doing what other texts of this sort do not. For one thing, reasoning is to be construed more broadly than simply argumentation. Reading with understanding, for instance, is to be taken as a form of reasoning. Moreover, reasoning is shown to be a social enterprise --something that has to do with language, rational persuasion, open-mindedness, a commitment to truth and even a moral commitment to respecting other people's rights to make up there own minds on the basis of reasons or evidence. For another thing, the analysis of arguments is to be taught, not as is often the case, solely by a combination of principle and demonstration, but through a series of seven procedural steps, each of which is carefully explained and illustrated. These procedures direct the student's attention to careful reading (or listening), to distinguishing between reasons and conclusions and the particular relations among them, to drawing out assumptions or unstated premises (and being "charitable, i.e. fair," to the arguer in so doing), and to evaluating the argument, not just in light of the truth of premises and soundness of inference, but in view of, and this is important, other possible arguments that might be brought to bear. It is, perhaps, this last point that

does most to set Scriven's book apart from formal logic and other informal logic approaches because it shifts the focus of critical assessment from the internal consistency of the given argument to a more circumspective assessment, one which, among other things, anticipates counterarguments.

To these ends, he writes eight chapters. The first two deal with the nature, teaching, and learning of reasoning; the next four with the various aspects and refinements of his technique for argument analysis; and the remaining two with special types of arguments (e.g. scientific) and various extensions and ramifications of arguments and the analysis of them (e.g. decision making strategies, being reasonable and flowcharting).

It would be impossible in a book review to deal adequately with Scriven's charges against the practical utility of formal logic. One should, of course, note that many logicians would strongly disagree with Scriven. (See, for example, Peter Geach's view on this in "On Teaching Logic", Philosophy, Vol. 54, no. 207, 1979, p. 6.) I shall leave the matter, then, with this comment: it does not seem to me that the paradoxes with which formal logic has to contend and the difficulties of encoding go any way at all toward demonstrating that an intuitive natural language approach will necessarily be more effective; it shows only that formal logic has not lived up to its promise of reliability. But to show the inadequacies of formal logic for practical purposes one need to no more than point to the fact that formal transformations, even if they were reliable, are far too cumbersome for practical use, other than perhaps to professional philosophers in some aspects of their work. Surely few logicians ever expected formal logic to provide tools for every day discourse; since it is the latter with which Scriven is avowedly concerned, it was never really necessary for him to attack formal logic.

Going on, then, to consider Scriven's approach, one can not help but admire his clear-sightedness in recognizing, and providing remediation for, common weaknesses in students' abilities to reason. For instance, I have used Reasoning with ten classes of student teachers (about 300 students) and find four principal difficulties: the students' inability to understand what they read, their lack of awareness of the differences between expositions, explanations, and arguments, their inability to sort out the conclusion of an argument, once identified, from the premises and the lack of sensitivity of students to the importance of being consistent. Evidently Scriven's own research must have shown the same because, for the most part, these are 'deficiencies' that Reasoning endeavours to correct. His constant exhortations about careful reading are very effective as are the sections (especially Chapter Four, Sections 2-6) that differentiate arguments from explanations, etc., and provide ways of recognizing them.

Chapter Three is devoted to setting out the seven steps of argument analysis, an important feature of which is the use of diagrams to portray the relationship between premises, assumptions and conclusion(s) (though, of course, Scriven is not the first to use diagrams). On the whole, students seem to find the step-by-step approach helpful and the diagramming especially so. Unfortunately, a weakness in his presentation of the latter is that when the diagramming of premises and conclusions is explained, two options are given for portraying the relationship of each premise to the conclusion. In one case, circled numbers, each representing a premise identified in the argument, are joined directly to the circled number representing the conclusion, thus forming a many-to-one mapping (or one-to-one if there is only one premise); and in the other case, numerically depicted premises are presented horizontally with plus signs between them, and the conjoined numbers (premises) are then linked as a group to the numerically depicted conclusion. Now, what Scriven is trying to show is that in the former portrayal each premise offers independent support for the conclusion, and in the latter, the premises must be taken together. However, this is not made clear to the reader (on pp. 42-43) until nearly forty pages later (on pp. 80-82).

A second pedagogical weakness with diagramming is that Scriven does not make much use of it later in the text, which leads students to wonder about Scriven's own commitment to it's utility. Indeed, the same problem arises with the discussion of 'inconsistency'. In Chapter Three, Section Two, it is said to be of great moment in argument analysis but direct use of the concept is not made again, other than as a question in one of the quizzes (at the end of Chapter Three). The same again could be said of the somewhat technical discussions in Chapter Four of inference, conditional statements and necessary and sufficient conditions (Sections One, Two and Three, respectively). Indeed, given the very practical thrust of the book, it is not at all clear that these discussions are essential--particularly the extended treatment of the truth table in dealing with sound inference and true premises. (Regrettably as well, in these sections there are some printing errors in very awkward places. On page 59, paragraph 3, clause 12 should read "If the premises are T..." in order to correspond to the table that follows on the same page; and on page 63, paragraph 2, lines 4-5, should read "Wherever it's true that q follows from p, it's true that p..., is a sufficient condition for q...", and paragraph 3, lines 1-3 should read "If p implies q, which means that p is a sufficient condition for q, then p guarantees the truth of q, that is, it makes the truth of q necessary.")

There are two other pedagogical points about which I want to make a brief note. First, many of the sections do not have headings; Scriven suggests that students should supply their own. In my experience, students either do not do this or do it poorly, the consequence of which is that they do not find Reasoning as useful a reference book as they otherwise might. Second, misleading hints and very few instructions about how to answer questions are both intentional on Scriven's part. The idea is to make students more independent but frequently it simply leaves them adrift--at their wit's end to know what to do.

Although flawed and in some respects disappointing, it would be a great mistake to think that Reasoning is without considerable merit. Apart from the difficulties mentioned, Scriven does present a very useful approach to argument analysis. His seven steps prove to be helpful to students; he ignores the inductive/decuctive distinction which causes no difficulty for purposes of argument analysis and saves confusion about them; he provides an excellent discussion of counter-exampling; technical jargon is scrupulously avoided; and creative thought is shown to be in no way incompatible with reasoning--something that is very important for some students. Scriven's style is charmingly informal and his examples interesting and contemporary. And, he makes a very laudable attempt to force students to think independently and with confidence. None of these are mean achievements.

conference notices

The Third National Workshop-Conference on Teaching Philosophy will be held at the University of Toledo from August 12-15. There will be three morning workshops and four afternoon workshops. The morning workshops cover areas of broad interest, while the afternoon sessions will be on specific topics of interest to philosophy teachers.

Of particular interest to our readers will be the morning workshops on Introductory Logic, for which the tentative line-up is:

August 13: Review of Recent Developments in Informal Logic
--Ralph H. Johnson
Informal Logic as Logic
--J. Anthony Blair

August 14: Introductory Logic as Rational Persuasion
--Rosalind Ekman Ladd
Conceptual Skills Prerequisite for Logic
--Eric Lindermayer

August 15: The Place of Logic in the Curriculum
--Robert Baum
Review of Recent Textbooks and Other Material
--Philip Pecorino

For further information, write to

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Department of Philosophy
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Toledo, Ohio 43606

WORKSHOP

The Institute for the Advancement of Philosophy for Children is also sponsoring a series of two-week summer workshops in philosophy for children to be held at the Pocono Environmental Education Center at Dingman's Ferry, Pennsylvania.

July 1-July 15	Reasoning Skills in Language Arts* and Social Studies
July 1-July 15	Basic Reasoning Skills Reasoning Skills in Ethics
July 16-July 31	Comprehensive program for teachers with philosophy background
July25-August 8	Basic Reasoning Skills Reasoning Skills in Language Arts
Aug. 16-Aug. 30	Basic Reasoning Skills Reasoning Skills in Social Studies

*Pre-requisite: Training in the Basic Reasoning Skills Program.

For further information, write to: IAPC Summer Workshops, Montclair State College, Upper Montclair, NJ, 17043.

books received

TEXTBOOKS

James D. Carney and Richard K. Scheer, Fundamentals of Logic, 3rd edition. New York: Macmillan, 1980. Cloth. x, 461 pages.

Karel Lambert and William Ulrich, The Nature of Argument. New York: Macmillan, 1980. Cloth. xii, 261 pages.

Thomas Schwartz, The Art of Logical Reasoning. New York: Random House, 1980. Paperback. x, 310 pages.

BOOKS

Robert J. Gula, Nonsense: How to Overcome it. New York: Stein and Day, 1979. Cloth. 204 pages.

David T. Tuma and Frederick Reif, editors. Problem Solving and Education: Issues in Teaching and Research. Hillsdale, New Jersey: Lawrence Erlbaum Associates, 1980. Cloth. xi, 212 pages.