Book Review

ARGUMENTS ABOUT ARGUMENTS: SYSTEMATIC, CRITICAL AND HISTORICAL ESSAYS IN LOGICAL THEORY. BY MAURICE A. FINOCCHIARO. Cambridge: Cambridge University Press, 2005. 478 pp. Paperback ISBN 10:0521618533, £20.99, US$35.99. Hardback ISBN 10:05218532373, £48, US$80.

For a generation Maurice Finocchiaro has made important and distinctive contributions to both logic and the historiography of science. The present volume collects twenty-three of his papers to form a welcome retrospective of this work. As the subtitle reveals, Finocchiaro conceives of these pieces as essays in logical theory. Logical theory Finocchiaro understands in a broad and attractive way. One might ask whether logic is

> … an abstract science that studies entailment, truth functions, the calculus of propositions, predicates, relations, identity, etc.; or is it a special social science that studies the mental activities of reasoning and argument? If the former is the case, how does logic relate to mathematics? Is it just a branch of mathematics? Or does it provide the foundations of mathematics? If logic is a social science, how does it relate to cognitive psychology? … So we may ask, what is or ought to be the relationship between formal or symbolic logic and reasoning and argument? (pp. 6-7)

Like the Church of England, Finocchiaro's logic is a big tent. It encompasses all that is canvassed in the quoted passage, and perhaps more. But not everything in the tent is definitively linked to everything else in it. In particular, Finocchiaro is one of a growing cohort of logicians who queries the fruitfulness of the tie between mathematical logic and the logic of argument and reasoning.

> … I adopted from Toulmin what seemed to be his solution of the problem of the epistemology of the science of logic and argument. He seemed to be suggesting a critique of formal or symbolic logic as being insufficiently concerned with actual human reasoning, with nondeductive arguments, such as are common in law, with argumentation in natural language, and with practical applications; and he seemed to be making a plea for a logical theory that was more empirical, more general, more natural, more practical, and more historical. (p. 7)

The Toulmin cited here is the Toulmin of *The Uses of Argument*, which was assigned by Finocchiaro's teacher, Michael Scriven, as reading for Scriven's graduate seminar at Berkeley in 1967, "Elementary Reasoning from an Advanced Standpoint." Thus was born one of Finocchiaro's signature themes, the idea that the broad tent must make room for something that he came to call *empirical logic*. Part of what gives to

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logic its empirical cast is the *historical-textual* approach to its study (p. 14),

> … which focuses on the analysis of historically important texts containing reasoning, arguments, and critical thinking. It is a special case of an approach that is broadly empirical but normative, and it may be instructively contrasted not only to the apriorist orientation of formal deductive logic but also to the experimental approach of cognitive psychology. (p. 14)[1]

Finocchiaro began his professional life as an historiographer of science. His first major work, *Galileo and the Art of Reasoning* (1980) is a masterly examination of the argumentative structure of Galileo's *Dialogue on the Two Chief World Systems*, an investigation which led him to see Galileo, first and foremost as "a practitioner of the art of reasoning, a critical reasoner, a practical logician, an applied logician, a logician in action." (p. 12). One might suppose that these words apply equally as a description of Finocchiaro's own approach to logic.

Logic, then, has a fieldwork component. In Finocchiaro's hands, an important link between logic and reasoning on the ground is provided by his work on the historiography of science. His analysis of

> critical thinking in science (chapters 18-23) is obviously a series of case studies in the history of science dealing with past figures and episodes of paradigmatic importance; these chapters belong to a genre that has now become quite common among historically minded philosophers of science, but whereas such case studies often lead such scholars to relativist and evolutionist conclusions, I am led into the almost opposite direction, for my historical scientific case studies are meant to add diversity to the kinds of evidence and data on which my theoretical framework is based. (p. 17)

And what figures they are: Galileo, Huygens, Newton, Lavoisier, Einstein, Boltzmann and the *dramatis personae* of the Copernican Revolution. It is difficult to over-emphasize the distinctive importance of these case studies, not only for the development of logic but for the philosophy of science itself. Everyone knows of the dominant importance to science of the methods of data collection, experimentation and hypothesis-formation, as well as the mechanisms of explanatory force. But, as Finocchiaro keenly observes, one of the most powerful instruments of scientific progress is the critical thrust of competing arguments. Long ago Toulmin recommended the law as a natural place for argumentation theorists to test their speculations and refine their organizing intentions. Finocchiaro makes the same recommendation with regard to science, and follows his own advice in the historiographical writings.

[1] Chapters exemplifying the historical-textual approach are 2-4, 11, 12, 18-21. Numerals alone denote chapters. Numerals preceded by 'p.' or 'pp.' denote pages.

The historiographical essays also exemplify—as do his systematic and critical chapters, though somewhat unevenly—other important features of Finocchiaro's methodology. A prominent feature of this work is its *dialectical* character; another is the emphasis it places on *interpretation*; and a further feature is what Finocchiaro himself calls *self-referentiality*. His approach is dialectical

> in at least two senses of this controversial concept. One is that in the subject matter studied, I tend to stress counterarguments, objections, criticism, evaluation, potential (and not necessarily actual) dialogue, and the clarification (rather than the resolution) of differences of opinion …. (p. 14)[2]

Finocchiaro's dialectic is not intrinsically dialogical, nor is it invariably aimed at the removal of disagreement. In drawing a distinction between dialectic and dialogue, Finocchiaro echoes (p. 294) a point advanced by J.A. Blair in "The limits of the dialogue model of argument" (Blair, 1998), according to which a "solo" argument is one in which respondent and audience are physically absent, a "duet" argument is one in which they are present, and the idea that a solo argument is actually a duet argument with oneself is at best a metaphor. We see in Finocchiaro's conception of dialectics, two departures from the pragma-dialectical tradition. One is this Blairian resistance to the claim that all argument is/or can be "reconstructed" as duet argument. The other is its resistance to the assertion (or stipulation) that critical discussions fail unless they eliminate the disagreements that occasioned them in the first place.

Finocchiaro's interpretative approach is directly tied to his conviction that it is not always appropriate to the goodness of a critical argument that it manages to eliminate disagreement, and the corresponding conviction that sometimes an argument gives full value when it enlarges the parties' understanding of the issues that (continue to) separate them. Thus his approach is interpretative

> In the sense that it stresses the understanding and reconstruction of arguments (as distinct from their evaluation and criticism) to a far greater degree than is commonly the case. (p. 14)[3]

We see in this the influence of Finocchiaro's teacher, Scriven, whose principle of charity bids us to interpret an opponent's argument fairly, with an understanding of his perspective and free of cheap-shots and "lawyerly" tricks. The fourth principle, self-referentiality, is a kind of meta-precept.

> Related to these three methodological traits [historical-textual, dialectical and interpretative] is a further approach. That is, in

[2] For displays of the dialectical approach, see especially chapters 13, 15 and 17; but see also 4, 7, 12 and 16.
[3] The interpretative emphasis is on display in chapters 2, 6, 10 and 16-21.

> doing informal logic and argumentation theory (i.e., in theorizing about arguments and critical thinking), I take very seriously the goal of practicing what one preaches, and so I tend as much as possible to treat the views of other scholars … (p. 15)

in ways that conform to the three methodological principles already identified.[4]

I have been concentrating so far on Finocchiaro's methodology, and in so doing, I have barely scratched the surface. In addition to the four principles presently in view, Finocchiaro develops what he calls a *conceptual framework* (p. 15), which is reflected in a number of definitions of key terms and some principal theoretical claims. In the interest of space I shall merely list the places where these definitions may be found in the book, and give very short formulations of the main theses, also with indications of where to find their fuller development in the text. In the category of definition, the following are dealt with in the places noted:

> *Reasoning* (1, 3, 4, 12, 14, p. 15)
> *Argument* (17, p. 15)
> *Argument analysis* (5, p. 15)
> *Critical reasoning* (5, p. 15)[5]
> *Methodological reflection* (5, 22, p. 15)
> *Critical thinking* (5, 10, p. 15)
> *Judgment* (12, 14, 21-23, pp. 15-16)
> *Informal logic* (1-3, 5, p. 16)

In the category of claims or principal theses we find:

> *Fallacies*: "So-called fallacies (so called in textbooks) are typically either nonfallacious arguments, non-arguments or inaccurate reconstructions of the originals" (6, p. 16) … "but many arguments can be criticized as fallacious in various identifiable ways" (7, p. 16).
> *Asymmetry*: "There appear to be various important asymmetries between the positive or favorable and the negative or unfavorable evaluation of arguments" (8, p. 16) …" although one particular alleged asymmetry seems untenable, namely the alleged fact that it is possible to show formal validity but not formal invalidity" (9, p. 16).
> *Ad hominem reasoning*: "One of the most effective ways of criticizing arguments and reasoning is to engage in *ad hominem* argument in the seventeenth century meaning of this term, namely to derive a conclusion unacceptable to opponents from

[4] The self-referential approach takes hold especially in chapters 9-11 and 16-17.
[5] Critical reasoning includes what Finocchiaro calls "self-reflective argumentation", which shouldn't be confused with self-referential thinking. One constructs an argument of one's own in a self-reflective manner when one pays due heed to what interpretation it may call for and what evaluation it may deserve. (pp. 94-95)

> premises accepted by them (but not necessarily by the arguer); and correspondingly one of the greatest weaknesses of human reasoning is the failure to engage in such *ad hominem* argumentation" (4, 16, 18, p. 16).
> *The tie to science*: "Argumentation and critical thinking play an important and still unappreciated and understudied role in science" (18-23, p. 16).

These claims are developed against a background of critical inspection of the works of others. It is a rich feast. Included here are:

> *Perkins*: "David Perkins's psychological experiments on the difficulties affecting everyday reasoning" (4).
> *Massey*: Gerald Massey's thesis that there is an asymmetry between the formal validation and formal invalidation of arguments" (9).
> *Siegel*: "Harvey Siegel's 'reasons' conception of critical thinking" (10).
> *Cohen*: "L. Jonathan Cohen's metaphilosophical view that analytical philosophy consists largely of inductive reasoning in which generalizations about concepts are based on particular intuitions" (11).
> *Gramsci*: "Antonio Gramsci's views on logic, politics, dialectics, intellectuals and philosophy" (12).
> *Barth and Krabbe*: "Else Barth's and Erik Krabbe's attempt to move logic from an axiomatic to a dialogical approach" (13).
> *Freeman*: "James Freeman's dialectical account of the macrostructure of arguments" (13).
> *Arnauld and Nicole*: "… the logical instrumentalism and the theory of argument in … [the] *Port Royal Logic*" (14).
> *Amsterdam*: "… the account of complex argumentation by the Amsterdam pragma-dialectical school of argumentation theory" (15).
> *Walton*: "Douglas Walton's dialectical account of the distinction between argument and explanation" (15).
> *Johnstone*: "Henry Johnstone's metaphilosophical view that all valid philosophical arguments are *ad hominem*" (16).
> *Goldman*: "Alvin Goldman's moderately dialectical definition of argument" (17).
> *Johnson*: "Ralph Johnson's strongly dialectical definition of argument" (17).
> *Hamblin*: "C.L. Hamblin's account of argument in general and of *ad hominem* argument in particular" (18).
> *Shapere*: "Dudley Shapere's account of scientific change and rationality" (22).

Popper: "Karl Popper's critical rationalism in general and account of scientific rationality in particular" (23).

The critical essays are a natural occasion to test Finocchiaro's fidelity to his own methodological principles, especially the fourth (self-referentiality). Of course, it very much lies in the nature of the texts selected for criticism as to whether and to what extent they admit of full-bore application of the historical-textural, dialectical and interpretative *modus operandi*. On the one hand, the examination of Henry Johnstone's analysis of philosophical argument both admits of and receives a fair measure of Finocchiaro's methodological treatment. Johnstone's texts are much in evidence here. They receive careful interpretation, which is frequently sensitive to countersuggestions that a Johnstonean might make. On the other hand, Finocchiaro's rejection of the traditional approach to the analysis of fallacies is (as he himself is fully aware) less responsive to the probings of the historical-textual and interpretative method, as well as being a bit light on the dialectical side. I say these things uncomplainingly. The traditional approach to fallacies has generated a very large literature, itself falling well-short of overall consensus. Finocchiaro sets out his case against mainstream fallacy theory in two chapters (6, 7), running to a scant thirty-eight pages. That's not much space to give the methodological precepts free reign. Finocchiaro's methodology, like everyone else's, is an idealization which fits the cut and thrust of actual application with differential smoothness and completeness. It is all down to the character of the texts up for consideration.

An overwhelmingly attractive feature of this book is its learnedness, its philosophical groundedness, its sheer intellectual range. I am hard put to think of a rival in these respects unless it is Stephen Toulmin himself, who had such an early influence on Finocchiaro. One thinks, too, of Michael Scriven, Finocchiaro's mentor at Berkeley, and Nicholas Rescher, whose contributions to argument analysis are comparatively few, but whose vision of a realistic human logic has the sweep and boldness of Finocchiaro's own. Finocchiaro has made a multi-faceted contribution to issues that matter to readers of this journal. It is difficult to over-praise the historiographical writings, and no one should doubt the shrewdness of Finocchiaro's critical insights. There is plenty of room for honourable disagreement as to where his greatest contribution lies, but my vote goes to his visionary contributions to empirical logic.

In Finocchiaro's hands, logic is reconnected to its historical mission of a theory of reasoning and argument. Finocchiaro needs no reminder of the huge importance of mathematical logic, ensuing from mid-nineteenth century, and reaching a solid and brilliant maturity in its four main branches: set theory, proof theory, model theory and recursion theory. Mathematical logic is an intellectual triumph. But it is not free of attendant costs. One is that there are (on purpose) no *people* in mathematical logic. This alone severs the traditional tie to theories of human reasoning. A theory of human reasoning is a theory about what is done by human *agents.* Agents *pragmaticize* logic. Mainline systems of

logic are blends of syntax and semantics. Agent-centred logic adds the pragmatic dimension. It takes into account the impact of contexts of use.[6]

The admittance of agents as load-bearing entities of theory is hardly unknown in the mainstream traditions of formal logic.[7] In one prominent approach, agents are idealized practitioners of the theory's behavioral norms. This leaves the question of the status of those norms for beings like us. One standard answer is that they are binding on us even though we fail them routinely in actual practice. In some quarters, this triggers a verdict of rather substantial and systematic irrationality. In others, mitigation of the harshness of this judgment is sought in the plea that in actual practice human beings *approximate* to these norms without fully conforming to them or executing them, with the attendant suggestion that you and I are therefore "approximately" rational. Finocchiaro will have none of this as a statement of the general state of affairs in the logical behaviour of human individuals. For one thing, for beings like us, it is less often than not the case that the targets of our actual reasonings are governed by the standards of deductive validity and/or inductive strength (in the technical sense of the term developed by inductive logicians in the slip-stream of Carnap's ground-breaking work in the mid-twentieth century). This is a Toulminian point: *Good* human reasoning is rarely valid or inductively strong. Since it is precisely these traits that are the central preoccupation of the theoretical mainstream in logic, most of the going exemplars of this orthodoxy are of peripheral rather than central importance. It is here that Finocchiaro's distinction between apriorism in logic and a logic that is sensitive to empirical considerations bites hard. Mainstream logicians can idealize until the cows come home that reasoning is correct only when—or to the extent—that it is valid or inductively strong. Empirical logicians know better. They are struck by the fact that most reasoning on the ground doesn't even approximate to these standards, and yet much reasoning on the ground is of excellent quality and high pay-off.

Finocchiaro understands well that one cannot understand what good reasoning is in ways that are wholly divorced from how reasoning actually works, and succeeds, on the ground. So he rejects apriorism, and yet in doing so has no wish to embrace empiricism in logic. By this he means that he is not prepared to adopt as a conception of logic that kind

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[6] 'Pragmatics' occurs in Finocchiaro's index only as part of a reference to the official view of the school of Amsterdam. Of course, this is not to suggest that Finocchiaro is unaware of the significance of people for logic.

[7] By "load-bearing" I mean roughly, "indispensably linked to what counts as a theorem". Here is a case in point. In 1962, Jaakko Hintikka published *Knowledge and Belief* ([Hintikka, 1962]), a major step forward in the development of epistemic logic. Hintikka's system was an epistemic adaptation of Lewis's S4. In making the adaptation, Hintikka introduces agents. Agents have a direct bearing on what the system counts as logical truths. Included among the logical truths are those sentences whose negations it would be self-defeating for an agent to utter, that is, sentences that are self-sustaining for that same agent to utter. Suppose that we left Hintikka's adaptation of S4 entirely as he made it except for its provision for agents. Then in that truncated system, the category of logical truths could not contain sentences of the sort presently in view. Thus, the introduction of agents to Hintikka's logic was load-bearing.

of empiricism that J.S. Mill postulated for arithmetic (and against which Frege railed with such derision). Neither is Finocchiaro a psychologicist about logic, at least not in any bare-bones sense. In raising the question of how logic relates to cognitive science, Finocchiaro clearly presupposes that there exists some positive relationship between the two; but it's not identity. Similarly, in rejecting apriorism in logic, Finocchiaro steers well clear of the conceit that logicians are vocationally privileged arbiters of the good and the bad, that their apriori insights are stocked with normative guarantees.

This leaves unanswered a number of questions that are critical for the articulation of a comprehensive empirical logic. One is that, if the opposites of apriorism and empiricism are untenable for logic, how does logic manage to escape the one without falling into the other? How is logic to be empirical if empiricism is not an option for it? Equally, if cognitive science isn't logic—if, for example, Lance Rips' excellent book, *The Psychology of Proof* ([Rips, 1994]), is not logic—in what sense and to what degree is cognitive science supposed to influence—and bring an empirical cast to—logic? Similarly, if the normativity that logic has always aspired to is not to be vouchsafed by the logician's *apriori* apprehension of first principles (or whatever else), in what ways does an empirically oriented logic expose the axiological character of reasoning and argument? These are not questions that Finocchiaro answers here. Aside from passing references on pages 36 and 204, there is no discussion of normativity. This is not to say that Finocchiaro eschews the making of normative claims or discussing what others say about the role of norms in logic or philosophical analysis (as with his discussion of Cohen on norms at pages 198-200). But it is to say that there is no general account here of how Finocchiaro thinks that an empirical logic is able to lay bare the norms of good thinking, and no discussion of what confers upon those principles their normative legitimacy. Similarly, psychologism is briefly discussed in one place only (pp. 55-56), and only in a form of it which Finocchiaro attributes to Frege, namely, that the laws of logic are descriptive laws of thought.[8] On Finocchiaro's own view, a satisfactory empirical logic will have had something to do with—will in certain respects have been shaped by—the disclosures of cognitive psychologism. This is as it should be. It reflects the fact that when you admit human agents to logical theory, you admit them as they come, warts and all. Since psychologies are part of the standard equipment for human beings, in admitting them you also admit their psychological make-ups. So psychologism in logic is *somehow* true, that is, there is a sense—perhaps not either of Frege's senses—in which the theorems of logic are shaped by facts about that make-up. Another way of saying the same thing is that were those facts to be suppressed or

[8] In his attack on psychologism, Frege rejected at least two different claims. One is that the laws of logic have the same justification that empirical generalizations have. The other is that the only objectivity the laws of logic can lay claim to is intersubjective validity, that is, communal acceptance by practitioners.

ignored, then the theorems of the logic of human thinking would *have* to have been different.

I mention these omissions not to cavil about them, but rather to point out that Finocchiaro's empirical logic is a work in progress. By my lights, it is one of the most important and most exciting projects in the research programme of contemporary logical theory, and I very much hope that Finocchiaro will press ahead with it in his future work.

In the space that remains to me, I want to reflect on what is perhaps Finocchiaro's most heterodox thesis. This is the view that the more or less standard list of the fallacies aren't fallacies on the more or less standard conception of what a fallacy is. The standard list—what I have called the Gang of Eighteen—is not canonically fixed, needless to say, and in some variations it doesn't sum to eighteen. But there is a substantial overlap between the lists one finds in various of the better-known textbooks, and that is good enough for present purposes. This is the juncture at which I should declare an interest. In recent writings, I have advanced what I call "the negative thesis", according to which the (more or less) eighteen so-called fallacies aren't actually in the extension of the traditional conception of fallacy ([Woods, 2007a]). If this is right, the traditional fallacies aren't fallacies in the traditional sense of the term. To this is adjoined "a positive thesis" which says that most of the eighteen are in fact cognitively virtuous strategies for the transaction of our cognitive endeavours under press of scant assets – resources such as information, time, storage and retrieval capacity and computation complexity ([Woods, 2007b]). I don't see any clear indication in this book as to whether Finocchiaro might be drawn to the positive thesis, but there isn't the slightest doubt that he is a proponent of the negative one, although perhaps for reasons some of which are his alone.

Apart from its radicalness, what stands out about Finocchiaro's subscription to the negative thesis is how long he has held it. "Six Types of Fallaciousness" first appeared in 1987, and it was preceded six years earlier by "Fallacies and the Evaluation of Reasoning" (6), in which one finds, if not full-bore endorsement, then at least the stirrings of the negative thesis. Even more surprising is the, to date, almost wholesale indifference of the fallacy theoretic community. Why should this be? Is it that the negative thesis is just too crazy for words? Is it that the contemporary research community fails to heed the Finocchiaroian principles of interpretative and dialectical care? Who knows? Still, one thing is clear. Finocchiaro has *reasons* for liking the negative thesis. Here are some of them. If, as Toulmin observes, most good arguments are neither valid nor inductively strong, and if, as a great many theorists aver, the flaws to be found in the Gang of Eighteen is that they are arguments that fail to be valid or inductively strong, how does it come about that in those few cases, invalidity and/or inductive weakness make for fallaciousness, but in the other cases—those that make up the majority of good reasoning—they don't? Or, to take another example, everyone agrees that affirming the consequent fails the standard of deductive validity, but what reason have we to think that when in the general case

and in actual practice people affirm the consequent they are even *aiming* at deductive validity? Why isn't the better interpretation that they are reasoning abductively? Similarly, everyone will agree that if someone unqualifiedly infers the presence of a causal connection on the strength of the temporal succession by one event of another, that would be a mistake. But how likely is this to be the correct interpretation of such reasoning? Isn't it a good deal more likely that the significance that such sequences has for us causally is that the before-after connection raises the *possibility* (rather than the fact) of a causal tie? So again, the interpretation constraint appears to have been violated. Ditto for the dialectical constraint. Consider a case in which one is inclined to press the charge of *post hoc, ergo, propter hoc*. How plausible is it that one would follow through with that accusation if he gave the slightest attention to what his accused is likely to say in reply? Will he say, "Why, 'after' is invariably a marker for 'caused by'"? Or will he say "I'm not saying 'caused by'; I'm saying '*maybe* caused by'"?

The twenty-three essays in this book represent a high point in a generation's research into the logic of reasoning and argument. None of the twenty-three has yet reached—to say nothing of exceeding—its sell-by date. They are as fresh today as they were when originally published. Taken together they make a major and multi-faceted contribution to logic.

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