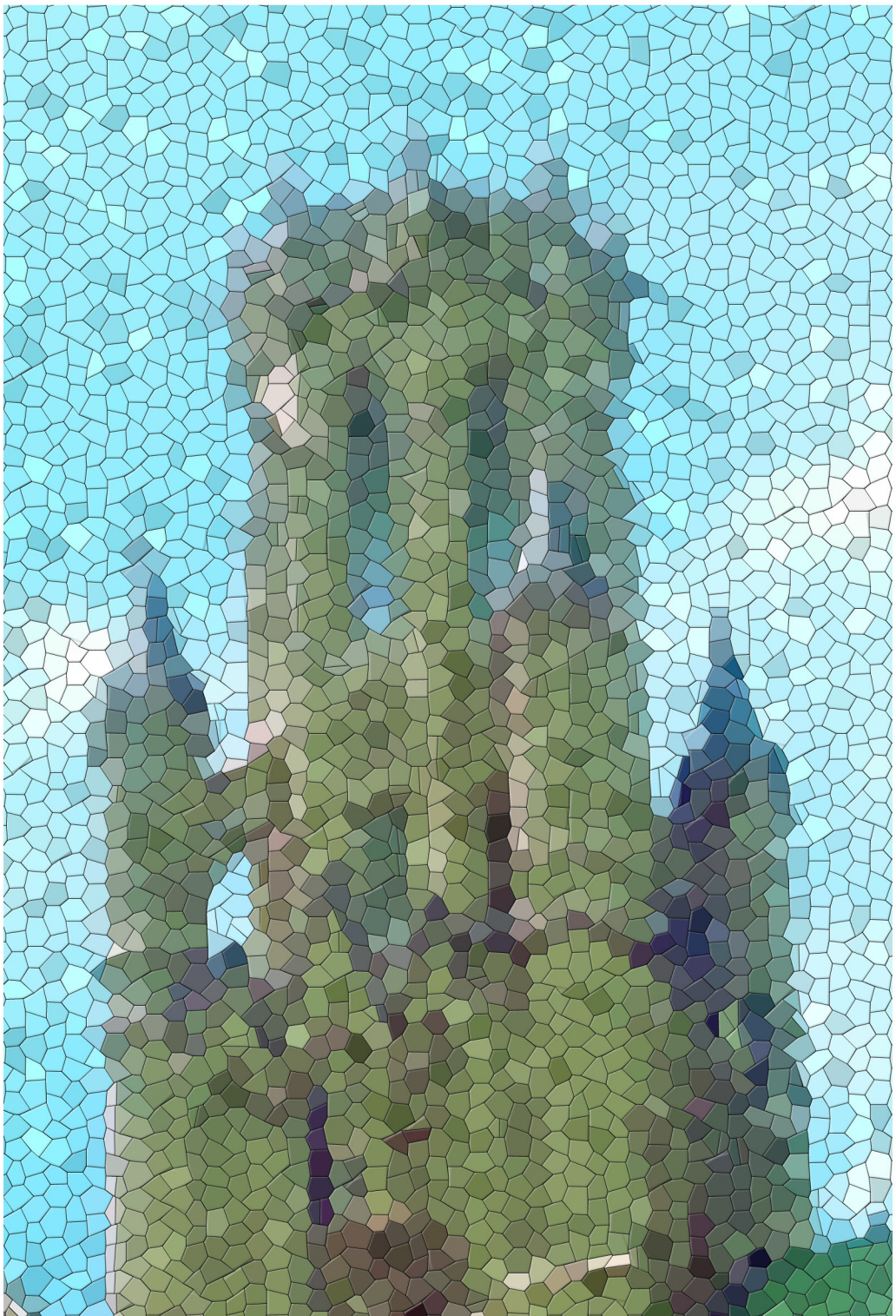
THE RISE OF INFORMAL LOGIC

Essays on Argumentation, Critical Thinking, Reasoning and Politics

Ralph H. Johnson



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and Informal Logic

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2. Ralph H. Johnson *The Rise of lnformal Logic*

The Rise of Informal Logic

Essays on Argumentation, Critical Thinking,

Reasoning and Politics

Ralph H. Johnson

With four chapters co-authored by J. Anthony Blair

Edited by John Hoaglund

with Prefaces by Trudy Govier,

Christopher Tindale & Leo Groarke

Note to the *Windsor Studies In Argumentation*

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The Rise of Informal Logic, by Ralph Johnson, has chapters co-authored by J. Anthony Blair, and prefaces by Trudy Govier, John Hoagland, and Leo Groarke & Christopher Tindale. The content of this edition of the book is the same as the 1996 Vale Press edition, with a number of minor typographical corrections.

The cover of this edition was designed by Dave Johnston for WSIA and is an image of the cupola of Dillon Hall, an iconic building at the University of Windsor. Dillon hall was one of the original buildings at the Assumption College before the university became public. We have included this as a cover image to recognize the University of Windsor as the centre of much of the work that gave birth to informal logic as a discipline.

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To my parents

Ralph and Marion

who first exposed me to the practice of
argumentation and gave me an appreciation
of the importance of logic.

Acknowledgements

When john Hoaglund first broached the idea of collecting many of my various papers on informal logic under one cover, I was flattered and non-plussed. Two thoughts pushed their way forward. The first was: "Not dead yet." But then I said to myself: "But neither was Quine." Then came the second: "Not Quine yet." I had no response to that one.

I am grateful to Vale Press for undertaking the publication of these papers which reflect 20 years of struggling to identify clearly both the nature of informal logic and its contribution to logic and to philosophy. When I look at some of the changes that have taken place in the teaching of logic at the college and university level, I am satisfied that informal logic has had an impact.

In addition to John Hoaglund, there are others I want to thank. First and foremost my colleague, Tony Blair, who is co-author of four of the papers reprinted here, with whom I have co-edited *Informal Logic* and *Informal Logic Newsletter*, and with whom I have been fortunate to have had an ongoing conversation about both the theory and practice of informal logic for more than 25 years. I want to thank a great many colleagues whom I have met and with whom I have had conversations that have both influenced my ideas and also had a direct impact on the writing of these papers, among them: Michael Scriven, Nicholas Rescher, Howard Kahane, John McPeck, John Woods, Douglas Walton, Jonathan Adler, Stephen Norris, Richard Paul, Perry Weddle, Trudy Govier, John Hoaglund, Maurice Finocchiaro, Robert Ennis, Matthew Libman, Else Barth, Frans van Eemeren, Rob Grootendorst, Erik Krabbe, Charles Willard, and Joe Wenzel. I apologize to those whose names have, at the moment, slipped my mind. I want especially to thank those who have supported the journal: Hans V. Hansen, Robert C. Pinto, and Mark Letteri.

Thank you to Trudy Govier for writing such an apt and gracious Preface.

A huge thank you to my wife, Maggie, for her patience and support over many years.

Ralph H. Johnson
Windsor
June 1996

Origins of the Essays

Chapter 1: “The Recent Development of Informal Logic “in J. Anthony Blair and Ralph H. Johnson, eds., Informal Logic: The First lnternational Symposium (Inverness, CA: Edgepress, 1980), pp. 3-28.

Chapter 2: “Informal Logic: Past and Present” in Ralph H. Johnson and J. Anthony Blair, eds., *New Essays in Informal Logic* (Windsor, Ontario: Informal Logic, 1994), pp. 1-19.

Chapter 3: “The New Logic Course: The State of the Art in Non-Formal Methods of Argument Analysis,” *Teaching Philosophy*, Vol. 4 (1984) pp. 123-43.

Chapter 4: “Logic Naturalized: Recovering a Tradition" in *Argumentation: Across the Lines of Discipline*, ed. by Frans H. van Eemeren, Rob Grootendorst, J. Anthony Blair, and Charles A. Willard (Dordrecht: Foris, 1987) pp. 47-56. (Studies of Argumentation in Pragmatics and Discourse Analyses.)

Chapter 5: “Argumentation as Dialectical,” *Argumentation*, Vol. 1 (1987), pp. 41-56.

Chapter 7: “Toulmin’s Bold Experiment,” Part I *Informal Logic Newsletter*, Vol. 3, No. 3 (1981), pp. 13-19.

Chapter 8: “Hamblin on the Standard Treatment,” *Philosophy and Rhetoric*, Vol. 23 (1991), pp. 153-67.

Chapter 9: “Acceptance is Not Enough: A Critique of Hamblin.” *Philosophy and Rhetoric*, Vol. 23 (1991), pp. 271-287.

Chapter 10: “Massey on Fallacy and Informal Logic: A Reply,” *Synthese*, Vol. 80 (1989), pp. 407-26.

Chapter 11: “Misconceptions of Informal Logic: A Reply to McPeck,” *Teaching Philosophy*, Vol. 14 (1991), pp. 55-52.

Chapter 12: “The Problem of Defining Critical Thinking” in *The Generalizability of Critical Thinking*, ed. by Stephen P. Norris (New York and London: Teachers College Press, 1992), pp. 38-53.

Chapter 13: “The Place of Argumentation in the Theory of Reasoning,” *Communication and Cognition*, Vol. 24 (1991), pp. 5-14.

Chapter 16: “Informal Logic and Politics in Logical and Political Culture,” ed. by E. M. Barth and E. C. W. Krabbe (Amsterdam: North Holland, 1992), pp. 133-44.

Chapters 6, 14, and 15 appear here in print for the first time.

Contents

Preface to the E-edition

We are pleased to release this edition of Ralph Johnson's *The Rise of Informal Logic* as Volume 2 in the series Windsor Studies in Argumentation. This edition is a reprint of the previous Vale Press edition with some typographical errors and other minor mistakes corrected. We want to thank Dave Johnston for converting the electronic files and helping generally with the publishing of our series, and Elisa Durante for her careful correcting of those electronic files to produce a polished, readable text.

We wanted to reissue this book as a volume in the WSIA series because it provides a key account of informal logic written by one of the founders of the field. Especially in light of the role that informal logic has come to play in argumentation theory, we believe it is important to make it widely available to anyone interested in argumentation as a subject of study.

We are grateful to Lilian Hoagland of Vale Press for permission to reproduce the initial edition which was published in paper, and to John Hoagland for the work he did to make the initial publication possible.

Leo Groarke, Trent University
Christopher Tindale, University of Windsor
Editors in Chief, Windsor Studies in Argumentation
July 1, 2014

Original Preface

In making available this collection of Ralph Johnson's papers, developed over an eighteen-year period, Vale Press has performed a valuable service. The name of Ralph Johnson is well-known to everyone interested in Informal Logic, and these essays will be interesting and useful to all who are exploring central issues in that field or in the related area of critical thinking. Ralph Johnson began teaching informal logic in 1971; *Logical Self-Defence*, his first book on the subject, was co-authored with his colleague Tony Blair and appeared in 1978. As the essays collected here so clearly reveal, Johnson has been active ever since.

With Tony Blair, Ralph Johnson began the *Informal Logic Newsletter* in 1978. It became an indispensable communication tool for those teaching and writing in the area. As one who was keenly interested in informal logic at a time when most other philosophers were not, I can remember how indispensable the newsletter seemed in those early years. I used to pounce on it when it arrived in the mail, and eagerly devour every morsel of food for thought. Later, when there was a need for a refereed journal in the area, Johnson and Blair worked hard to turn the Newsletter into a successful and respected journal, *Informal Logic*, which they continue to edit today. Johnson and Blair organized three international conferences on informal logic at the University of Windsor in 1978, 1983 and 1989. Through their work teaching, editing, organizing, speaking and writing, they have remained at the center of most of the key developments in informal logic over the past two decades. Two overview essays included here (Chapters One and Two) show how their position has given Johnson and Blair a broad perspective on many developments. Throughout, their own contributions have been pivotal.

It is not only through his diligent editorial and academic work that Ralph Johnson has contributed to informal logic and the theory of argument. In this area – more I suspect than in many others – personality and character count for much. Over the eighteen years that I have known Ralph Johnson, I have always found him to be genial, open-minded, good-natured, and respectful of others. Often witty and imaginative, his work is nevertheless careful and meticulous. Johnson's conscientious fairness and cheerful personality have not only contributed to the tone and credibility of his own work, they have been an inspiration and help to many others in the field. It would perhaps be premature to honor Ralph Johnson, because he is active and very much alive, and will contribute much more to informal logic and the theory of argument. But if one did wish to honor him, producing this book would be one good way to do it. John Hoaglund and Vale Press is to be congratulated for making its appearance possible.

There is much confusion about rationality and method today, not least in philosophy. Two prominent movements strongly opposite in their tendencies have a status and influence that is considerable and – it seems to me – undermining of practical rationality. At one end, there is the scientism of cognitive science; at the other, the anarchy of deconstruction. In cognitive science, we find a desire to understand human reasoning and discourse scientifically, through the development and testing of computer models. More scientistic than scientific, this approach is likely to produce pseudo-precision and

pseudo-rigor and unlikely to provide useful and sensible insights into standards for evaluating arguments. At the other extreme we find the confusing and trendy buzz of deconstruction and post-modernism, featuring skepticism about stable meaning, and denial that there are any rational standards at all. We can regard developments in the theory of argument as work towards sane and viable standards on the middle ground. In this way, the future of informal logic is important to preserving the practice of rational argumentation, which is threatened in so many ways in the contemporary world. Though prominent in the teaching of logic, informal logic and critical thinking are still marginalized within their home discipline of philosophy. In all of this, there is much at stake, and we neglect it at our peril.

Apart from the University of Windsor, home to Ralph Johnson and Tony Blair, the other major world center for middle-ground studies of rationality and argument is the University of Amsterdam. There Frans van Eemeren and Rob Grootendorst have worked with colleagues and students to found the pragma-dialectical school. According to Pragma-Dialectics, which has been energetically promulgated in numerous books and papers and at many conferences around the globe, arguments are rational discussions between two parties who begin by disagreeing on a thesis and proceed to carry out a discussion aiming to reach an agreement. In this model, fallacies are understood as violations of the rules for a proper discussion. The paradigmatic argumentative situation is that in which two parties are talking with each other. The discussion is oral; both parties are present; each can challenge the other. From actual conversations, arguments are written down and reconstructed for theoretical analysis; then rules are applied to them. In an ideal discussion, parties will follow the rules.

Unlike van Eemeren and Grootendorst, Johnson does not adopt an oral paradigm. He believes that for the analysis and evaluation of arguments, the written text should be the paradigm, the primary object. A written argument is more fixed and stable than an oral one. It is, notably, a more public object, being available to a greater number of people. Furthermore, greater care has typically gone into constructing a written argument – it is not simply "off the cuff." Similarly, responses to written arguments are more thorough and more carefully developed. If one develops a sound theory for written argument, one may go on to determine whether and how that theory may be adapted so as to apply to oral arguments.

As readers will soon discover, there is much of interest in these essays. Especially clear – and still pertinent due to the careless prominence still enjoyed by formal logic in some philosophical circles – is Johnson's discussion of formal deductive logic (FDL). Johnson argues convincingly that FDL provides doctrines about one kind of inference or implication (namely deductive) but sheds little light on the appropriate standards for evaluating arguments in everyday life or in academic disciplines. It has nothing to say about such key matters as the evaluation of premises, the clarification of meaning, the role of charity in interpretation, or the strength of non-deductive inferences.

In his essay on logic and politics (Chapter Sixteen) Johnson sets forth some basic conditions that he thinks must be met by any logic that will apply sensibly to political discourse. First, that logic must allow for good arguments both for and against the same claim. Second, that logic must evaluate arguments in such a way that there is a continuum from strong to weak (or good to bad, or cogent to non-cogent); the merit of an argument is not to be an all-or-nothing affair. Third, that logic must have standards which are "user-

friendly," at least to the extent that participants in political argument must be able to decide whether they are satisfied in a particular case. FDL fails on all counts. Somewhat provocatively, Johnson says that he doesn't think any normative theory can yet meet these conditions.

In politics and elsewhere, argumentation is a practice with manifest rationality. When we present and respond to arguments, we offer reasons and respond to criticisms based on reasons. We must try to operate rationally and must be aware that that is what we are trying to do. For the practice of argumentation to function as it does, "rationality must be done and be seen to be done." Arguments are inter-subjective, and an arguer must take his prospective audience into account. Arguments occur in public space: the practice of argumentation requires the support of a community. Someone who argues for a claim has an obligation to respond to criticisms of those arguments, even if he or she thinks that those criticisms are misguided.

Johnson believes that argument is dialectical; an argument is put forward in an attempt to rationally persuade other people that a claim is true. Such an attempt at persuasion must take into account the context in which those other people find themselves and the related beliefs they are likely to have. Johnson suggests interestingly that we can think of argument as having two tiers. The first tier is that of the premises and conclusion: an argument is a good one if its premises are relevant and sufficient to support its conclusion and if those premises are themselves adequate. Johnson moves away from the acceptability condition for premises, in the direction of truth, but admits that he has not settled on a criterion for premise adequacy. (In this connection, he develops some interesting criticisms of Hamblin in Chapters Eight and Nine.) The second tier concerns attention to alternate positions and objections. How well does the arguer deal with and defuse well-known objections to the position? Distinguish his or her position from other positions on the issue? Respond to those other positions? Handle questions about consequences? We usually evaluate arguments only in terms of the premises and conclusion. The second tier is a whole new level, one that is clearly relevant to our practice of manifest rationality. Johnson's two-tier analysis seems to be of great theoretical and practical value, and could usefully be imported into textbooks in the area.

These are just a few of the many fascinating and useful discussions to be found in this volume. There is no need to say more, because Ralph Johnson's work speaks so clearly for itself.

Trudy Govier
Calgary, Canada
May, 1996

Introduction

The prime motive for gathering Ralph H. Johnson's essays under one cover is their clear articulation of the goals, concerns and problems of the discipline of informal logic. To my knowledge all of the published articles, even of the 1980s, are still in print. But some are obtainable only by special request of a journal back issue. Their availability, even their existence, is not nearly widely enough known, and this volume is dedicated to remedying that disservice to those currently working in the field of informal logic, critical thinking, argumentation, and practical reasoning.

Three of these sixteen pieces appear here in print for the first time. The previously published pieces have appeared from 1980 to 1992 as chapters in collective works or as articles in journals, and these in turn published in Canada, USA, The Netherlands and Belgium. It is hoped that gathering this hitherto scattered material under one cover will contribute to a greater understanding of what informal logic is, and to an enhanced sense of the impact of Johnson's ideas. A discipline of informal logic might exist today without the writings of Johnson and his frequent co-author, J. Anthony Blair. But it would almost certainly be quite different from what it actually is.

The writings gathered here may be more nearly definitive of informal logic as a discipline than any other body of work available under a single cover. There are book-length treatments of important topics and problems in informal logic that manifest no small originality of thought, and are hence required reading for the serious informal logician. Govier (1987) and Freeman (1991) fall clearly into this category. But neither of these works is so explicitly concerned with the development and cultivation of informal logic as a discipline. Chief contender for this title would be the prodigious, wide-ranging, and high quality publications of Douglas Walton and John Woods, separately and jointly. But Woods and Walton, particularly in their earlier writing (e.g. the papers gathered in Woods and Walton 1989), seem considerably less concerned with developing informal logic as a separate discipline than with illuminating informal fallacies by using techniques and perspectives from formal, mathematical, and intuitionist logics.

There are three loosely different types of chapter in this work. One is concerned with staking out territory for informal logic as a discipline, surveying what has been done, and estimating what most needs to be done. The first two chapters, co-authored with J. Anthony Blair, fit this category neatly, and Chapter Three fits it loosely by spelling out the teaching concerns of informal logic.

The second is concerned with developing the theoretical underpinnings of informal logic, filling in the territory staked out with reasoned, constructive doctrine, and relating informal logic to collateral endeavors. Chapters Four through Six focus narrowly on developing these theoretical underpinnings, and Chapters Twelve through Fifteen relate informal logic mainly to recent writing on reasoning with some attention also to work in critical thinking.

The third type of chapter focuses on other writers, and is here again of two sorts. Either spelling out certain positions in informal logic by contrast with other informal logicians, as in the chapters on Toulmin and Hamblin, or defending informal logic as an

endeavor against those questioning its advisability or even possibility, as in the chapters on Massey and McPeck.

I will now introduce briefly one example of each of the three different kinds of chapter: One, Five, and Seven.

No other writer or writers have surveyed the literature and defined the field of informal logic as have Johnson and Blair. One measure of the effectiveness of this work is that when they first read Chapter One as a paper in 1978 and first published it in 1980, a discipline of informal logic did not exist. Today one does. Lest I be accused of post hoc, please note that I claim a relation of influence here, not one of cause-effect.

Informal logic is defined as "that area of logic . . . which attempts to formulate the principles and standards of logic . . . necessary for the evaluation of argumentation . . ." (p. 12 below). Johnson and Blair describe its main focus on argument in natural language and contrast this with the creation of artificial languages in formal logics. Such argument emerges from a dialectical process (e.g. debate of a substantial matter by two people of opposing viewpoints), and attention must be given to informal logical fallacies to develop its theory. The forms of argument we find in natural language are not captured by either the notions of valid form and sound argument of formal deductive logics, or the criteria for inductive strength. Hence if we want students in logic courses to deal effectively with arguments in natural language, teaching them formal logic is not a promising route.

Their survey of theoretical informal logic literature 1953-1978 divides into one for monographs and journal articles. Only three monographs turn up as significant, a disappointing number for informal logic enthusiasts, but each of these (Toulmin 1958; Perelman and Olbrechts-Tyteca 1958; Hamblin 1970) is of such significance as to be foundational literature for the field. The search for journal articles yields strong evidence of a trend. Only nine articles are found in the first 15 years of the period; in the subsequent ten years there are 58 articles, the majority appearing 1974-1978. Important areas of research interest turn out to be the theory of fallacy and the theory of argument.

Their sample of textbooks 1946-1978 is also suggestive of a trend. Whereas the survey of journal articles may well contain everything they could find in English, we are not told how the sample textbooks were selected. From 1946-1969 only five counted as informal logic texts; from 1970-1978 there are 14 in this category.

A signal merit of this Johnson-Blair survey is that we find not only a call for a logic more suited to everyday uses but also an analysis of the sample texts revealing common features indicating what in detail might be needed for this task. In revealing contrast to formal logic texts, informal logic texts typically lift actual arguments from popular print media to serve as examples for analysis and in exercises for students to analyze. Such actual arguments are aptly characterized by Johnson and Blair as "rambling, confused, digressive, prolix discussions which are briar patches for the logician" (p. 21 below). Innovations in the treatment of the informal fallacies are also encountered. Lists of fallacies are rearranged according to new categories, some old fallacies are dropped and new ones added.

What Johnson and Blair find most exciting in the informal logic textbooks is that they attempt to deal with extended arguments, those the length of a newspaper or magazine editorial, or longer. Writers differ on whether one should attempt to lay bare structural detail or instead judge the argument on the basis of a summary. In some cases a missing conclusion must be supplied, in others missing premises. When the latter, the

premises must be formulated strong enough to serve for the task at hand, but not so strong as to commit the arguer to statements vulnerable to attack.

Johnson and Blair close this survey and analysis with a provocative, detailed list of problems and issues in informal logic.

Work of this sort establishes a need for theory in informal logic, and Chapter Five exemplifies those in which Johnson and Blair address this need. If the focus on argument in natural language distinguishes informal from formal logic, it is argument as dialectical that is characteristic of the Johnson-Blair version of informal logic from others. As dialectical, argument grows out of a process that must be taken into account, a process involving a questioner and respondent. Argument is purposive, and it begins when a proposition is challenged. Argument is contrasted with inference and implication, which are taken to be the main concern of formal deductive logic, a discipline that does not get a high approval rating from these authors. Where argument is dialectical, inference is monolectical (no other viewpoints need be taken into account). The purpose of argument is taken as rational persuasion, and while inference resembles argument in being purposive, it has a quite different purpose: to attain knowledge. Inference moves along one track whereas argument is more heterogeneous.

From these important differences between argument and inference, the authors infer that the standards of argument will differ from those of inference. This brings us to their conception of argument criticism, where arguments are tested for their strength. Arguments are measured by the acceptability of their premises and the adequacy of the premise-conclusion connection. The key idea here is that of a community of model interlocutors, knowledgeable people familiar with the process of argumentation. Blair and Johnson explicitly reject the claim of traditional logicians that premises must be true, and indeed much argument in natural language proceeds with premises more easily fitted in the gray area if true and false are the poles of light and darkness. Yet since the effective arguer is obliged to find premises his audience will accept, our authors arrive at model interlocutors to avoid the relativism of an audience that might accept even patently false premises.

Model interlocutors are legitimate participants in the process of argumentation. They are knowledgeable about the claims in question, reflective in that they question, challenge, and probe, and open-minded in being less biased and more willing to change an opinion. Further details of this community are then worked out, and the criterion for an acceptable premise is that members of this community raise no important questions about it. On connection-adequacy, Blair and Johnson indicate that premises must be both relevant and provide sufficient support to the conclusion. So the arguer must meet three kinds of objection: that the premises are not acceptable, that they are irrelevant, and that they insufficiently support the conclusion. The authors make the strong claim that an argument is incomplete if common, known objections to the premises or conclusion are not considered, and it is again our model interlocutors who decide what needs considering.

Chapter Ten on Toulmin, in which Johnson examines not the monograph Toulmin (1958) cited earlier but the textbook Toulmin (1979), exemplifies those on other writers. Johnson is warmly sympathetic to Toulmin's goals. He indicates how Toulmin not only rejects the geometrical model of formal deductive logic but also provides an alternative in the jurisprudential model, where the assessment of argument as practiced in courts of law (in a sense a dialectical process) is carried out. But the differences on how these goals are

to be achieved are considerable. Toulmin's methods may not have received so sympathetic yet searching a critique by an informal logician until Freeman (1991). Freeman seems actually to have taught courses with the Toulmin (1979) text, whereas Johnson at the time of his critical review tells us he had not.

Toulmin's basic scheme of argument involves a claim, data serving as evidence for it, and a warrant that licenses an inference from the data to the claim. What are the facts may be debated, a warrant that is challenged may need back-up, the modality of the argument is stated explicitly, and a rebuttal of the argument would have to be responded to. Johnson generally accepts this scheme, though he does find serious problems with it. Confining premises to statements of fact seems unduly restrictive, unless Toulmin has an extraordinarily elastic conception of fact. Much of the argument we deal with involves normative claims and value judgments, and it isn't clear how Toulmin's scheme would capture this type of material, or whether it would at all. Scrutinizing Toulmin's examples, Johnson finds some premises that are difficult to classify as factual statements.

More troublesome yet is the warrant. Toulmin gives ten somewhat different descriptions of warrant. Examining his examples, Johnson concludes that warrants are either general statements or rules which tend to make the arguments deductive. One problem with this is that in some cases it may saddle the arguer with a considerably stronger claim than he needs to establish his conclusion. In some cases it seems that particular statements would serve as well as general. For Toulmin, warrants are field-dependent, so that what counts as a warrant in medicine might not count at all in the field of law. Johnson expresses uncertainty about what counts as a field. And how do we deal with arguments where the evidence for the claim straddles fields? Applying this scheme to Toulmin's problems, Johnson notes that for a given problem the warrant may be formulated in different ways. So we face the difficulty of deciding what description it fits under as well as deciding what field it belongs to. Finally Johnson observes that it would be cumbersome to apply this method to longer or extended arguments.

This is a brief sampling of what follows. There is enormously provocative material here, not only for logicians, formal and informal, but also for those working in related ares in philosophy, argumentation, speech communications, pragmatics, rhetoric, and linguistics. Teachers of courses in critical thikning and practical reasoning will also encounter here many ideas to stimulate a probing and deeper understanding of their work.

John Hoaglund
Newport News
June 1996

I. Informal Logic

Chapter One

The Recent Development of Informal Logic

The purpose of this chapter is to contribute to an overview of the recent development of informal logic. Part 1 is an introduction consisting of three brief sections: (A) the informal logic point of view; (B) a short historical background; and (C) a statement of our approach. Part 2 is a survey of the developments in informal logic from 1953 to 1978. In Part 3, after summarizing these developments, we attempt to formulate the central issues and problems with which informal logic must deal.

1. Introduction

A. Point of View

The label "informal logic" means different things to different people. To many it refers to the lists of informal fallacies and the various descriptions and classifications of these fallacies – the tradition which began with Aristotle's *On Sophistical Refutations* and which has most recently been examined critically by C. L. Hamblin in his monograph, *Fallacies* (1970). To others it designates the subject matter of a certain sort of introductory logic course (or a segment of such a course) which employs various non-formal techniques (often but not always including the study of fallacies) to try to teach elementary reasoning skills. To still others, especially recently, it has come to mark off a field of logical investigation distinct from formal deductive logic. No doubt there are other ways in which informal logic is used. Indeed, we expect some would consider the label a contradiction in terms, for since they understand by logic the study of formal systems, informal logic would be a logical impossibility.

In the face of such disparate conceptions of informal logic, how is this field to be defined? There are at least two ways in which an area of inquiry might be characterized: in terms of the approach or methodology employed in it, and in terms of the subject matter. We think informal logic is best specified in terms of its subject matter, for there is no single approach shared by everyone whose work may be identified as belonging to it. At the same time we must warn that there is no uncontroversial way to demarcate precisely the subject matter of informal logic. The reason for this is clear enough. The field is simply too undeveloped at this stage for a clear definition to be possible. The kinds of questions being raised, the kinds of problems being addressed, represent a diverse range of issues. Nevertheless, when they are set down side by side there emerges a coherence – admittedly loose – that can be seen to constitute a broad but distinctive area of inquiry.

We submit the following list of attitudes, drawn from the general literature, as characterizing the informal logic point of view.

1. A focus on the actual natural language arguments used in public discourse, clothed in their native ambiguity, vagueness and incompleteness.

2. A commitment to the study of argumentation as a dialectical process.

3. Serious doubt about whether deductive logic and the standard inductive logic approaches are sufficient to model all, or even the major, forms of legitimate argument.

4. A dissatisfaction with formal logic as the vehicle for teaching skill in argument evaluation and argument formation.

5. A conviction that there are standards, norms, or advice for argument evaluation that is at once logical – not purely rhetorical or domain-specific – and at the same time not captured by the categories of deductive validity, soundness and inductive strength.

6. A desire to provide a complete theory of reasoning that goes beyond formal deductive and inductive logic.

7. An interest in expanding the study of reasoning to include, besides argumentation even broadly conceived, such activities as critical thinking, problem-solving and decision-making.

8. A conviction that the informal fallacies constitute a legitimate basis for logical investigation. This conviction is often accompanied by an acknowledgement of the lack of any coherent theoretical account of the fallacies, and a commitment to provide such an account. There is, further, a growing belief that the theory of argument will be inadequate until it provides a framework for interpreting the informal fallacies.

9. A focus on the actual component skills of critical thinking, and hence an attempt to formulate a clear and operational concept of critical thinking or reasoning.

10. An orientation that treats the teaching of reasoning skills as a key part of education, integral to comprehensive language skills and to preparation of youth for responsible social and political roles.

11. A belief that theoretical clarification of reasoning and logical criticism in non-formal terms has direct implications for such other branches of philosophy as epistemology, ethics and the philosophy of language.

12. An interest in all types of discursive persuasion, coupled with an interest in mapping the lines between the different types and the overlapping that occurs among them.

B. Background

Logic might be said to be that discipline which articulates and refines the standards (and their theoretical foundation) of right and wrong in matters of reasoning and argumentation. Broadly considered, the history of logic can be divided into two segments: the Aristotelian and the modern.

Aristotle is considered the founder of logic. His achievements are legion, most notably the first attempt at a conscious articulation of the standards of logic. In *Prior Analytics*, Aristotle developed the theory of syllogistic inference. In *Posterior Analytics*, he presented a theory of demonstration – reasoning designed to yield certainty. In *Topics*, he presented a theory of probable reasoning, while in *De Sophisticis Elenchis* Aristotle introduced what could be termed the theory of fallacy. The development of logic for the next 2,000 years shows the influence of his prodigious talent and labor.

It has been stated that no substantial development occurs in logic from Aristotle until the time of Frege. While this broad statement should be challenged since it overlooks the important work of Mill, Boole, and others, it is serviceable insofar as it highlights the fact that Frege has come to be regarded as the founder of modern logic. His contributions to logic – most of them not recognized during his lifetime – are legion also. He presents, in his *Begriffsschrift* (1879), the first rigorous formulation of non-syllogistic logics: propositional logic and quantification theory. Frege also introduced the explicit distinction between axioms and rules of inference, thereby laying the foundation for the formal logistic systems of modern and contemporary logic.

There is no point in rehearsing here all the developments in logic since 1879. What does require emphasis is simply this. When one speaks of the spectacular development of logic over this period, one is quite clearly referring to formal logic and its many relatives: semantics, pragmatics, metalogic, etc. In this progress, informal logic has not, so far, been a participant. Thus it is possible to say now about informal logic, the very same thing that might have been said about formal logic before Frege's 1879 work: there has not been any significant development since Aristotle.

Perhaps this statement seems bold. But we direct attention to the fact that Kneale and Kneale's landmark history, *The Development of Logic*, contains not a single mention of informal logic and scarcely any treatment of topics related to it. We are not suggesting that there is a *lacuna* in the Kneales' work. On the contrary, the point is that the conspicuous absence of treatment of informal logic in their work testifies to its undeveloped state.

Since 1955, however, there have been signs that the situation is changing and that informal logic has begun to take its place alongside formal logic as an independent branch of logic. We have more to say about these signs in Part 2.

C. Methodology

Before we outline the developments, we ought to say a few words about our methodology. If one is to survey recent developments in informal logic, it is clearly necessary to utilize some conception of what informal logic is. Simply put, our conception is that informal logic is that area of logic (not yet fully canonized as a discipline) which attempts to formulate the principles and standards of logic which are necessary for the

evaluation of argumentation. We take this to include not only the development of procedures and techniques for appraising arguments but also the articulation of supporting theory.[1]

Using this as our working definition of informal logic, we reviewed the literature from 1955 to 1978. Our survey is divided into three categories: (A) monographs; (B) journal articles; and (C) textbooks.[2]

2. Recent Developments

Since 1970 something new has been emerging in logic. To call it a *Geist* is overblown, but suggestive. To call it an outlook is safe, but not forceful enough. The development we refer to is characterized by two interrelated features. First, there has been a turn in the direction of actual (i.e., real-life, ordinary, everyday) arguments in their native habitat of public discourse and persuasion, together with an attempt to deal with the problems that occur as a result of that focus. Second, there has been a growing disenchantment with the capacity of formal logic to provide standards of good reasoning that illuminate the argumentation of ordinary discourse. The result has been a number of initiatives to develop methods of identifying, analyzing and evaluating reasoning, which do not rely primarily on the instruments or nomenclature of formal logic. True, these initiatives have been sporadic, dispersed, and tentative. Yet they have also included some decisive forward thrusts. We believe, in short, that informal logic has begun to come into its own as an area of theoretical inquiry.

The important developments in this regard have occurred in the journal articles and in the burgeoning number of textbooks. We shall have a close look at the literature in these two categories after looking first, and rather more briefly, at monographs.

A. Monographs

In our judgment, only three monographs of significance to informal logic have appeared between 1955 and 1978: Toulmin's *The Uses of Argument*, Perelman and Olbrechts-Tyteca's *La Nouvelle Rhetorique*, both of which came out in 1958 (although the latter was not translated into English, under the title, *The New Rhetoric*, until 1969) and Hamblin's *Fallacies*, published in 1970. None of these monographs has had the impact it deserves in the philosophical world at large, nor even within the discipline of logic.

Those who have been working in informal logic will nod in recognition at what Perelman and Olbrechts-Tyteca were talking about when they wrote these words:

> Although it would scarcely occur to anyone to deny that the power of deliberation and argumentation is a distinctive sign of a reasonable being, the study of the methods of proof used to secure adherence has been completely neglected by logicians and epistemologists for the last three centuries. (1969:1)
>
> Logic underwent a brilliant development during the last century when, abandoning the old formulas, it set out to analyze the methods of proof effectively used by mathematicians. Modern formal logic became, in this way, the study of the methods of demonstration used in

> the mathematical sciences . . . Logicians owe it to themselves to complete the theory of demonstration obtained in this way by a theory of argumentation. (1969:10)

Clear though this clarion call was, it has been heard almost exclusively by rhetoricians – possibly because *The New Rhetoric* dwells more on the presentation of arguments than on their analysis or criticism.

Hamblin's and Toulmin's works have fared only slightly better. Toulmin's remarks about the problems he was going to consider echo those of Perelman and Olbrechts-Tyteca:

> . . . they are problems which arise with special force not within the science of logic, but only when one withdraws oneself for a moment from the technical refinements of the subject and inquires what bearing the science and its discoveries have on anything outside itself – how they apply in practice, and what connections they have with the canons and methods we use when, in everyday life, we actually assess the soundness, strength and conclusiveness of arguments . . .
> . . . the science of logic has throughout its history tended to develop in a direction leading away from these issues, away from practical questions about the manner in which we have occasion to handle and criticize arguments in different fields, and towards a condition of complete autonomy, in which logic becomes a theoretical study on its own, as free from all immediate practical concerns as is some branch of pure mathematics. (1958:1-2)

Toulmin proposes that rational assessment of arguments should be conceived on the model of judicial practice. One should look to see whether argumentation conforms to certain basic rules of procedure rather than to the model of geometric demonstrations. He argues that the component functions in argumentation are more plentiful and varied than merely the advancing of premises for conclusions, and urges further distinctions "between claims, data, warrants, modal qualifiers, conditions of rebuttal, statements about the applicability or inapplicability of warrants, and others" (142). In the same spirit, Toulmin contrasts the idealized logic of symbolic logic with the "working" logic he thinks is needed for the analysis of everyday argumentation. Finally, he calls for a rapprochement between logic and epistemology; a broadening of logic to treat "arguments in all fields as of equal interest and property," and so compare and contrast "their structures without any suggestion that arguments in one field are 'superior' to those in another"; and a reintroduction of historical and even empirical considerations into logic. Despite these very interesting suggestions, if Toulmin's monograph has had much influence, it has gone largely unacknowledged.[3]

Hamblin's *Fallacies* has received the most widespread recognition of the three monographs. It is, for example, *de rigeur* these days to acknowledge his criticisms of the fallacy approach.[4] Where *Fallacies* has had its clearest influence is in the work found in recent journal articles, for it is there that the only work of a theoretical nature is being done on fallacies, and it was Hamblin who drew attention to the great need for such work. His monograph provides the only extensive history of writing about fallacies (an excellent one at that); it underscores the neglect that fallacies have been subjected to in logic texts, and by extension draws attention to the neglect of the whole of informal logic; and it offers a theory of fallacy of great interest, particularly because it builds from a concept of argument as used *in practice*.

B. Journal articles

We begin with two prefatory notes. First, the underdevelopment of informal logic may be inferred from the fact that neither of the standard indices of journal articles (*The Philosophers Index* and *Social Sciences and Humanities Index*) contains a separate heading or entry for informal logic. Second, because informal logic lacks a clearly established identity, it has no standard nomenclature. Hence, for example, the term "practical reasoning" in the title of an article sometimes signifies that it is about informal logic ("practical reasoning" being one of informal logic's many alter egos), but often, of course, it indicates that the article belongs within ethics. So our survey of the journal literature was plagued by an identity problem, and no doubt we have erred by including articles that ought not to have been included, and by failing to include some which should have been.

1. *Quantity.* Our survey provides evidence that interest in informal logic has escalated especially since 1968. In the fifteen years prior to 1968, there were only 9 articles that seemed pertinent to informal logic. Ten years later, we count some 58 articles about aspects of informal logic, most of which (40) have been published from 1974 to 1977.

2. *Distribution*. Although articles on informal logic have been widely distributed in the philosophical journals, there is a noticeable concentration of them in *Philosophy and Rhetoric*. From 1971-77, 53 articles appeared, of which 16 (almost a third) appeared in that journal. This finding is not surprising, for there existed no journal of informal logic (where such a concentration would be expected), and *Philosophy and Rhetoric* came as close to being such a journal as any.

3. *Principal Researchers*. The most prolific contributors have been Woods and Walton. Since they began to publish work in this area in 1972, they have jointly published 12 articles – over a quarter of the total production (47) from 1972 to 1977.

4. *Principal Areas of Research*. Journal articles have focused on either of two areas: (a) the theory of fallacy, and (b) the theory of argument. Let us look at each of these in turn.

(a) By theory of fallacy, we mean the attempt to formulate with clarity and rigor the conditions under which a particular fallacy occurs, along with related questions about the nature and/or existence and/or classification of various kinds of fallacy. It seems clear that research in this area was stimulated by Hamblin's work, and to a lesser degree by that of Perelman and Olbrechts-Tyteca. The charter for such research has been well formulated by Woods and Walton:

> We neglect the study of fallacies at our peril, for it is just in these areas that rational criteria, however inexact and tentative, are sorely needed as an aid to the adjudication of actual, everyday argumentation. While the traditional treatments of the fallacies are too unsystematic to be useful as an effective device in argumentation, their abandonment leaves a gap that no one (as yet) quite knows how to fill. Hamblin suggests that we are in the position of the medieval logicians before the 12th century. We have lost the doctrine of fallacy and need to rediscover it. (1977a:17f.)

In their own work, Woods and Walton have attempted to fill this gap in the theory of fallacy by providing more rigorous treatments of these informal fallacies: *argumentum ad verecundiam* (1974a); *ad baculum* (1976a); *ad hominem* (1977a; 1977b); *post hoc, ergo propter hoc* (1977d); and *petitio principii* (1975a; 1975b; 1977c).

On the whole, the informal fallacy that has most captivated the interest of researchers is *petitio principii* – or *begging the question*. The eleven articles devoted to this fallacy range widely in focus and approach.[5] Is there such a fallacy or not? Robinson (1971) argues that there is not, although most other writers take the position that there is, but that its nature is not clear. A number of different approaches have been explored, summaries of which can be found in Woods and Walton (1975b) and in Sanford (1977).

After *begging the question*, the fallacy that has been most discussed is *ad hominem*. The eight articles on that fallacy again display diverse approaches,[6] including the question of whether or not such a fallacy exists, raised by Gerber (1974). Most writers take it that there is such a fallacy but are not in agreement about its nature and types. Excellent discussions of the various positions are to be found in Woods and Walton (1977a), and in Barth and Martens (1977).

The other informal fallacies treated in journal articles are: *composition and division* (Bar-Hillel 1964; Cole 1965; Rowe 1962; Broyles 1975); *the appeal to force* (Van de Vate 1975a; 1975b; Yoos 1975); the *argument from authority* (Woods and Walton 1974a; Young 1974); *many questions* (Fair 1975); the *appeal to ignorance* (Robinson 1971a); and *arguments from analogy* (Sacksteder 1974).

While research on the theory of fallacy has begun to fill the gap mentioned by Woods and Walton, a great deal of work remains. Of no informal fallacy can it be claimed that we now possess a widely accepted theoretical account, and many of the important informal fallacies have not yet been investigated in a theoretical way at all: e.g., *straw man*, and *two wrongs*. Indeed, by any standard, one of the most important informal fallacies is *irrelevant reason* ("*non sequitur*") yet an adequate non-formal analysis of the concept of relevance has yet to be carried out. The attempts of Anderson and Belnap[7] (and their successors) to capture the notion of relevance in a formal system have not been entirely successful. Whether informal logic can fare better in this task, only time and further research will tell. Again, the concept of adequate or sufficient evidence, as it relates to everyday arguments, requires conceptual underpinning. And under what conditions is an undefended premise in an argument logically offensive? Vagueness is inherent in much mundane argumentation, but the concept of vagueness requires careful analysis if it is to be employed in effective logical criticism.[8]

In sum, although some interesting beginnings have been made in research on the theory of fallacy, this area of informal logic is still in its infancy.

(b) By "the theory of argument" – the second focus of research in the journals – we mean the attempt to formulate a clear notion of the nature of argument which is not beholden to formal logical or proof-theoretic models, and to develop principles of criticism and reasoning which come closer to shedding light on natural argumentation than do those of formal logic. Again, research on this topic shows the impact of Hamblin's work, and here we quote from Woods and Walton's critical discussion of Hamblin in which they call for:

> . . . the eventual emergence of a concept of argument more adequate to the domain of natural argumentation and of informal fallacies than the purely syntactic proof theoretic accounts that, by themselves, are appropriate only to the domain of rigorous mathematical demonstration. (1972:104)

Woods and Walton have themselves contributed to the development of such a concept in the above article, and also in 1976b and 1977e.

Other articles worth mentioning are these: Apostel attempts to show that assertion logic (a branch of modal logic) is "urgently needed for the description of discussion and argumentation" (1971:94) and claims further that "it is possible to build a bridge between descriptive and normative aspects of the theory of controversy by means of the concept of competent audience" (107) – which concept he tries to elucidate.[9] Brockreide (1972) examines the implications of the practice of argumentation by the introduction of a sexual model. Thus, some arguers are, according to the analogy, rapists; some, seducers, and some are lovers. Such an analogy may be a useful pedagogical device for explaining the nature and purposes of argumentation. Iseminger (1974) argues that there is a plausible sense of the term successful argument in which success consists in more than validity, but that the additional condition is not and does not entail the truth of the premises, and so success does not amount to soundness. Can Iseminger's concept of successful argument be developed as an alternative to soundness for the informal assessment of arguments? Can this concept be used to bypass the inductive-deductive hegemony on argumentation which informal logic must perhaps resist?[10] Kruger presents a new system of classfication of controversial statements, claiming that "the student of argumentation will become acquainted with concepts which, though seldom discussed in the textbooks of his discipline, are the *sine qua non* of effective argumentation" (19751138). Is the notion of effective argument another alternative to soundness as an ideal for mundane arguments? Finally, Peppinghaus (1976) has devised an interesting set of principles (the autonomy of the addressee, active openness, the golden rule of argumentation) which introduces an entirely different classification of logical miscues.

Philosophers' contributions to the theory of argument have in a number of articles focused on the special case of philosophical argumentation. Schouls (1969) argues that philosophical positions involve presuppositions in such fashion that philosophical communication is possible only among philosophers who share one another's presuppositions – a claim disputed vigorously by King-Farlow (1971) and Kodish (1971). Johnstone (1970) holds that there is an honorific sense of *argumentum ad hominem* and that indeed most philosophical arguments must take this form. Brown takes the position that there are no onus-assigning propositions of any sort, "only onus-assigning contexts or situations in which the disputants find themselves" (1970:81). Facione discusses the role of counter-exampling in philosophical arguments and shows that there are four levels of philosophical debate to which the use of counter-examples may lead (1976:529). There are then a number of promising lines of investigation for the development of a theory of philosophical argumentation.

To summarize, we would say that the theory of argument is not much further along than the theory of fallacy. The notions of effective argument, successful argument, inadmissible argument are all of them inchoate, but may be seen as initiatives in the

direction of exploring a notion of argument which is closer to the domain of natural argumentation, and which may outrun the notions of validity and soundness.[11]

(c) The other articles included in our survey are not easily categorized. Certainly, one of the factors crucial to any successful enterprise in the area of mundane argument is the notion of context, which is underscored in Anderson and Mortensen (1967), and Corliss (1972). Another important topic in the appraisal of natural arguments is that of finding and formulating missing premises or assumptions. This question is treated by Lee (1973), who argues that assumption-seeking is a type of hypothetic inference from a given belief to its proximate grounding. Hypothetic inference, which is based on supposability, is not reducible to deduction (necessity) or induction (probability). If correct, Lee's position may further erode the grip of the deductive/inductive distinction, since assumption-seeking (we will argue shortly) is crucial to the success of the informal logic enterprise. Both Griffith (1975) and Scriven (1970) make strong cases for the limitations of formal logic. Scriven, for example, says:

> In difficult areas like practical logic, the trained philosophers are rarely to be found, preferring to build their own ivory towers. What is an assumption? No logic text (of the seventy or so I have on my shelves) has an answer that can survive five minutes' search of the stockpile of potential counter-examples. Why bother to distinguish inductive arguments from deductive when virtually every practical argument can be reconstructed with equal plausibility in either form? Can one comprehensively criticize an argument in itself without considering alternative arguments for the same conclusion and alternative conclusions from the same premises? A dozen or more questions arise as one begins the serious study of effective reasoning – all bypassed by the supreme irrelevance of formal logic, which has never been shown to have either content or skill carry-over to the practical and probably not even to the philosophical domain. (1970:902)

Woods and Walton (1974b) outline a number of ways in which informal logic connects with other disciplines.

In summary: The research done in the journal articles from 1968 to 1977, and particularly from 1974 to 1977, show an upsurge of interest in informal logic, with the theory of fallacy and the theory of argument as twin foci. But, as we shall see, other important areas in need of research have yet to put in an appearance. And while the research that has been done marks a good beginning toward filling the gaps in theory mentioned at the start, a clear direction shaping research efforts and a clear application to the realm of practice have been missing.

C. Textbooks

Turning to textbooks, we find that from 1955 to 1978 the changes have been dramatic. Borrowing terminology from the language of computer talk, we can divide the introductory logic textbooks that appeared after the Second World War into two "generations". The first generation texts by and large belong to either of two paradigms, typified by Beardsley's *Practical Logic* (1950), on the one hand, and by Copi's *Introduction to Logic* (1955), on the other. First generation texts continue to appear on the market

today, but by the beginning of the 1970s a second generation of introductory texts had begun to appear. These were anticipated by Little, Wilson and Moore's *Applied Logic* (1955) and Fearnside and Holther's *Fallacy: The Counterfeit of Argument* (1959). However, this second wave of texts, devoted to informal logic as their main focus, began in earnest with Michalos's *Improving Your Reasoning* (1970), Capaldi's *The Art of Deception* (1973), and especially Kahane's *Logic and Contemporary Rhetoric* (1971). There followed, and continues to issue forth, a spate of textbooks in the area of informal logic that defy simple categorization and provide the strongest evidence for our claim that a new outlook is abroad.

The developments represented by the second generation (informal logic) texts can best be appreciated in contrast to the first generation paradigms from which they are such a departure. Therefore we shall begin our discussion of the significance of recent informal logic texts by sketching the main features of the Copi and Beardsley first generation paradigms.

Copi's *Introduction to Logic* exhibits the classic features of what we shall call the "global approach." Its three parts are intended to touch on all the main areas of logic. Part One treats language, and includes chapters on the uses of language, informal fallacies, and definition. Part Two treats deduction, with chapters on categorical propositions, categorical syllogisms, arguments in ordinary language, symbolic logic, evaluating extended arguments and propositional functions. Part Three treats induction, with chapters on analogy and probable inference, causal connections, and science and hypothesis. Copi was not the first to use this pattern (see Max Black's *Critical Thinking* 1946 and H. L. Searles's *Logic and Scientific Method*s 1948), but by virtue of the sheer number of editions (in its 5th edition by 1978) and printings, Copi's text is the best known, and so it stands as the preeminent example of this approach to logic and to informal logic.

This structure is repeated almost identically time and time again in introductory logic textbooks (see, for example Carney and Scheer 1964; Kilgore 1968; Baum 1975; Manicas and Kruger 1976; and Blumberg 1976). Other texts come close to the paradigm, but omit one or another of the parts and have slightly different emphases. For instance, Schipper and Schuh (1959) drops Part III and devotes more time to informal fallacies; Barker (1965) drops Part I; Terrell (1967) drops Part I. Or, similar ground is covered, with slight variations, a different order. Witness here Michalos (1969) and Kahane (1969). Of course each textbook writer is likely to maintain that his or her text is unique – and no doubt in some respect each is. Nevertheless, the global paradigm dominates the first generation post-war introductory logic texts.

From the point of view of informal logic, two features of the global paradigm are especially significant. The first is the assumption that the rules of deductive logic and the principles of induction and scientific method are central and essential to the logical appraisal of all argumentation, for all purposes. Arguments, according to this approach, are simply either deductive or inductive; bad arguments are invalid or unsound. The second striking feature of this paradigm is its perfunctory treatment of informal fallacies which Hamblin has dubbed the "standard treatment" castigated:

> as debased, worn out and dogmatic a treatment as could be imagined – incredibly tradition-bound, yet lacking in logic and in historical sense alike, and almost without connection to anything else in modern Logic at all (1970: 12)

Combined with the neglect of fallacies, and the focus on formal models of argument is an inattention to the possibility that the appraisal of arguments in their live, everyday settings may require alternative or supplementary canons of evaluation. We are not saying that these writers would deny this possibility. The point is that their interests and sympathies in these texts lie elsewhere than informal logic.

The second paradigm exhibited in first generation textbooks we call the "critical thinking" approach. It looks like the real ancestor of the texts that emerged in the 1970s. Beardsley's *Practical Logic* (1950), for instance, covers a great deal of the same ground as does Scriven's *Reasoning* (1976), written 26 years later. The critical thinking approach combines several features. Its focus is on practical skills in clear thinking that are applicable directly to ones functioning as a reasoning person in the various roles of everyday life. The tools of logic are employed as an adjunct to this objective and therefore are not presented as objects of study in and for themselves. More attention is devoted to meaning and natural language than to formal systems. Finally, the practical application of the skills taught is acknowledged by making the invented examples realistic and including in the exercises some actual arguments.

Although a marked similarity exists between such early post-war critical thinking texts as Beardsley's and the more recent informal logic texts of the 1970s, we are inclined to regard the former as belonging to the earlier generation. Beardsley was still quite satisfied with sentential and predicate logic as useful tools for the analysis and evaluation of natural arguments, whereas more recent texts are either uneasy or unhappy with that assumption. Also, his invented examples have the order and elegance of a well-turned mind, and his borrowed examples come primarily from the sort of well-ordered reasoning typical of academic literature. More recent texts turn to the problems of grappling with the sort of poorly organized argumentation typical of popular contexts. Finally, second generation texts appear not to be written in a conscious return to the earlier critical thinking tradition, but instead as a conscious reaction against the hegemony of formal logic represented by the global paradigm.

Let us then turn to a closer examination of the second-generation or "New Wave" textbooks (as we shall sometimes refer to them).

We have examined 53 introductory texts published since World War II that devote at least some space to informal logic, including a few that may not have been aimed directly at the textbook market when they were first published. The textbooks are identifiable by prefatory notes to students and/or teachers, exercises, or other internal evidence. These are texts written for a first course in logic, reasoning or critical thinking. We allowed informal logic to cover discussions of language (such as emotive terms, or ambiguity), of definition, of informal fallacies, of polls and statistics, and generally of any fare related to argument or reasoning outside syllogistic or formal deductive logic, or inductive reasoning and scientific method.

Of the total of 53, 25 textbooks came out between 1946 and our arbitrary cut-off date, 1969, and 28 appeared from 1970 to 1978.

What the figures show, when combined with our interpretive categories, is that 16 of the 25[12] pre-1970 texts followed the global paradigm exemplified by Copi (1953), while five[13] fitted the critical thinking paradigm typified by Beardsley (1950). Each of the four remaining is *sui generis*.[14] In sum, there are twice the number of texts in the global

paradigm as in the critical thinking paradigm, or some variant of it, in the first 24 years of our sample.

The picture changed dramatically from 1970 to 1978. Of 28 texts, only 11 belonged to the global paradigm,[15] and a number of them incorporate features of the New Wave texts. Another 14 belong exclusively to informal logic – three being devoted primarily to fallacies,[16] and 11 including other nonformal materials instead, or as well.[17] The remaining three are attempts to combine the new informal approach with material on deductive and inductive logic.[18] So if our sample is any indication, there certainly has been a turn in the direction of informal logic in introductory textbooks in the last decade.

What is striking about the recent textbooks dealing primarily or exclusively with informal logic is not just their numbers, but much more interestingly, the new turns they have been giving to their subject matter. When we speak of a "New Wave" in informal logic, we have these changes in content and treatment primarily in mind. We have counted five significant developments. Together with the work in the journals, these are the bases for our claim that something important is happening in informal logic today.

1. *Working with "natural" arguments*. What could be more obvious than to put the analytic and evaluative tools of informal logic – for example, those of the fallacy approach – to work on arguments that have actually been used to try to persuade people, the sorts of arguments the student will encounter outside the classroom? Surprisingly, the analysis of such examples is rare, or nonexistent, in the first-generation texts that devote space to informal logic. Almost without exception, the examples are inventions by the author (or borrowed from other texts). Moreover, the examples are usually artificial. That is, they are simplified, clear, unambiguous; their premise-conclusion structure is evident; each statement plays a role in the argument. When natural arguments[19] were used as illustrations or for exercise examples, they tended to originate from philosophical, other scholarly, or literary, sources.

The examples found in the New Wave texts tend to differ in three ways. More and more are natural arguments. When invented, their artificiality is minimal: their subject matter is topical, and their literary form is closer to the way ordinary people talk and write. And their source is the everyday public realm – newspapers and magazines, popular books rather than literary, scholarly or philosophical texts.

This small change in the kind of examples used makes an enormous difference in both the theory and practice of informal logic. For such examples are rambling, confused, digressive, prolix discursions which are briar patches for the logician who would trace their logical flow and assess their strengths and weaknesses.

The primary result of dealing with actual examples is that the writer is forced to abandon preconceptions and face the actual data to become more empirical in that sense. Any lack of fit between traditional categories (principles, distinctions) and everyday reasoning becomes dramatically evident when one tries to apply these categories to actual examples. Scriven has noted a case in point;

> The use of any calculus to handle problems that surface in reality (in natural language) involves . . . encoding the original problem into its formalized representation. . . . [T]he problem with formal logic is that the encoding step . . . is just about as debatable (in

> anything but trivial arguments where there's no need to use the calculus) as the assessment of the original argument. (1976:xv)

What has happened in recent work, as a result of attention to actual examples, is what Toulmin called for back in 1958: informal logic has become less *a priori* and more pragmatic.

Working with such actual, everyday persuasive discourse, the logician faces new problems. What is the argument? How is it to be extracted from its surrounding rhetoric? What verbal or contextual clues may be used, and how? What principles of interpretation apply? How is the argument to be displayed in order to exhibit its logical structure fairly and perspicuously? What standards of evaluation are then to be applied? How are the criteria of evaluation to be determined? In their practice – working with rather immediate pedagogical goals before them – recent informal logic textbook writers have struggled with and offered answers to these and other questions. The answers have not been uniform. Indeed, the questions have not all been perceived by everyone, nor perceived in the same ways. What is needed now, in fact, is a survey of the various practical solutions to these problems that have been developed and an attempt to fashion the necessary theoretical underpinnings.

We cannot leave this point without giving credit to Kahane for his major contribution to the breakthrough into everyday argumentation. As far as we know he was the first writer to use everyday examples almost without exception throughout the body of his text as well as in the exercises. Since the example of *Logic and Contemporary Rhetoric* (Kahane 1971), there has been no excuse for manufacturing silly, artificial examples, or for fashioning exercises to fit neatly into a writer's *a priori* principles of evaluation.

2. *The treatment of fallacies*. We have quoted Hamblin's now-famous castigation of The Standard Treatment of fallacies, which applies particularly to first generation texts taking the global approach. Hamblin shows that there has been no one single tradition in the treatment of fallacies. Although it was part of the conventional wisdom predating his book that there is no given principle for the individuation or classification of fallacies, first generation texts tended to classify informal fallacies either according to Aristotle's division (into language-dependent or material fallacies and other-than-language-dependent, sometimes called "psychological" fallacies) or some variant of Aristotle's division; or else they classified fallacies as deductive or inductive. These texts stocked their informal logic inventories with fallacies that had become established fare by the 19th century. In other words past practice continued of its own inertia.

That has changed in New Wave texts. There is innovation in the selections of fallacies treated, in their classification, and in the formulation of "new" fallacies. These texts tend to use fallacies as tools for the teaching of practical skills in critical thinking rather than to discuss them out of a sense of an obligation to expose students to the traditions of the past.

The primary criterion of fallacy classification in recent texts seems to be pedagogical. Michalos (1970) is an interesting example of the change. Michalos classifies fallacies as formal and informal, and divides the latter into those occurring when the argument is deductively or inductively valid but has false premises, and those with irrelevant premises. But after this nod to conventional wisdom, he turns to his declared

objective, that of helping students improve their reasoning, and proceeds to group his fallacies on entirely different, and heuristic, grounds: question-begging fallacies, fallacies of pseudo-authority, confusion, political fallacies, and so on. Fearnside and Holther (1959) is similarly transitional. It uses the major Aristotelian divisions, but then introduces eight sub-groupings, under headings such as "stirring up prejudice," "rationalization and lip service" and "diversions" that are clearly pedagogical in inspiration.

Examples of pedagogically-motivated classifications abound. Capaldi (1975) groups fallacies according to whether they are more likely to occur when one is presenting a case, or attacking an opponent, or defending a case. Then, because of their separate importance, he devotes individual groupings to political propaganda and cause and effect reasoning. Kahane's (1971) fallacy groups – "fallacious because invalid" and "fallacious even if valid" – cut across the deductive/inductive distinction, and ignore the Aristotelian division. He also includes a chapter on statistical fallacies. Engel (1976) distinguishes fallacies of ambiguity, fallacies of presumption and fallacies of relevance; and within the second category he subdivides further: fallacies overlooking the facts, evading the facts and distorting the facts. Ehninger (1974) classifies into three different groups: fallacies of language, of thought, and of tone and manner. Johnson and Blair (1977) divide their list into five sections: fallacies of diversion, of impersonation, of sleight of hand, of prejudgment and of intimidation. Fogelin (1978) uses just two categories: clarity and relevance.

The actual lists of fallacies have changed in at least five ways.

(a) By and large, Latin labels have been translated in English, or replaced with more descriptive English labels. This is a minor point, but it is a symptom of the release from tradition and the new practical preoccupations.

(b) Distinctions – particularly the one between equivocation, amphiboly and accent – have been collapsed. The point seems not to be to cover all the theoretically possible subdivisions, but to grasp the central idea that can illuminate concrete assessment of arguments.

(c) A number of fallacies found on the first-generation lists have been dropped. For example, one sees less and less of "appeal to force" or "accident"; and "composition" and "division" are rarely found in New Wave texts. Why? In some cases the excised fallacies belonged to a now-defunct tradition of debate. Others seem to have been restricted to academic or artificial contexts.

(d) Quite often the standard treatment of first generation texts has been expanded. "False cause," for example, can be the occasion for an extended discussion of ordinary causal reasoning. "Complex question" is the subject of entire sections on the use of assumptions in everyday reasoning. "Appeal to authority" has given rise to discussions of knowledge and belief, and of kinds and qualifications of authorities.

(e) Finally, completely new fallacies have been added as writers have canvassed real arguments about current issues that appeal to present day beliefs and attitudes, and have pondered the responsibilities of arguer and audience as reflective citizens or consumers.

We think here of Kahane's (1917) "tokenism," "unknown fact," "suppressed evidence" and statistical fallacies; or of Weddle's (1978) "stereotyping" and "half truth."

Finally, we should note that fallacies are no longer always assembled in a single chapter given over to their brief exposition, except in texts within the global paradigm. Now several chapters, even entire books, are devoted to their exposition and exemplification. Or else references to fallacies are scattered throughout the text, invoked when and as the writer deems it useful. The guiding principle seems to be that the fallacy approach should be used as an adjunct to teaching reasoning skills, and incorporated into a textbook on informal logic on that basis.

From a theoretical point of view, of course, the treatment of fallacies in New Wave textbooks seems nothing short of chaotic. Definitions of the concept of fallacy vary, classificatory schemes abound, the treatments of individual fallacies have little uniformity, and there seems to be no real principle of collection.[20]

The recent treatments of fallacies might, so far as the theory of fallacy goes, be considered a shambles. However – and this is the present point – there have been some extremely striking practical innovations in these texts. What is needed is the generation of theory out of practice. And the writers who have been doing the theoretical work in the journals should take the New Wave textbook handling of fallacies seriously, to the point of considering it raw material or data that cannot be ignored.

3. *Consideration of "full" or "extended" arguments*. For the purpose of exemplifying fallacies, writers belonging to the earlier tradition customarily relied on short passages which, as we have been pointing out, they usually had to invent. More recently, as a consequence of turning their attention to natural arguments, informal logicians have been forced to reckon with fully-developed or complete arguments. In everyday situations, people usually try to give as much support for the claims they are advancing as they can, or as they think appropriate on the occasion, and this usually means developing a fairly full case for those claims, not just single, one- or two-step inferences. In trying to develop textbooks that would help their students to interact with such extended arguments, New Wave writers have themselves had to grapple with the practical questions of how to analyze and assess them. The results have been uneven, but on the whole we think they have been the most exciting and significant of the New Wave text developments.

The strategies recommended to students differ from text to text (see Angell 1964; Kahane 1971; Thomas 1973; Ehninger 1974; Scriven 1976; Johnson and Blair 1977; and Fogelin 1978, to mention some we have canvassed), but they invariably cover two major tasks: (a) the interpretation (including the extraction and structuring) of the argument, and (b) the evaluation of the argument. In dealing with the first of these, New Wave writers have had to answer three interrelated questions. First, what belongs and what does not belong to the argument? Second, what should be added – supplied by the critic to complete the argument? Third, what is the structure of the argument? What is the organization of its logical flow from support to conclusion? How can this structure be most perspicuously displayed? An answer to any one of these affects the answers to the other two. The textbook writers have been trying to come up with practical guidelines for their students in each of these areas. The second major task, that of criticism, is similarly complex, and dealing with it has been the occasion for additional advice in the textbooks.

The remainder of this section undertakes to describe in greater detail the results of grappling with these two questions, under four headings; (a) the conceptualization of argument structures, (b) the handling of missing premises and conclusions (c,) the ethics of interpretation and evaluation, and (d) the criteria of evaluation.

(a) *The conceptualization of argument structures.* New Wave authors have been trying to understand and set forth the different kinds of premise-conclusion relationships that are found in natural argumentation. The issue here is not the logical character of the reasoning or inferences; i.e., whether they are deductive or inductive.[21] Instead, what people are trying to map are the various kinds of arrangement possible in the way that premises support a conclusion. For example, Thomas (1973), following Beardsley (1950), sorts arguments into four types: an argument is convergent if several independent reasons support the conclusion; it is linked if the reasons work together to support the conclusion; it is divergent when one premise supports several conclusions; and a serial argument is one that contains a statement which is both a conclusion and a reason for a further conclusion. Ehninger (1974) has adopted Toulmin's evidence-warrant-claim method of analyzing structure.[22] Scriven (1976) has pointed out that an arguer may acknowledge deficiencies in his case, evidence that weakens the support provided by other premises, and so suggests a tree structure marking positive and negative reasons. Most writers have noted that premises themselves can be supported in extended arguments, and that indeed there often exist several levels of support. While many different methods of mapping the structure of arguments have been explored, questions remain. Should the structure show distinctions between major and ancillary support for a conclusion? Can all argument structures be catalogued? What is the most perspicuous way to display the structure of an argument? Is it pedagogically useful to expose structure in such complicated ways as some do (i.e., Johnson and Blair's 1977 standardizing procedure)? Or would it be more effective to follow Kahane (1971) and simply summarize the argument in outline form? Or to follow Fogelin (1978) and simply note the argumentative functions (such as hedging terms, slanting, discounting, etc.)?

Once listed in this way, these questions strike one as perfectly straightforward. An outsider might register some surprise that more progress hasn't been made in providing answers and that there is not a wider range of more thoroughly worked-out alternatives. What needs to be pointed out, however, is that these questions were not even *asked* until recently. New Wave texts deserve credit not for having provided the necessary conceptualizations, but merely for having recognized the need for them.

(b) *Supplying missing premises and conclusions.* Natural arguments are usually incomplete. Arguers make leaps from supporting reasons to claims based on them that would be plausible only if certain other assertions, which they do not mention, were also accepted. Or they list reasons which, given all the contextual signals, are supposed to lead one to accept some claim, but they don't state that claim.

Anyone who has tried to evaluate natural arguments will know that these missing premises and conclusions must be formulated, for the strength or weakness of the argument very often depends on what they are. Anyone who has tried to formulate them or theorized about how to do this will know what a tricky job that can be. Should a missing premise be trivial, or lend substance to the argument? If the latter, how strong, or weak,

should it be? On what grounds is one to answer these questions? The astounding thing is that the intricacies of formulating missing premises have just not been recognized and addressed.[23]

If recognizing a question is halfway to its answer, we would give half credit to some (but only some) of the New Wave informal logic texts for answering the questions about missing premises. Some who have discussed argument analysis have not even acknowledged the whole issue of unexpressed premises (e.g., Munson 1976 and Fogelin 1978). Others have recognized the phenomenon, but gone no further (e.g., Thomas 1973 and Ehninger 1974); or else have offered only brief suggestions about how to formulate these premises (e.g., Annis 1974; Johnson and Blair 1977). We have found only two texts that give detailed consideration to the problem of identifying missing premises and conclusions: Angell's *Reasoning and Logic* (1964) and Scriven's *Reasoning* (1976).[24] On the other hand, what both Angell and Scriven have to say is very good, and we would like to replay it briefly.

Although the two writers are in essential agreement, Scriven does not appear to have known of Angell's earlier treatment. Between them, they differentiate the missing premise that needs to be formulated for the purpose of argument assessment from, on the one hand, unstated reasons that may underlie various parts of the argument, but that lie "outside" the argument, and, on the other hand, assumptions that are stated within the argument, but are identified as assumptions. Scriven characterizes the quarry as "the further assumptions that are required, in many cases, to make an inference satisfactory" (1976: 81); Angell speaks of "reasons . . . omitted from an argument . . . (that are) essential to its structure as it is stated" (1964: 384). Both note that the skill in finding missing premises calls for imagination (i.e., that there is no algorithm), and both offer practical guiding principles. Here is Angell:

> Though the methods proposed do involve certain assumptions and may require the exercise of imagination to some degree, the assumptions can be justified rationally and the imagination required is a disciplined one guided by certain principles and logical clues. (1964: 386)

Here is Scriven:

> Exactly how does one correctly formulate the missing premises of an argument? Here again, we find that imagination and originality are often required in this basic part of the critical process. (1976:85)

Scriven goes on to state and defend three criteria that formulations of missing premises should meet. He and Angell agree about the first two of these – first, that "assumptions have to be strong enough to make the argument sound" and second, "that they should be no stronger than they have to be." They disagree about the third: Scriven argues that "you also want to try to relate the assumptions as you formulate them to what the arguer would be likely to know or would believe to be true" (1976: 85), whereas Angell argues, "we do not care whether the person who first presented the argument had these reasons in mind or not" (1964: 387). Also, Scriven takes a stronger line against trivial missing premises. Angell allows that it is "sometimes satisfactory, simply to form the missing premises by

putting the reason *p* and the conclusion *q* into a conditional 'If *p* then *q*"" but asserts that in many cases where this is done the results fail to have much plausibility (388). Scriven is firmer. He says: "It is entirely unhelpful to point out that a particular argument 'assumes' that its premises imply its conclusion" (163). And he provides a useful discussion of how to distinguish between what he calls "significant" and "insignificant" assumptions, together with supporting arguments (162-166). Our contention is that any further thinking about missing premises or assumptions ought to begin with a careful look at Angell and Scriven.

(c) *The ethics of argument presentation, interpretation and criticism*. Everyday arguments are digressive, rhetorical, repetitive, ill-organized, incomplete, and multi-functional. Trying to provide guides for analyzing and evaluating such arguments leads very quickly to such questions as: "Is it fair to treat that comment as part of the argument?" or "Ought the missing premise be framed to commit the arguer to so strong an assumption?" or "Should the arguer be castigated for every slip, no matter how minor?" In other words, we have to have an ethics of argument analysis and assessment.

Here again is a point which, once observed, seems to be obvious enough, but which surprisingly was not even noted until New Wave texts began to appear. In this case, too, the encounter with full-sized, living arguments seems to have functioned as the catalyst. What has emerged in answer to these questions is something that has been widely dubbed The Principle of Charity – the basic idea behind it being that one should give the arguer the benefit of the doubt.

Various principles of charity have been proposed—notably by Thomas (1973), Baum (1975), and Scriven (1976); and the principle has been used, though not named, elsewhere (e.g., Johnson and Blair 1977). We cannot state *the* Principle of Charity, not just because it comes in different formulations, but also because we have found it to function in at least four different areas. First, it is used in locating arguments. Thomas uses it this way when he says, "if a passage contains no inference indicators or other explicit signs of reasoning and the only possible argument(s) you can locate in it would involve obviously bad reasoning, then categorize the discourse as *non*argument"(9). Second, having decided that an argument is present, the principle is used to identify the content of the argument, e.g., by Scriven: "Be sure that wherever there's a vague sentence . . . you cross it out . . . and rewrite it in a more precise and perhaps more charitable form" (76f.). Third, the principle is used in formulating missing premises. Here is Baum's statement of it in this context: "When supplying missing premise or conclusion statements . . . one should adhere to the *Principle of Charity*, which stipulates that one should supply statements that make the argument as good as possible" (135). Fourth, charity is recommended in criticizing arguments once they are located, identified and filled out. Here is Scriven on this point:

> What the Principle of Charity does mean is that "taking cheap shots" is something we shouldn't waste much time doing. Other words that come in from ordinary language about this point are nit-picking and attacking (or setting up) a straw man. These terms all refer to poor argument analysis, either to making irrelevant criticisms or to making criticisms that are not relevant to the main thrust of the argument or that are unfair in some other way. (1976: 71ff.)

Although we have not given a full account of these writers' various principles of charity or their rationale in support of them, it is clear that questions abound. What is the rationale for a Principle of Charity? Is its justification in one context transferrable to another? How is it (or are they) to be formulated? Are there exceptions? Are there other, conflicting principles of interpretation or criticism?

The Principle of Charity is not the only ethical principle that has been raised in connection with argumentation. Looking at it from the side of the person who gives the argument instead of the critic, Flew has proposed that arguers too have ethical obligations. He says: "To the extent that I make claims to knowledge without ensuring that I am indeed in a position to know, I must prejudice my claims both to sincerity and ingenuousness" (1977: 115). So, if Flew is right, to advance reasons in support of a conclusion is to take responsibility for the acceptability of those reasons.

Once again (it is becoming a refrain) New Wave authors have raised the issues and made plausible suggestions about their resolution, and opened up a topic for fruitful theoretical analysis.

(d) *Standards of evaluation*. The final spinoff from examining full-sized arguments in their original settings is a new perspective on argument criticism. Most texts still talk simply in terms of validity, soundness or fallaciousness. Arguments are conceived as good – or bad. Such unqualified judgments are too simplistic to be significant or interesting verdicts about most everyday argumentation. Reflective response to reasoning is fuller, more detailed, and balanced, like this: "There is something to what you are saying but you should not rely so heavily on that one report." Or "You have missed one of the strongest reasons for your position." Or again: "You do indulge in some mudslinging, but it is certainly hard to challenge your two central points."

There are signs in some of the New Wave texts of the evolution of more perceptive canons of criticism. Munson, for example, suggests that the adequacy of reasons is a matter of degree; he introduces the critical category of the *fairness* of the premises; and he sees the critical process as leaving room for reply and revision (1976: 187-97). At least by implication, Thomas's "weak," "moderate," and "strong" classification of argument strength invites corresponding degrees in critical assessment (1973: 69-79). Johnson and Blair have tried to introduce the ideas of degrees of critical strength and the opportunity for revision into the fallacy approach. For example, they rank fallacy charges from strong (irrelevance), through intermediate (insufficient evidence), to weak (disputable premises) (1977: 29). The most perceptive and imaginative suggestions about argument evaluation have been made by Scriven. After formulating The Principle of Charity as it applies to argument criticism ("no cheap shots"), he breaks the assessment process into three steps (1976: 43ff). First, criticize inferences and the premises – and in doing so, discriminate between the main conclusions and their support, and focus on the key weaknesses. Second consider other relevant arguments, in order to put the strengths and weaknesses of the argument under scrutiny into perspective. Third, go back over your criticisms, considering their potency, and give the argument an overall evaluation. Try to judge, all things considered, how good or bad the argument is. After reflecting on such a rich critical strategy, how restrictive the tradition of working exclusively with validity, soundness and fallaciousness seems.

So far we have noted that New Wave textbooks have been noteworthy in three respects: (1) in the use of actual examples, (2) in the treatment of fallacies and (3) in the development of strategies for the analysis and evaluation of extended arguments. The dominant themes are the growing independence from *a priori* theory and the pedagogical focus. These two themes are exhibited in two additional features of these textbooks which we should mention before leaving this section.

4. *The partial abandonment of the deductive-inductive dichotomy.* Any break from this orthodox doctrine is far from complete; nor is there so much a denial of the distinction as there is a rejection of its usefulness for the appraisal of arguments in most public discourse.

Kahane was one of the first to play down the distinction. He observes:

> . . . this standard division is not very useful . . . it is rare in daily life to claim deductive certitude for the conclusion of an argument. (1976 2e:32)

Thomas went a step further in proposing that validity is a matter of degree, with deductive arguments only at the highest end of the spectrum having the truth of their conclusions 100 percent guaranteed. He claimed, further:

> Empirical study of undoctored examples of reasoning in natural language seems clearly to show that in different arguments, the reasons lend different degrees of support to the conclusion. (1973:72f.)

Scriven takes a similar position. In a section where he contrasts an inference relying on the laws of arithmetic and one made probable by the premises, he states:

> That [the latter] type of argument is sometimes called an “inductive" argument, by contrast with the “deductive" one given earlier. . . . The difference is not really very important from the point of view of practical reasoning because exactly the same choices are open to the respondent. The opponent must rebut either the premises or the chain of reasoning that takes us from those premises to the suggested conclusion. (1976:33f.)

The point seems to be widely accepted in New Wave texts: analysis and criticism of argumentation that is worthwhile from a practical point of view cannot be viewed any longer as a minor subdivision of formal logic, and indeed it is time that it be incorporated as (at the very least) a semi-autonomous enterprise.

5. *The widening scope of informal logic*. The scope of informal logic has been widening over the past decade, and neglect of the deductive-inductive paradigm is just one sign of movement out from under the wing of formal logic. Here are some others.

First, there have been certain shifts in emphasis even within the traditional territory of language, fallacies and definition. We have already discussed changes in the treatment of informal fallacies. In addition, recent work in the philosophy of language has begun to filter into informal logic textbooks. Fogelin (1978) is a striking example, with its sections on speech acts, performatives, conversational implication and levels of language. The standard

chapter on definition has been reduced in size or its components have been scattered throughout the texts to places where they become strictly pertinent to argument analysis (see Ehninger 1974 and Scriven 1976). Moreover, the entire approach to definition has acquired a flexibility well illustrated by an excerpt from Weddle:

> lf the important thing [about definition is] getting the meaning across – that is, teaching the term's correct use – then any consideration of form and method should be judged by its ability to achieve that end. Thus, a satisfactory definition might take the form of . . . a Bronx cheer (as in defining "Bronx cheer"). (1978:62)

The second point is that the traditional boundaries of informal logic have been extended. The analysis and evaluation of extended arguments is one sort of extension. The techniques of argument extraction and display, and of evaluation, while requiring attention to meaning and logical error, take them onto new ground. On another front, the recognition that it is necessary to have full and accurate information in order to assess everyday reasoning has led writers to appraise various sources of information. Many have included sections on polling and statistics. Gordon (1966) was a pioneer in combining a treatment of fallacies with a factual and critical study of news media. Kahane (1971) went further and discussed advertising and textbooks as well as news. Johnson and Blair (1977) follow Kahane. Thomas (1973) takes up decision-making. Fogelin (1978) devotes close to half of his text to specimens of arguments in the domain of public policy, law, morality, theology, science and philosophy. In short, informal logic is increasingly seen as the tool for the critical analysis of reasoning, and its raw material, *wherever* they occur.

Summary of Part 2

Few monographs have been written on informal logic. While especially those of Toulmin, Perelman/Olbrechts-Tyteca and Hamblin are in our view important works, they have had little influence upon work appearing in journals and textbooks – with the exception that Hamblin is widely mentioned.

The period 1968-1977 especially has seen marked growth in numbers of journal articles and textbooks in informal logic. The work in the journals has mainly been theoretical. The textbooks have been at the introductory level, and concerned with the practicalities of teaching useful skills to non-specialists. The textbooks – particularly those of the New Wave – have introduced innovations which have theoretical implications, but those theoretical issues have not been explored. In sum, there has been no significant interplay between the theoretical work of the journals and the innovations in practice found in the textbooks.

3. Conclusion

This chapter is an interpretive report on the developments in informal logic from 1968 to 1977. The gist of our findings is that informal logic was in a developing stage. Not yet an independent discipline within logic with a clear and distinct identity, it nonetheless

had shown enough growth and development to warrant attention in its own right. This growth had occurred in spurts, without theoretical coherence. Those working in informal logic had an increasing confidence that this was a separate field, even while they tried on different topics to try to ascertain its parameters. The theoretical accomplishments in the field were spotty, and for this and other reasons informal logic had yet to attain respectability in the eyes of philosophers and logicians, especially those who knew little about it.

What was clearly needed in this emerging field was a sense of definition and of direction so long as the search for these did not distract from or paralyze ongoing research. We suggested the following as conditions of further development:

1. Informal logic needed to develop an even better understanding of what had already been achieved. This chapter was intended as a beginning in this regard.

2. Informal logic needed to develop a clearer conception of its own identity and nature, of its component parts, of its scope and its relationship to cognate inquiries in logic (semantics, pragmatics, formal logic) and philosophy (epistemology and the philosophy of language), and to other disciplines (rhetoric, communication studies, debate, etc.).

3. Informal logic needed to generate an overview of the major issues which confronted it and the major problems that required solution – along with the methods available to handle them. (See list below)

4. Finally, informal logic needed to recognize and deal with the obstacles to further growth. There seemed to us to be two principal obstacles:

a) the absence of any journal of informal logic;[25]

b) the gulf between theory and practice.

Certainly a journal devoted explicitly to the aims and to the advancement of informal logic would help to cure the gulf between theory and practice.

We end this chapter, then, simply with an unclassified and partial list of problems and issues in informal logic.

1. *The theory of logical criticism*:

   What is the purpose of logical criticism? Can an overall theory of logical criticism be developed? What are the criteria to be invoked in logical criticism?

2. *The theory of argument*:

   What is the nature of argument? How is it related to reasoning? Is there a value to developing a typology of arguments? What are the standards that arguments (particularly mundane arguments) should meet? What principles should be decisive here?

3. *The theory of fallacy*:

   What is the nature of fallacy? Can the conditions of individual fallacies be identified? Can fallacies be individuated? How should fallacies be classified? Is there a correct principle of fallacy classification? Should the notion of fallacy be junked?

4. *The fallacy approach vs. the critical thinking approach*:

What are the merits, and drawbacks, of each? Should/can they be integrated? Is this a pedagogical question only?

5. *The viability of the inductive/deductive dichotomy*:

   Are mundane arguments one or the other? Are the validity/soundness criteria of evaluation inappropriate or outmoded? If so, what should replace them; effective argument? Successful argument? Plausible argument? Persuasive argument? What?

6. *The ethics of argumentation and logical criticism*;

   Can principles be formulated that assign the responsibilities of give-and-take in argumentation? What is (or are) the Principle(s) of Charity? What is their best formulation? What is their justification? Are there other, perhaps more conflicting, ethical principles that apply?

7. *The problem of assumptions and missing premises:*

   What exactly is a missing premise? What different kinds of assumptions can be distinguished in argumentation? Which are significant for argument evaluation? How are missing premises to be identified and formulated? Are these just practical and pedagogical questions, or theoretical as well?

8. *The problem of context:*

   How does the context of argumentation affect its meaning and interpretation? What are the significant components of that context? Is a theory of contextual or pragmatic implication required for logical criticism?

9. *Methods of extracting arguments from context:*

   How do principles of evaluation apply here? Is some theory of argument or reasoning necessarily presupposed? To what extent are the issues pedagogical and to what extent theoretical? Are there alternative but equally viable methods of extracting argument?

10. *Methods of displaying arguments:*

    Is there any evidence that some kinds of display (or presentation of structure) are more efficacious than others? What criteria can be invoked to adjudicate between various methods?

11. *The problem of pedagogy:*

    What alternative pedagogies are there for teaching informal logic? Are there criteria for adjudicating between them?

12. *The nature, division and scope of informal logic:*

What is informal logic? What are its component parts or subdivisions? What should be included in a map or outline of its geography? On what basis if any can it be determined that the criticism of news media and advertising lie within the scope of informal logic? Is decision-making an area within the scope of informal logic? Are there other as yet unspecified topics that lie within its scope?

13. *The relationship of informal logic to other inquiries:*

    How is informal logic related to formal logic, semantics, pragmatics? How is informal logic related to other areas of philosophy, such as epistemology and the philosophy of language? How is informal logic related to other disciplines as rhetoric, the theory of debate, communication studies, the psychology of reasoning?

Notes

1. This is hardly a precise definition. However, it is our judgment that an attempt to produce a tight specification of informal logic, at this early point in its development, would be premature. Readers wanting amplification about the domain of informal logic should consult Blair and Johnson (1980:ix f.).

2. We have restricted attention to work done by philosophers and logicians in the English-speaking world. This means that we have not made any attempt to explore the connections between informal logic and other cognate disciplines such as rhetoric, the tradition of debate, pragmatics, semantics, etc.

3. Angell (1964) lists *The Uses of Argument* in a chapter-end bibliography, and Ehninger (1974)—a professor of rhetoric by the way—employs Toulmin's evidence-warrant-claim distinctions for structuring arguments.

4. See for example, Copi (1953; 1978 5e:87).

5. Johnson (1967), Williams (1968), Hoffman (1971), Robinson (1971b), Sanford (1972; 1977), Woods and Walton (1975a; 1975b; 1977c), Barker (1976), Biro (1977).

6. Reipe (1966), Johnstone (1970), Finocchiaro (1974), Gerber (1974), (1977), Barth and Martens (1977), Woods and Walton (1977a; 1977b).

7. See, for example, their "The Pure Calculus of Entailment," *Journal of Symbolic Logic*, 21: 19-52 (March, 1962).

8. See Machina (1976) for an attempt to elucidate this concept using the machinery of formal logic.

9. In our judgment, the payoff and degree of illumination which can be expected by using the conceptual apparatus of informal logic remains an open question. Here we can refer to the words of Bar-Hillel: "I challenge anybody here to show me a serious piece of argumentation in natural language that has been successfully evaluated as to its validity with the help of formal logic. . . The customary applications are often less careless, rough and unprincipled, or rely on reformulations of the original linguistic entities under discussion into different ones. . . through processes which are again mostly unprincipled and ill understood." (Bar-Hillel 1969:15). Is it fair to state that Bar-Hillel's challenge has, thus far, not been met?

10. For more on the inductive-deductive dichotomy, see p 29f.

11. The problems of showing invalidity are discussed in Massey (1975).

12. Black (1946), Searles (1948), Werkmeister (1948), Hepp (1949), Copi (1953), Schnipper and Schuh (1959), Salmon (1963), Carnet and Scheer (1964), Rescher (1964), Barker (1965), Freeman (1967), Terrell (1967), Kilgore (1968), Ennis (1969b), Kahane (1969), Michalos (1969).

13. Beardsley (1950), Ruby (1954), Little, Wilson and Moore (1955), Emmet (1960), Moore (1967).

14. Hearnside and Holther (1959), Angell (1964), Gordon (1966), Ennis (1969a).

15. Brody (1973), Byerly (1973), Annis (1974), Kaminsky and Kaminsky (1974), Pospesel (1974), Baum (1975), Blumberg (1976), Ehlers (1976), Manicas and Kruger (1976), Simco and James (1976), and Carter (1977).

16. Michalos (1970), Capaldi (1973) and Engel (1976).

17. Kahane (1971), Thomas (1973), Ehninger (1974), Flew (1977), Geach (1976), Munson (1976), Scriven (1976), Johnson and Blair (1977), Fogelin (1978), Girle *et al*. (1978), Weddle (1978).

18. Purtill (1972), Barry (1976), and Runkle (1978).

19. It has become the practice to distinguish the artificial languages of logic from ordinary English, French, Chinese etc., by calling the latter "natural" languages. These are languages proper, or paradigmatically. We need a term to refer analogously to arguments actually used in a first-order way to attempt to convince – and moreover used without self-consciousness about the "nature" or "structure" or some ideal of argument. The term "natural arguments" will then distinguish such arguments from those which are invented just in order to serve as examples, and also (for the most part) from those which are self-consciously framed according to an explicit model of argument (such as arguments with numbered premises sometimes found in philosophy journal articles). It is frustrating to have to use special quotation marks to set off this term, but there is no generally accepted term with the reference we want to denote. Part of the problem is that the recognition of

the practical and theoretical significance of the difference between natural and invented arguments is just beginning to be appreciated. Woods and Walton used the term "natural argumentation" in (1972).

20. On the last point, while most authors claim to be providing the most common and/or the most tempting or deceptive fallacies, and although lists overlap, they by no means coincide. We doubt that empirical studies have been made to discover which fallacies do occur most frequently; or even that they could be made, since there is no accepted principle of fallacy individualization.

21. Most of the work here has simply ignored the deductive-inductive dichotomy, since it does not go nearly far enough in exposing relevant structures. More on this famous dichotomy, p. 29f.

22. Toulmin (1958:94-145) developed this approach.

23. Scriven (1976:xiv) has said, "as far as I know, there has never been an even moderately successful attempt to analyze the concept of an assumption (i.e., missing premise)."

24. We have subsequently learned of the work of Ennis (1969a) on "assumptions" (396-402). Ennis's "implicit logical assumptions" correspond to what we are calling "missing premises." (He distinguishes these from "explicit assumptions," which are undefended starting points in a line of reasoning.) He views the provision of implicit logical assumptions as a suggestive and creative activity, and offers three criteria which candidates should satisfy: gap-filling ability, credibility and simplicity.

25. The *Informal Logic Newsletter*, edited by Johnson and Blair, appeared in 1978, and represented a step in the direction of addressing this need. It became the journal, *Informal Logic* in 1985.

Chapter Two

Informal Logic: Past and Present

1. Introduction

In this chapter we have three objectives: (1) to present in rough outline the research done in informal logic from 1983 to 1994; (2) to give our impression of the current state of affairs in informal logic; and (3) to state our hopes for the future development of the informal logic project.

The First International Symposium on Informal Logic in 1978 found informal logic in its infancy, just beginning to emerge as a field of scholarly activity. There was a small literature of articles on informal fallacies. The few intimations, in North American philosophy, of a departure from the standard model for argument analysis and evaluation (viz., read the discourse as containing a proposed proof to be assessed for the truth of the premises and the deductive validity of the premise-conclusion implications) were limited to a handful of textbook (Kahane 1971; Thomas 1973; Scriven 1976). The idea of a new approach to argumentation was not widespread.

When the Second International Symposium on Informal Logic was held in 1983, informal logic had entered early adolescence. The journal literature had increased, and some monographs were in preparation. The number of instructors and scholars who were opening up to the informal logic approaches was growing.

By the time of the Third International Symposium on Informal Logic, held in 1989, the field was beginning to show signs of maturity. There was now a journal, the literature in journals and monographs had shown a distinct increase, themes and issues were being more clearly defined, and positions were being staked out and defended.

As this revision of our paper for the Third Symposium is being written in 1994, it is possible to identify several areas of research, a voluminous and steadily-expanding literature, and sustained interest on the part of scholars in various disciplines.

Before we offer our overview of the work since the 1983 Symposium, we would like to report some of the things we have been seeing and hearing during that period.

2. What We See

One thing we have seen are signs that informal logic is becoming a field in its own right. Among those signs, we mention the following three.

1. The state of the scholarship

The quantity and quality of articles, monographs and textbooks in informal logic continues to improve. We comment on the literature below; here we highlight two noteworthy aspects of this development, its spread and its depth.

A) *Spread*. In most areas of philosophy and other disciplines, it is common for a productive scholar to publish collections of articles on a given subject, and for anthologies on various aspects of the field to appear. Such collections suggest a range of production which in turn indicates that the discipline is confronted with a variety of issues on which scholars have taken different stands. In 1978, and again in 1983, we could report no such collection in the area of informal logic, but recently the accumulation of literature and interest has produced at least two. We are referring to Govier's *Problems in Argument Analysis and Evaluation* (1987) which brings together many of Govier's previously published papers on a variety of topics in informal logic, and Woods and Walton's *Fallacies: Selected Papers 1972-1982* (1989).

Since much of the attention of the critical thinking literature is directed to issues related to the analysis and critique of arguments, one might also include in this discussion of the spread of scholarly writing Paul's *Critical Thinking* (1990), a collection of his papers and addresses. The same holds true of McPeck's *Teaching Critical Thinking* (1990), containing five of his articles and exchanges with three of his critics: Norris, Siegel and Paul.

In addition, currently in preparation for publication are an anthology on fallacies, *Fallacies: Classical and Contemporary Readings* (edited by Hansen and Pinto for Pennsylvania State University Press), an anthology on the history of informal logic (edited by Brinton and Walton) and new chapters on fallacies and informal logic in the revised edition of *An Argumentation Handbook* (edited by Eemeren, Grootendorst and Kruiger 1987). Also in the offing: *Fundamentals of Argumentation Theory*, edited by Eemeren, Grootendorst and Snoeck Henkemans, due in 1996.

In sum, several individual scholars and several teams of scholars have produced fairly extensive bodies of work on informal logic or its cognate, critical thinking, in the period in question.

B) *Depth*. Monographs typically pursue a particular line of inquiry in some depth. There are now several monographs which in whole or in part have contributed to the development of informal logic. There is Siegel's *Educating Reason* (1988) in which he takes aim at some of the problems in the informal logic and critical thinking movement. He further shows how the problems he has focused on have connections with other areas of philosophy, particularly the philosophy of education and epistemology. There is Norris and Ennis's *Evaluating Critical Thinking* (1989), with its detailed discussion of testing for, among other things, students' capacity to evaluate arguments. There is Freeman's *Dialectics and the Macrostructure of Argument* (1991), a study of how statements enter into arguments, what supporting roles they play, and what configurations they exhibit. Freeman starts with Toulmin's model, refines and expands it, and adds innovations of his own. Last and by no means least, we must mention the prolific production by Walton, who has published no fewer than ten monographs on various aspects of informal logic: *Topical*

Relevance in Argumentation (1982), *Logical Dialogue Games and Fallacies* (1984), *Arguer's Position: A Pragmatic Study of 'Ad Hominem' Attack, Criticism, Refutation and Fallacy* (1985a), *Informal Fallacies: Towards a Theory of Argument Criticisms* (1987a), *Begging the Question: Circular Reasoning as a Tactic of Argumentation* (1991), *The Place of Emotion in Argument* (1992a), *Plausible Argument in Everyday Conversation* (1992b), *Slippery Slope Arguments* (1992c). In sum, several areas of informal logic have received in-depth scholarly attention.

There are also some scholars abroad working on much of the same problematic as informal logic, witness Lumer's *Praktische Argumentationstheorie* (1990), Plantin's *Essais sur l'Argumentation* (1990), and Snoeck Henkemans's *Analyzing Complex Argumentation* (1992).

Finally, many informal logic papers have appeared in recent conference proceedings – those of the 1986 and 1990 Amsterdam Conferences on Argumentation (see Eemeren, Grootendorst, Blair and Willard 1987a, 1978b, 1978c, and 1992a, 1992b), the proceedings of the Utrecht conference on the subject of its title, *Norms in Argumentation* (ed. Maier 1989), and several papers from the McMaster conference on relevance, published in a special issue of the journal, *Argumentation* (eds. Eemeren and Grootendorst 1992).

2. Journals

For the past ten years there has been a journal, *Informal Logic*, devoted specifically to research in informal logic, critical thinking and topics in cognate areas such as rhetoric and cognitive psychology. Submissions to *Informal Logic* have increased steadily over the decade, and the journal's articles are widely cited. In 1987, argumentation theorists from The Netherlands (Eemeren and Grootendorst) and Belgium (Meyer) joined forces to create the new journal, *Argumentation* (a quarterly), that has published, among much else, numerous articles on argumentation from the perspective of informal logic. The long-established journals, *Philosophy and Rhetoric, Synthese, American Philosophical Quarterly, Logique et Analyse* and *Argumentation and Advocacy* (formerly *Journal of the American Forensics Association*) continue to show themselves hospitable to articles on informal logic.

3. Informal Logic as an Area of Specialization

We are now seeing philosophy departments advertising tenure track positions that require competence in teaching informal logic. That was not true a decade ago, and it signals a perceived need to informal logic as a separate area of teaching specialization, and of scholarly research. *The Philosopher's Index* now lists informal logic as a distinct category for the purpose of indexing articles. These developments testify to the perception some have that informal logic is gradually becoming a recognized area of specialization for philosophers.

Those are some of the positive developments of the last dozen years. There are also some signs that point in the opposite direction, and we need to take those into account as well; we mention three.

Lack of Ph.D. Specialization

One way a subfield develops is by gaining purchase in the graduate curriculum, especially in doctoral programs. The practitioners of the generic discipline view it as sufficiently important that they invite the next generation of minds to take its problems seriously. For students interested in informal logic, there is no such opportunity. At the present time, one cannot study informal logic at the Ph.D. level the way one can study medical ethics or social epistemology in philosophy departments or, more to the point, as one can study argumentation in (speech) communication departments. We know only of one philosophy doctoral program where it is possible to take course in informal logic or argumentation (McMaster University in Canada), and there are some universities (including, again in Canada, Windsor, Lethbridge, McMaster, York and Toronto) where it is possible to write a master's thesis in informal logic. From the point of view of the development of informal logic as an enduring field of research, this situation is not ideal. There is virtually no opportunity for the current researchers in the field to transmit their knowledge to the next generation of scholars in a doctoral program.

Dissenting Voices

Some philosophers have argued that what "informal logic" denotes cannot be a field of logic. Lambert and Ulrich (1980) by implication, and Hintikka (1989) directly, contend it cannot be a field at all. McPeck (1981), Battersby (1989), and Weinstein (1990) all argue that in one way or another informal logic is not a separate field, but is really what they call applied epistemology. There is no theoretical coherence to the idea of informal logic as a distinct field, say these critics.

The Absence of a Paradigm

If, as many believe, a research program requires a paradigm for focus, then research in informal logic is without a compass at the moment, for there is no paradigm for informal logic. There is no dominant theory of informal logic, no distinctive methodology, no agreement, even, about the salient problems. If it is true that without a paradigm any emergent inquiry faces serious identity problems, then informal logic's future is open to question. (Although we acknowledge the implication, we must also mention that there are theoretical objections to this concept of a paradigm.)[1]

These, then, are some of the signs we see. We realize that our perceptions are cognitively laden, reflecting our interest in seeing informal logic emerge from the shadow of formal deductive logic as a legitimate field of logico-philosophical research. From what we hear, some people have misgivings about that direction. We next respond to some of the reservations we have heard regarding the emergence of informal logic.

3. What We Hear – Some Impressions

There are different views about informal logic in circulation within the academic community. We would like to review some of what we have heard and respond to these concerns.

Some say: "*You're becoming too specialized!*" Some expressed the fear that the transformation of the *Informal Logic Newsletter* into a refereed journal in 1985 was a move towards specialization with the attendant dangers of insularity and compartmentalization. Presumably by "too specialized" is meant too focused on argument analysis and evaluation, and not open enough, on the one hand, to reasoning in general, and on the other hand, to all the various elements of critical thinking besides argument evaluation. As well, "too specialized" might mean too focused on theory, and no longer sufficiently attentive to applications in the classroom, or to the theoretical lessons to be learned from classroom experience teaching informal logic.

To a limited extent, these fears have been realized. But against the loss of informality which characterized the *Newsletter* need to be reckoned the benefits of a scholarly journal. It demands and hence attracts research of a quality necessary for the continuing theoretical development of informal logic. To give but one example of how the latter sort of nurturing can work, consider the recent development of cognitive science. It has clearly profited from the research done on artificial intelligence which in turn owes a great deal to formal algorithmic procedures associated with contemporary logical theory. Cognitive science stands to benefit as well from the research on informal reasoning (see Voss, Perkins and Segal 1991), which cannot be modelled by logistic systems. Informal logicians have a contribution to make to the research on informal reasoning. Or again, to continue with this point, informal logicians have much to learn from recent research by cognitive psychologists. The important documents here are Nisbett and Ross *Human Inference* (1980) and Kahneman, Slovica and Tversky *Judgement Under Uncertainty* (1982). In our opinion, psychologists can benefit from the empirical study of argumentation. Here the informal logician has a contribution to make by providing models of non-deductive reasoning and non-demonstrative argumentation for psychologists to make use of in their research.

It is true that the shift toward theory has meant that the pedagogical mission of informal logic to make argument analysis and evaluation relevant, accessible and user-friendly has been somewhat neglected in the new format of the journal, *Informal Logic*. Plans are underway to redress that situation. Still we believe the risks of specialization must be weighed against the benefits of high standards, peer review, and the potential for contribution to the development of informal logic and other disciplines.

Something else we hear said: "Don't worry about differences and distinctions; let's all work together – informal logicians, critical thinking theorists, argumentation theorists, dialogue logicians, linguists, speech act theorists, rhetoricians, and so on."

Our response can only be: "We agree, of course." What we fail to see, however, is how our desire to push informal logic along on the path of its own development could be construed as inhibiting that ideal of cooperation. On the contrary, we need to develop a clearer sense of informal logic's identity in order to understand how it relates to other areas, such as critical thinking or argumentation theory. Besides, no one suggests that those involved in linguistics, rhetoric or dialogue logic abandon their own internal programs in order to promote the common wealth.

There are those who say: "Informal logic is such an unfortunate name. It is negative, where it should be positive; it connotes an incompatibility with formal logic. It even seems self-contradictory.

We agree that negative definition is less desirable than positive. It has been said that insofar as informal logic contrasts itself with formal logic it has targeted the wrong adversary, since what it is really opposed to is not formal logic but the imperialism of deductive logic (see Barth 1987). Specifically, it has been argued that the target is deductivism in logic, sometimes referred to as deductive chauvinism – the view that the only possible logic, properly so-called, is the logic of deductive entailments.[2] So not only is informal logic negative, but it suggests the wrong contrast. And, this line of thinking continues, it is not as if there were no other possible names. Among those suggested as more accurate descriptors of the project are "practical logic," "material logic" or "applied logic."

We're not the first to respond: "What's in a name?" First, while names are to some degree arbitrary, the associations and evaluations connected with words carry powerful messages, as the feminist literature has made ever so clear. The appropriation of the name "logic" *tout court* for that corner of the field consisting of the study of valid forms of deductive inference, in our opinion bestows upon the latter an altogether unjustified prominence due in all likelihood to its having become linked historically with the positivist research program. The claim that logic is, by definition, formal (in the sense of being formalizable) seems imperialistic, indeed it is a claim that not even deductive chauvinists can maintain, in the face of purely semantic entailments. And the claim that only axiomatic systems have the right to call themselves "logics" is claiming exclusivity for what is at best one historical sense of "logic" among others. On the other hand, that logic entails norms, criteria, rules, and principles is no argument against calling our field "logic," for its goal is just that: a systematic account of the norms governing arguments. (More on this below in 5.1.) Logic in this sense, no less than logic in the sense of the study of axiomatic systems, can trace its ancestry to the *Organon*, but our defense of that claim must wait until another day.

Second, insofar as the term "informal" is linked with the topic of informal fallacies, our field is part of a tradition that goes back to Aristotle, who was the first to discuss what are now called the informal fallacies. In that respect, we are quite happy with the name "informal logic." Aristotle's vision of the life of systematic thinking about thinking as we find it in the *Organon* (and elsewhere) contains considerations that are both formal and nonformal in character, both deductive and nondeductive, both systematic and non-systematic.

Third, we see no incompatibility between formal and informal logic. We would argue that the non-analytic thesis that the only logically good argument is one that has true premises that deductively imply the conclusion, is false. But it does not follow that formal or deductive validity has no role to play in argument evaluation. For example, any argument whose premises are intended to entail its conclusion must be evaluated using the norm of deductive validity. Also, as the work of Woods and Walton (both jointly and individually) shows, formal analyses can help illuminate the informal fallacies.

Another comment we hear: "Informal logic is really applied epistemology."

As we noted above, this view has been expressed by several theorists among them some who are sympathetic to the informal logic project. Yet we are not convinced. Some who take this line argue, specifically, that all the standards of cogent argument are epistemological in character. But there is evidence to the contrary. For instance, the standard of relevance is widely regarded as central to argument analysis and evaluation,

but to our knowledge relevance has not been dealt with in epistemology. Besides that, argument now has uses other than those of interest to the epistemologist: to justify beliefs or knowledge claims. Epistemic norms are beside the point for argumentation whose goal is to reach agreement or to defeat an opponent – for example the argumentation of mediation, negotiation or legal trials. Although we see overlap, and room for cooperation between informal logic and (applied) epistemology, we are not persuaded that the former reduces to the latter. Still we agree that this issue deserves a fuller discussion than it has hitherto received.

So much, then, for some of what we have seen and heard in recent years about informal logic. We now turn our attention to a brief review of scholarship in informal logic from 1983 to 1994.

4. Informal Logic Research 1983-1994

1. Results of the Second International Symposium (SISIL)

The Second International Symposium held at the University of Windsor, Ontario, June 20-23, 1983, had two spin-offs that helped to shape subsequent developments. One, already mentioned, was the transformation of the *Informal Logic Newsletter* into the journal, *Informal Logic*, creating an outlet and incentive that has resulted in an increase of good papers on topics related to informal logic. The other was the formation of the Association for Informal Logic and Critical Thinking (AILACT). By sponsoring special sessions on informal logic and critical thinking at the annual meetings of the Canadian Philosophical Association and the Eastern, Central and Pacific Divisions of the American Philosophical Association, AILACT has helped to thicken the flow of good papers and kept regularly scholarly discussions going.

2. The Argumentation Connection

Some readers may not be aware that the study of arguments and argumentation has long been carried on within several disciplines, including speech communication, rhetoric, and linguistics. The doorway between philosophy and the speech communication and rhetoric scholarly communities, long nailed shut by a philosophical bias against rhetoric – Henry W. Johnstone, Jr., and the journal *Philosophy and Rhetoric* being notable exceptions – was first opened a crack towards informal logic some years ago by the willingness of Joseph Wenzel and George Yoos to read and take seriously the informal logic literature. It is now open quite wide.

The interdisciplinary Amsterdam Conferences on Argumentation held in 1986, 1990 and 1994, organized by the Dutch originators of the pragma-dialectic theory of argument, Frans H. van Eemeren and Rob Grootendorst, and with some promotion in North America by J. Anthony Blair and Charles A. Willard, welcomed a number of philosophers to join with

linguists, rhetoricians, and communications researchers. The papers of the first two conferences were published in 1987 and 1992, respectively (see Bibliography).

The first Amsterdam conference also helped give birth to the new journal, *Argumentation*, mentioned above. Its initial policy of having a guest editor solicit papers for each issue generated some new research in informal logic, among other areas. (*Argumentation* has recently adopted the more standard open-submission policy, which will give informal logicians greater access.) As well, individuals from various disciplines, in pairs and other small groupings, have produced collaborative research, for example Eemeren, Grootendorst, Jackson and Jacobs (1993).

These recent interdisciplinary contacts notwithstanding, there is room for much more interchange among scholars from the various argumentation communities. For instance, only a handful of philosophers have been involved in the conferences mentioned above, and the literature of these other fields is not widely known to, or cited by, philosophers working on informal logic.

3. Conferences

Conferences too have played a role in the development of informal logic. The First, Second and Third Symposia on Informal Logic have been prominent. So too has been the annual conference on critical thinking at Sonoma State University (1996's is the sixteenth), which recently opened up a conference track where scholars share current research interests. John Hoaglund's Christopher Newport Conference, held each year from 1985-88, also helped to stimulate discussion. The just-mentioned Amsterdam Conferences on Argumentation (sponsored by the International Society for the Study of Argumentation – ISSA) have become important too. Others that have stimulated reflective energy about informal logic include: the McMaster Conference on Teaching Informal Logic and Critical Thinking organized by David Hitchcock (1988); Alec Fisher's First British Conference on Informal Logic and Critical Thinking in 1988, with a second scheduled for April 1994; the conference on argumentation chaired by Michel Meyer at Cerisy-la-Salle (1987); the conference on norms in argumentation organized by Robert Maier at Utrecht (1988); and the biennial Speech Communication and American Forensic Association sponsored argumentation conferences at Alta, Utah (held in odd-numbered years). Its representation at the conferences on this list gives some idea of the vitality of informal logic in the last dozen years.

4. The Literature

We cannot discuss the scholarly literature in much detail in the space available, but we shall present some statistics and comment on some of the trends.

Articles. If one looks at the rate and quality of published articles, the conclusion to be drawn is that research is continuing and even increasing. Restricting ourselves narrowly to informal logic and surveying the journals for the period 1983-1994, we find that yearly production ranges between 55 and 50 articles. The most complete bibliography we know

of, Hansen's (1990), has over 900 entries, most of which have appeared since 1970, and the bulk of which have appeared since 1980.

Fallacies remain a dominant focus of research in the journals, though we are seeing more theoretical literature about the strengths and weaknesses of fallacy theory and about the nature of fallacies. Likewise the nature of argumentation remains a strong focus in the literature. The distinction that many informal logicians accept between convergent, divergent and linked arguments is being challenged and refined. And we are seeing a more theoretical sort of article about logic and informal logic, about the nature of the theory of informal logic and about the relationship between logic, argumentation, inference and reasoning. As examples, we would mention four papers, three from the Second International Symposium – Maurice Finocchiaro's "*Informal Logic and the Theory of Reasoning*" (1984), Seale Doss's "*Three Steps Toward a Theory of Informal Logic*" (1985), and Perry Weddle's "*On Theory in Informal Logic*" (1985) and also Don Levi's "*In Defense of Informal Logic*" (1987).

Monographs. In the last dozen years we count 12 to 15 monographs (depending on the criteria for inclusion) related to informal logic. In the previous decade there were none.

Of particular importance is Govier's *Problems in Argument Analysis and Evaluation* which appeared in 1987 and which deals with a variety of topics important to the informal logician. Not only does she argue there that current theories of argument (Deductivism and Positivism) are deficient; she also makes a case for the importance of informal logic. For a detailed review of her text, see Allen (1990).

The volley of monographs produced by Douglas Walton deserves both commendation and more detailed commentary than we can devote to it here. His books appear to be of roughly three types. Belonging to the first type are those books in which he tracks an individual fallacy very closely, such as (1985a) in which he studies *ad hominem*, (1991) in which he studies begging the question and (1992c) in which he studies the slippery slope. A second type is one in which a broader aspect of the theory of argument is discussed; such as relevance (1982), dialogue games (1984), practical reasoning (1990a), the role of emotion (1992a), and plausible reasoning (1992b). The third type is the synoptic work in which an overview is provided: like the study on fallacies (1987a) and the handbook (1989b). In any of these, the reader will find Walton's unique ability to draw on the work that has been done by others while at the same time bringing his own original insights to bear.

Textbooks. The number of new textbooks, and revised editions of earlier texts, show that there is still a flourishing market for informal logic and critical thinking courses. Using as our criteria the requirements that (a) the text has to have at least some treatment of argument evaluation, and (b) it has to treat discourse informally or refer to informal fallacies, more than 50 new texts or editions have appeared in this period, only a very few of which take what we call the global approach where pride of place is given to formal treatments of deductive implication. In the past, we have argued (see Chapter One above) that, unlike many other fields, theoretical innovations in informal logic were often found in textbooks. We would venture that the texts of the last ten years display not so much innovation as consolidation, perhaps a sign of the growing maturity of the field, as well as the availability of forums where theoretical issues may be addressed. With conference

proceedings and journals available, and monographs beginning to appear in greater numbers, textbooks have begun to have the properties of those in other fields, which assimilate research developments rather than making them. A striking example is Freeman's *Thinking Logically* (1988, 2e 1992) which makes use of work by Beardsley (1950), Cederblom and Paulsen (1982), Copi (1986), Govier (1985), Hoaglund (1984), Johnson and Blair (1983 2e), Kahane (1971), Nolt (1984), Salmon (1984), Scriven (1977), Sproule (1980), Thomas (1986 3e), Toulmin (1958), Toulmin, Reike and Janik (1984 2e), and Wellman (1971). Nevertheless, the attention textbook writers have paid to the scholarly literature should not be exaggerated. Unfortunately, it remains true that some of the new texts appear to have been written in blithe ignorance of that literature.

There is no theoretical party line in informal logic textbooks. Although tree diagrams are ubiquitous, the theoretical underpinnings of different diagramming conventions vary (see Snoeck Henckemans 1992). One bit of doctrine we found cropping up several times is the view that arguments should be evaluated according to the three criteria of relevance, sufficiency and acceptability. This approach, an alternative to the traditional doctrine of soundness, was first articulated in Johnson and Blair (1977; 1993 5e and first U.S. edition 1994) and has been used, sometimes with different terminology, by Govier (1985), Damer (1987 2e), Freeman (1988), Little, Groarke and Tindale (1989), and Seech (1993). We would also contend that the handling of the informal fallacies in the textbooks has shown some sensitivity to the discussions of them in the scholarly literature. See for example Govier (1993) and Johnson and Blair (1994) where the treatment of the fallacy of faulty analogy has been clearly influenced by Govier's theoretical work.

5. Conclusion

All things considered – scholarly work in articles and books, conferences, interactions with other fields and textbooks – informal logic has been percolating at a modest but healthy pace in the period 1983-1994. It has established itself as an approach to logic. This development should be places in perspective: there are 11,000 names listed in the *Directory of American Philosophers*, but the journal *Informal Logic* has at present about 300 subscribers. In spite of the fact that nearly every university and college above the Mexican border (and a few below) offer a course in informal logic, or in critical thinking with an informal logic component, informal logic as a field of research interest does not receive much attention from mainstream philosophy. On the other hand, it has been connecting with other research communities interested in argumentation. In fact, informal logic has probably made greater inroads in the speech communication scholarly community than in its maternal discipline of philosophy.

5. Issues

We would like to comment on what we regard as the significant developments in informal logic since the Second International Symposium held in 1983. We have chosen to

highlight four: 1. the nature of informal logic; 2. informal logic and critical thinking; 3. the pertinence of dialogue logic; 4. connections with other areas of argumentation theory.

1. What is Informal Logic?

We begin with a brief word about the history of the term "informal logic." Ralph Pomeroy published an article in the *Informal Logic Newsletter* (1982), suggesting that Ryle's use of the term "informal logic" in the Tarner Lectures in 1953 anticipates the informal logic movement that began in the 1970s. However, what we intend by "informal logic" is not at all the same as what Ryle had in mind. For Ryle, informal logic comes very close to conceptual analysis:

> So what I hope to have done is to have brought out for examination some features of what I have dubbed the "informal logic" of our ordinary and technical concepts . . . What is often . . . described as the analysis of concepts is rather an operation . . . of working out the parities and disparities of reasoning between arguments hinging on the concepts of one conceptual apparatus and arguments hinging on those of another. (1954: 129).

For us, on the other hand, informal logic designates an alternative approach to symbolic logic for the analysis and evaluation of arguments, and in general to the teaching of logic that was provided by the mid-20th century tradition of formal deductive logic.

The informal part of informal logic derives from Kahane's decision over twenty years ago to attempt to revitalize logic using the informal fallacies as the instrument, though he does not use the term "informal logic" in *Logic and Contemporary Rhetoric* (1971). To the best of our knowledge, the first occurrence of the use of this term in our sense is in Carney and Scheer (unglossed), *Fundamentals of Logic* (1964), and it next appears in Fogelin, *Arguments: An Introduction to Informal Logic* (1978).

The evolution of our own understanding of informal logic is as follows.

1. In 1978, we conceived informal logic as that area of logic (not yet fully canonized as a discipline) that attempts to formulate principles and standards of logic necessary for the evaluation of argument (see Chapter One above). Notice that in this formulation informal logic is tied to the evaluation of argument, but nothing is said to justify the term informal.

2. In 1984, in introducing the journal *Informal Logic*, we wrote: "By informal logic we mean the logic used in the analysis and evaluation of arguments and other forms of reasoning used in the practice of the rational life. "This definition is somewhat broader in that other forms of reasoning have been included. And the clause the rational life is added.

3. In 1987, we defined informal logic as the normative study of argument (Blair and Johnson 1987). It is the area of logic that seeks to develop standards, criteria and procedures for the interpretation, evaluation and construction of arguments and argumentation used in natural language. Here again no reference was made to account for

the term "informal". In this version, the reference to natural language is used to mark the contrast with artificial language.

Clearly crucial to any understanding of informal logic is how the term "formal" is to be taken. Though the point is painfully obvious once made, it has eluded many scholars (initially the present authors among them). We have since distinguished no less than seven different senses of the term formal (and hence informal) (1991). But rather than quote ourselves, we shall cite the more incisive tri-partite distinction drawn by Barth and Krabbe (1982), where they distinguish three senses of "formal."

"form(al)$_1$": This sense goes back to Plato's idea of form or eidos. As Barth and Krabbe point out, most traditional logic is formal$_1$: e.g. syllogistic and Hegelian logic. Only indirectly is this sense operative in our understanding of what informal logic is.

"form(al)$_2$": This sense can refer to the shape of complex expressions, more precisely the mode of construction. As Barth and Krabbe say:

> When one says "the logic of system S is a formal$_2$ logic," one can have two different things in mind and usually both are meant simultaneously. One may want to say that the syntax of the language to which S belongs is very precisely formulated (formalized) . . . One may also want to express that the validity concept in S, the concept of goodness as applicable to arguments, is defined in terms of the forms of the sentences involved . . . This boils down to saying that the validity concept of one that makes the validity or invalidity of an argument a function (i) of the definitions of the meanings of the logical constraints concerned and (ii) of the position in which they occur in the sentences involved, i.e., of the *form* of these sentences. (15)

In our view, it is this second sense of "formal" which provides the background against which to understand the development of informal logic. For the formal$_2$ logician, validity is an essential element of the goodness of arguments and validity is frequently a function of the argument's form. For the informal logician, the cogency of an argument is not a function of its logical form. Indeed the distinction between matter and form is not in the forefront of the informal logician's method of schematization. Thus it might be said that informal logic is informal$_2$ logic.

Barth and Krabbe speak of formal$_3$ procedures as those:

> Which are somehow regulated or regimented, which take place according to some set of rules . . . In Chapter III we shall try to develop acceptable rules for verbal resolution of conflicts of opinion: systems of such rules we shall call systems of formal$_3$ dialectics. This expression is taken from Hamblin's book *Fallacies* to which we are in several ways indebted (19).

Informal logic is not informal$_3$. That is, informal logic does not stand opposed to the development of rules of criteria which regulate the process of argumentation. Thus there is no intrinsic opposition between informal$_2$ logic and formal$_3$ dialectic.

In summary, our view is that informal logic is the logic of argumentation, and is to be distinguished from formal$_2$ logic, which we see as the logic of sentential implication

relationships. Informal logic's identity is also separate from such related enterprises as critical thinking, dialogue logic and argumentation theory, each of which we now discuss.

2. Informal Logic and Critical Thinking

Many seem to think of informal logic and critical thinking as equivalent enterprises. Going by course titles and descriptions, the introductory logic course is widely viewed as a catch-all for the teaching of "elementary logic," "reasoning skills," "critical thinking," "informal logic," "applied logic" or what have you. Even many of those who have attended to the referents of the two terms regard them as interchangeable (see, for example, the title of Hoaglund, 1984: *Critical Thinking: An Introduction to Informal Logic*). Without in any way wanting to deny a close connection, or to discourage the doctrinal bonds between informal logicians and those who identify their field as critical thinking, we believe it important to see clearly their respective identities. Here is how we would begin to draw the distinction.

Let us say provisionally that "critical thinking" refers to a habit or style of thinking and reflection – one that, ideally, will be widely achieved. Thus critical thinking refers at once to both a practice and an educational ideal. There is much debate about just how critical thinking is to be defined or understood. We count no less than five well-funded theoretical accounts (McPeck 1981; Lipman 1988; Siegel 1988; Norris and Ennis 1989; and Paul 1990) each of which has its own distinctive emphasis, though some of them are closer to one another (Siegel and Ennis) than are others (Paul and McPeck). (See Chapter Twelve below for a detailed account.) However, there is a family resemblance between the different conceptions, with the following features shared among the various versions: a reflective skeptical or questioning attitude, a sensitivity to value or ideology-laden assumptions, an insistence on appropriate supporting grounds before accepting disputable claims, an appreciation of the various criteria applicable to good reasoning and argument (whether general or subject dependent), skill and judgment in the analysis and evaluation of claims and arguments, and a disposition to be self-reflective, sensitive to one's own possible biases or assumptions.

Informal logic, on the other hand, is a branch of logic. Specifically, as we have stated above, it is the branch of logic whose subject is the norms that apply to the cogency of argumentation, understanding argumentation as a social activity paradigmatically carried on in the medium of a natural language.

Such would be the main premises of our argument that informal logic, a field of logical inquiry, and critical thinking, a practice and an educational objective, are distinct.

How are they related? That is not altogether clear, partly because of the opacity of critical thinking. To the extent that argument analysis and evaluation are activities best performed critically, good informal logicians will be critical thinkers. And to the degree that critical thinking entails being able to evaluate argumentation, a training in critical thinking will profit from knowledge of informal logic. However, presumably critical thinking would be augmented by knowledge of other areas of logic, such as at least elementary deductive and inductive logic, and would as well require numerous extra-logical competencies, for example aesthetic sensitivity and judgment.

3. Informal Logic and Dialogue Logic

The best brief history of dialogue logic can be found in Walton (1985b). He distinguishes four different strands of development of dialogue logic. The first is the logical study of communication, initiated by David Harrah. A second strand emanates from Hamblin's *Fallacies*, where Hamblin offered a criticism of the ideal of soundness for arguments (a "sound" argument has true premises and is deductively valid), which led him to stress the importance of dialectical criteria (as distinguished from alethic an epistemic criteria) for the evaluation of argumentation. In the furtherance of this project, Hamblin wrote a chapter he titled "Formal Dialectic." A third strand is the work of Paul Lorenzen and his strip rules for logical constants. A fourth strand is represented by the research of Jaakko Hintikka on information-seeking dialogues, which Walton regards as the most promising development.

Valuable resources for those interested in the emergence of dialogue logic are Barth's "Philosophical Logic in the Netherlands after 1940" (1986) and "Dialogical Approaches" (1992). In the latter Barth situates the emergence of dialogue logic within the wider philosophical context and traces its role in the development of the theory of argumentation (667f.). Barth sees the emergence of dialogue logic as a result of the rejection of foundationalism connected with the Deductive-Nomological Paradigm, according to which logic was to be the science that would serve mathematicians in the analysis of strengths and weaknesses of deductive nomological systems. According to Barth:

> One can easily distinguish three post-fundamentalist, post-philosophical steps and three corresponding stages of argumentation theory. Only its second and third stages fall under dialogical philosophy. (667)

Those stages are: first, from fundament to justification; second, the justification is related to the specific concessions of an audience; third, the justification itself essentially contains also the verbal reactions of the audience.

Like argumentation theorists, dialogue logicians seek to present and justify rules according to which the activity can be carried on in a rational fashion. Some make use of $formal_2$ and mathematical models, and in that respect dialogue logic and informal logic part company.

Still to the degree that texts and conversations in natural language can be represented now as an argument, now as a dialogue, it looks as if dialogue logic and informal logic are different approaches, each largely governed by a normative interest. The dialogue logician assigns to logic the task of prescribing rights and duties in the transaction of a rational dialogue. The informal logician assigns to logic the task of developing the criteria or standards for use in the evaluation of arguments.

4. Argumentation Theory

We take "argumentation theory" to designate theories about the nature of argumentation and argument, either in broad, overall terms or with respect to specific

details or aspects. This is not the place to give a history of argumentation theory or an account of its various current strands. That would require a book-length treatment. Some parts of an overview are to be found in Barth and Martens (1982), Cox and Willard, Eds. (1982), Eemeren, Grootendorst and Kruiger (1987; 2nd, expanded edition forthcoming), and in Plantin (1990). We will make do with a brief account of some of the historical developments and current theories.

Contemporary argumentation theories can trace their roots to a variety of fields, including philosophy (specifically logic and the philosophy of language, and to the philosophy of law, ethics and political philosophy), rhetoric, debate, and linguistics.

The development of theories of argument as dialogical can be traced to the pioneering work of Paul Lorenzen and his student Kuno Lorenz (1978) in Germany; and E. W. Berth (1962) and his student E. M. Barth in the Netherlands. Barth's students, Eemeren and Grootendorst (1984) – who were influenced also by Crawshay-Williams (1957), Austin (1962), Searle (1970), Grice (1975) and the Erlangen school (Paul Lorenzen, *et al.*) among others – have developed a unitary, "pragma-dialectic," speech act theory of argumentation, in which they construct an idealized model of argument as a rationally ordered discussion aimed at resolving a disagreement. More recently, important initiatives in this approach can be found in Barth and Krabbe (1982) and in Walton and Krabbe (1995).

Chaim Perelman's work in Brussels in the philosophy of law and the theory of justice led him, with his colleague Lucie Olbrechts-Tyteca, to produce a massive quasi-empirical, quasi-normative study of patterns of argumentation and reasoning (1969) that challenged the authority of deductive logic and proof theory to adjudicate argumentation. Perelman's work was so widely influential that its impact is difficult to track. In Brussels itself, Perelman's colleague Michael Meyer, has developed a theory of argumentation which he calls "problematology."

Toulmin's jurisprudential model of argument (1958) had a major influence on American argumentation scholars, such as Wayne Brockriede (1960, 1972, 1975), who in turn had an impact on theory of argumentation mediated by the tradition of rhetoric and debate tracing back to the 18th century in America (see Foss, Foss and Trapp 1985). Toulmin's influence has since become general: see, for example, the monograph on argument structure by Freeman, *Dialectics and the Macrostructure of Argument* (1991).

Until, and apart from, the rise of informal logic, there was and is little work explicitly devoted to argumentation by philosophers in the United States. The two figures who stand out as important contributors are Henry W. Johnstone, Jr., (1978), who analyzed philosophical argumentation as proceeding from the concessions of opponents, and who has edited the important journal, *Philosophy and Rhetoric*, and Nicholas Rescher, whose work on dialectical reasoning (1977) and on the logic of plausible reasoning (1976) has influenced Woods and Walton (1982) and Blair and Johnson (1987), among others. But even these works of Rescher's were not devoted explicitly, or primarily, to argumentation.

Another historical strand traces from Charles L. Hamblin's work on fallacies and dialectical logic (1970), which had a major influence on the work on fallacies by John Woods and Douglas Walton (1989), and their associated pluralistic theory of argument. Walton's more recent work reflects also the influence of Eemeren and Grootendorst (see 1991), though Walton has reservations.

In Switzerland, influenced by Piaget among others, Jean-Blais Grize developed a theory of "natural logic" (1982), the logic of natural-language, real-world dialogues, and

created a research center at Neuchâtel in 1969, the Centre de Recherches Sémiologiques. Grize's inspiration continues to be elaborated and developed by his colleagues at Neuchâtel who have so far produced over fifty works and are still active.

In France, Oswald Ducrot and his colleague Jean-Claude Anscombre, originally influenced by Saussure, have for many years been elaborating a theory about the argumentative force and direction of the use of individual words and expressions within sentences (see, for example, Anscombre and Ducrot 1983; Ducrot 1984). Ducrot and Anscombre are still active, and their numerous students attest to their continuing influence (See, for example, Christian Plantin 1990).

There is no single or predominant theory of argumentation shared by German-language scholars.[3] The most important philosophical influences on scholars working in argumentation in Germany have been Toulmin, Jürgen Habermas (1984), and the dialogue logic theorists of the Erlangen school, influenced by Lorenzen and Lorenz (referred to above). Joseph Kopperschmidt is probably the leading Germany scholar studying argumentation from the perspective of rhetoric (see, for example, 1976, 1980, 1989).

This quick scan of the historical strands and theoretical strains of argumentation studies in North America and Western Europe makes it clear that argumentation theory is wide-ranging, in terms of the disciplines and countries represented.

What then can be said about the relationship between argumentation theory and informal logic? The locus of informal logic's interest stands somewhere in between the microscopic examination of the argumentative significance of word choice or order and the macroscopic study of the social and political roles and significance of argumentation. Using the tools language supplies, and shaped by the broad context of social practices, interlocutors and isolated inquirers construct, shape, communicate, interpret, analyze and evaluate arguments, in units, sets and complex nets, for a variety of purposes. Apart from how the arguings are best conducted, what norms do and should govern the component arguments? That, in our view, is the focusing question of informal logic. We do not mean to imply that the question can be answered independently of the wider linguistic and social contexts or that there may be no interplay between procedural and logical norms; nor do we assume that there is one single or simple set of standards for all arguments in all contexts. So informal logic may be seen as a branch of argumentation theory. Put the other way around, any over-all theory of argumentation will need to contain as a component a theory of informal logic.

Informal logic requires the assumption that there are contexts in which it is possible to discriminate between strong and weak arguments, that people can be wrongly persuaded by bad arguments and can mistakenly fail to acknowledge the force of good arguments, and that arguers can succeed or fall short in meeting their obligations to defend their claims. Informal logic presupposes that there are occasions on which it makes sense to speak of reasonable beliefs and sensible actions, that such judgments can be a function of the merits of accompanying arguments that some disagreements can be resolved reasonably, and that some beliefs can be well grounded.

6. Conclusion

We live in troubled times. There is a great need within the human community for cooperative rational discussion dealing with the problems we face. There is a great need for reason and rationality. There is a corresponding need for a society that is well-educated in the methods and habits of rational argumentation. It is our hope that by promoting interest in both the study and the practice of argumentation as a rational enterprise, informal logicians have a contribution to make to logic and to philosophy generally, to the education of the next generations, and to society at large.

Notes

1. At the 1989 Symposium at which an earlier version of this paper was read, Michael Scriven objected to the need for a paradigm. He reminded us that the very concept of a paradigm is one whose status in the philosophy and history of science is highly debatable, so the suggestion that the absence of a paradigm for informal logic detracts from its independent development buys into a contentious assumption.

2. "All inference is either deductive or defective" is the way that one luminary put the matter. For a history of the term "deductive chauvinism," see Grunbaum and Salmon (1988), Preface.

3. We owe these comments to Manfred Kienpointner's review of German-language argumentation scholarship (1991).

Chapter Three

The New Logic Course: The State of the Art in Non-Formal Methods of Argument Analysis

1. The Instructor and the Course

Teaching informal logic is an intriguing, if hazardous, enterprise.[1] However one chooses to formulate the goal, it will clearly be a practical one – something like teaching reasoning skills. To judge by the current state of affairs, the need to teach students such skills has possibly never been greater. The hazards come in the form of the demands on the instructor's time, patience and ingenuity. (More on this shortly.) This is no less true in the case of the students, who will find themselves confronted with specimens of reasoning which are vague and susceptible of variant interpretations. Because their education has given them little practice in dealing with gray areas, this will cause frustration. In such a setting, it seems clear that the selection of a textbook will have a marked effect on the success of the enterprise.

But there is more. The intrigue comes in to the picture because of the way in which theory, practice and pedagogy intersect in informal logic. The recent development of informal logic (see Chapter One above) appears to have been stimulated, in large part, by pedagogical concerns; i.e., not only by the desire of instructors to provide students with logical skills that will equip them to engage critically with arguments in natural language, but also by the enormous and well-known difficulties in applying the methods of formal logic to that realm. At the very same time, in the pursuit of this aspiration, informal logicians have been forced to confront serious theoretical issues. Since there has not been an appropriate forum in which such issues can be thrashed out, textbooks have become, by default, a prominent forum for theoretical as well as pedagogical innovation. The burgeoning number of textbooks on informal logic bears witness to the fertility of the soil.[2] In this setting, the selection of a text assumed increased importance.

This chapter, therefore, takes as its focal point several texts on informal logic. The purpose is to provide an overview of some of the initiatives as well as their bearing on both theoretical and pedagogical matters.

Lest it seem, however, that I place too much emphasis on the choice of a text, let me dwell for a moment here on the rather formidable demands such a course will place on the instructor. An instructor in an informal logic course needs to possess, in some heroic blend, the following qualities:

1. *Availability*. The instructor has to be available to students who need additional help in mastering the skills. So much for restricted office hours.

2. *Rationality*. The instructor must embody the attitude which Robert Binkley has rightly targeted as a crucial ingredient in the enterprise – the love of reason.[3] (The textbook should display this same quality, of course.)

3. *Resourcefulness*. The instructor must maintain a robust supply of up-to-date and challenging examples for use in classroom discussion, as illustrations, and for use in assignments and tests. (A good textbook is an invaluable help on this front.)

4. *Flexibility*. The instructor must be ready to consider alternative interpretations of the material under discussion. Nothing alienates the fledgling logician more quickly than dogmatic insistence on the instructor's reading.

5. *Diligence*. The instructor must be ready and willing to do the often tedious job of correcting and marking the multiple assignments required if students are to receive the practice they need to master the skills of critical analysis. So much for weekends!

6. *Openness*. The instructor must develop a healthy interplay between herself and the members of the class, so that they feel free to challenge her views. Only in such a climate will students be able to take seriously the idea of critical analysis.

7. *Innovation*. The instructor must adopt an experimental attitude toward teaching informal logic, be willing to try out new ideas, and deviate from the lesson plan.

In saying all this, I have made an assumption, and the time has come to spell it out. I have been assuming that the goal of an informal logic course is to equip the student with the skills needed to make a coherent assessment into an intelligent piece of logical criticism. In short, the focus of an informal logic course ought to be argument analysis.

The question of which method to adopt is a vexing one, especially when one takes into consideration the variety of methods embodied in recent texts. I shall have much more to say about this in the rest of this chapter. On one thing, however, I do insist: the reference point of our enterprise must be what I shall call, following Kahane, (1980 3e: 143) the *extended argument*. There is no real profit to be derived from analyzing those invented creatures which, until very recently, populated logic texts.

The question, then, which I aim to confront is this one: Given the importance that a textbook will play in the success of an informal logic course, and given the necessity of focusing on real arguments, what are the ingredients of a satisfactory procedure for assessing them and which of the current crop of texts comes closest to meeting them?

One last detour before the question is joined. Even if, as I have claimed, argument analysis is the core of the matter, there are other matters which ought to be dealt with in our course.

First, an informal logic course should contain a segment on the mass media. Its aim should be to teach the student how to cope intelligently with the mass media. My reasoning goes like this. Inevitably, most of the material that forms the flesh and blood of real arguments will be fashioned by contact with the media. Hence, our students need to know something about how the media operate, how they go about the risky business of gathering

and dispensing information, what their inherent limitations are – all so that students know how to use the media to their advantage and how to avoid being misled.

Second, an informal logic course should provide the student with basic research skills. The student needs to know how to go about verifying the claims they confront in arguments. The need for this is clear if one realizes that most students are much too docile in their thinking habits, much too inclined to think that any impressively worded statement which sounds factual is true.[4] Sound criticism of arguments is impeded by such thinking. If we don't spike it, who will?

Third, an informal logic course should contain a modicum of formal logic. But just how much and just what sort, I do not profess to know.

The course which I have just outlined, containing as it does not only argument analysis but also segments on mass media, library research, and formal logic, may strike many as ambitious *in extremis* – much too much to be accomplished in one semester. My ready, if facile, response is this: "Fine. Then get yourself another semester in order to do the job that needs to be done!"

That said, I end these preliminaries and turn to the main event. Recent texts in informal logic have presented a number of different methods for analyzing, from a nonformal perspective, extended arguments. What are their various strengths and weaknesses?

In answering this question, I have to confront a methodological problem. There are at least two different ways to proceed. The best way (because the more empirical) would have been to select a sample argument, put that argument through the paces dictated by the method under review, and then judge and compare the results.[5] This kind of comparative analysis must remain, for the time being, the road not taken. Instead, I have, somewhat reluctantly I must admit, adopted a different (and more *a prioristic*) approach to the question. I shall set forth and defend a framework of items which, I shall argue, ought to be incorporated in any satisfactory method for analyzing arguments. I shall then review the analytic methods proposed in three landmark texts to see how they fare with respect to that framework.

The next step, then, is to itemize and justify the items in that framework. I shall list them all and then double back and provide the requisite justification.

A satisfactory method for analyzing arguments ought to include the following:

i) *A procedure for the elimination of extraneous material;*
ii) *A method for discerning and displaying the structure of the argument;*
iii) *A technique for identifying and formulating missing premises (or assumptions);*
iv) *Instruction on the clarification of meaning;*
v) *Directions for evaluation and criticism;*

These are the theoretical elements in the framework. In addition, there are two pedagogical items:

vi) *Sufficient explanation and application of each of the above on examples in the body of the text;*
vii) *Sufficient additional examples in the exercises for assignments and tests*

A text which possesses all these elements has an excellent chance of helping the instructor achieve the goal.

I shall now attempt to justify each of the elements in the framework.

i) *Elimination of extraneous material.* What belongs to the argument and what is extraneous to it? This question, which may well not be important when one analyzes the tightly knit sort of argument one encounters in philosophy, becomes crucial when we train our sights on real-life arguments. In that milieu, people digress, throw in asides, get sidetracked, mix in background information, and so on. In confronting such arguments, the student is faced with the first of many judgments which he or she must make in evaluating the argument. It is an important first step, and some guidance from the text is needed if the student is to make it well (see below p. 65).

ii) *Display of structure*. I tell my students: "You cannot hope to offer intelligent criticism of an argument unless you have first apprehended its structure." By "structure" here, I do not have in mind what formal logicians would call the logical form of the argument. I mean rather the way in which the premises and the conclusion hang together. The question is not so much whether this step is needed, but how it is best achieved.

iii) *Supplying missing premises*. Most arguments in ordinary discourse involve unstated premises, and it is terribly important that students be able to ferret these out and subject them to scrutiny. Scriven has put it well (1976:xvi):

> I sometimes think one can best spotlight the gap between formal logic and real reasoning by pointing out that almost every real argument involved assumptions, but that, as far as I know, there has never been an even moderately successful attempt to analyze the concept of an assumption. Without such analysis, effective criticism of an argument, or arguer, is hopelessly crippled.

iv) *Clarification of meaning.* In evaluating arguments, students must become sensitive to the intricacies of language and to questions of meaning. They need to learn to ask such questions as: "Is this phrase (or sentence) clear? What precisely does the statement mean? What possible meanings can be assigned to this premise and how do these alternatives affect the interpretation and evaluation of the argument?" Without the ability to raise such questions, the capacity to locate important flaws in an argument will be greatly hampered.

v) *Evaluation and criticism.* The purpose of argument analysis cannot be merely to identify weak arguments nor even to locate their defects. It must rather be that of effective criticism. While this no doubt includes the ability to spot the weaknesses in the first place, the student cannot stop there. He or she must articulate that judgment clearly and defend it

fully. It is not and can never be sufficient merely to assert that such-and-such a mistake has occurred, for such an assertion is a judgment which must itself be supported.

But this is not yet the full story. Just locating and making an adequate case for the claim that the argument has these flaws stops short of the target. The critic is also obliged to weigh and consider the significance of various flaws, so *discrimination* becomes crucial. The final result should be an ordered series of criticisms terminating in an overall judgment of the argument's worth. A good text must make these points clear and show the student how to deliver the goods, how to avoid nitpicking, how to concentrate on serious rather than trivial flaws.

This, then, is the framework I propose to use chiefly as a heuristic device in the survey undertaken here of several textbooks in informal logic.

For this survey, I have chosen to concentrate on three landmark texts in informal logic, all of which are in wide use and have been well-received critically. Yet they are different enough from one another to allow for contrast and comparison. Part 2 of this chapter is my review of these texts in light of the framework already elaborated. Part 3 will draw some conclusions from that review. Part 4 will consist of some final thoughts about teaching informal logic.

2. Survey of Texts

Logic and Contemporary Rhetoric, Howard Kahane (Wadsworth, 3e 1980)

Kahane's text has played a significant role in the revitalization of informal logic. With its fresh approach to fallacy theory, this text helped to bring informal logic into the twentieth century and has been justifiably described as one of the first "New Wave" texts (see above p. 14ff.). The fact that the text is now in its third edition is some evidence of its popularity and acceptance. Worth noting also is the fact that Kahane was the first writer to emphasize the importance of focusing on real arguments. Most important for purposes of this review, Kahane was the first to present a procedure for what he referred to as the "extended argument."[6]

Kahane's method for analyzing extended arguments is set forth in Chapter 7. He dubs it "the margin note-summary method" (143) and explains its four steps this way:

1. Read the material to be evaluated
2. Read it through again, this time marking the important passages, perhaps with an indication of the content written in the margin.
3. Use the margin notes to construct a summary of the passage.
4. Evaluate the original material by evaluating the summary, checking the original to be sure there are no differences between the two which are relevant to the evaluation.

This method, Kahane says, "is based on the idea that a summary is more easily digested than the original material and therefore more accurately evaluated" (143). In the rest of the

chapter, Kahane puts his method to work on various types of extended argument: editorials, political columns and articles, speeches and debates.

In essence, the margin note-summary method amounts to constructing a logical précis of the original, with each separate assertion identified, and the entire group then inspected to see whether it contains any instances of fallacious reasoning. This method has in its favour the fact that it is an easy method to master and can readily be deployed to deal with very long arguments.

However, there are several problems with the method. First, it does not require that even the broad outlines of the logical structure be sketched – never mind the finer details. Second, and perhaps because of this, this method does not make provision for the identification of missing premises. Thus on items (ii) and (iii) of the framework, the text does not come off very well. As for (i) – elimination of extraneous material – Kahane provides several examples but no theoretical guidance. And while Chapter 6 deals with language and does an excellent job of distinguishing between cognitive and emotive meaning, the text does not forthrightly address the problem of clarification of (cognitive) meaning.

However, I believe the most important problem with this method surrounds item (v) – evaluation and criticism. Kahane's method does not require (though it may be consistent with) the practice of *discrimination*. That is, the student who uses this method may (following what is at times Kahane's own practice) simply comb the note-summary to see whether any fallacies have been committed. In so doing, the students (again following what is at times Kahane's own practice) may: 1) fail to defend fully the fallacy charge; 2) fail to note that some fallacies are more damaging to an argument than others; 3) fail to note that some premises may be more crucial to the argument than others. A further point concerns the very matrix of Kahane's evaluation procedure: fallacy theory. Many informal logicians have expressed reservations about the viability of fallacy theory as an instrument of evaluation. In summary, Kahane's method falls short on item (v) because it does not require that criticisms be presented in an ordered series terminating with a final judgment on the argument's merits.

An example from the text will be useful here. Kahane (143-47) presents his analysis of an editorial which appeared in the *New York Times* in 1970. The subject of the editorial was the so-called "Astoria Compromise," a proposal by then-Mayor Lindsay which gave Consolidated Edison permission to build a new facility over the objections of environmental groups. Kahane gives us his summary of the editorial – eight separate assertions. After commenting on the dangers inherent in such summarizing, he gets down to business:

> Let's take the important statements in the editorial one by one, and then append a general statement. (145)

An obvious danger in this strategy is that the order in which the statements occur in the editorial and the summary will not necessarily be the order of significance.

I will not reproduce here the entire treatment Kahane gives. Let us spotlight one portion – an important one:

> Assertion 3 ("But it compromises with the other side since Con Ed is permitted only half of the increase it asked for") in effect comes close to saying that Lindsay's Solomon-like decision was right because it was a fifty-fifty compromise. The *Times* editorial thus seems to

> have committed what is often called the fallacy of the golden mean, since it nowhere defends Lindsay's decision *qua* its being a half-way measure. For instance, it doesn't argue that granting only one quarter the requested increase would not be sufficient, or granting it at all would be too much. (146)

Here Kahane, while appraising one of the assertions, finds that it is guilty of the fallacy of the golden mean. He provides some justification for that charge. This is as it should be.

Now we flash forward to the end of the analysis:

> The *New York Times*, it should be pointed out, seems to have been guilty along with Mayor Lindsay. In particular, the *Times* was guilty of suppressing evidence contrary to the conclusion it wanted to draw. This is one of the *Times* chief devices for making its editorials seem plausible to its readers. Its position of prestige and authority does not permit open appeals to emotion or prejudice of the kind many other newspapers employ. Omissions are much less obvious than the use of emotively charged phrases. They are probably more effective with an intelligent but inadequately informed audience. (147)

Here we should note that, in contrast with the previously cited section of his analysis, Kahane here makes a charge (suppressing evidence) which has apparently not been defended. What is the evidence which the *Times* suppressed? (In fairness to Kahane, it may be that the previous paragraph of his analysis is meant to identify that evidence. If so, this should have been made clearer.)

Second, which of the criticisms is most significant? The fallacy of the golden mean? The suppressed evidence?

Third, where is the general statement which Kahane promised at the outset of the analysis? Where is the overall judgment of the argument's worth?

The point is not that fallacy theory is an inadequate tool for evaluation, but rather that Kahane's use of it does not require the use of discrimination in presenting criticisms.[7]

The great advantage of Kahane's text is its profuse supply of examples to illustrate along with the number of evocative examples included for exercises. And there are other merits which I cannot discuss here. But from the point of view of providing a satisfactory method for argument analysis, Kahane's text is not much more than a first step – certainly an important one, but far from the last word.

I hope there will be no objection if, as an addendum, I pause to consider briefly a text I co-authored with my colleague J. A. Blair. *Logical Self-Defense* (1977) owed its inspiration to Kahane's text. The major difference in our methods for analyzing extended arguments is that ours required that the argument be standardized: i.e., putting the argument into premise-conclusion form with internal arguments shown in their relationship to the main argument. Although standardization is a laborious procedure to use in attempting to identify the structure of the argument (because each statement must be written out in full and placed in its appropriate location within the entire structure), it remains, in my opinion, an excellent method for displaying structure.

Logical Self-Defense also utilizes fallacy theory as the framework for the evaluation and criticism. But, again like Kahane, our procedure does not require that criticisms be

ordered in terms of strength. Thus, after picking apart a sample argument at great length, we conclude (1977:200):

> Our appraisal of LaFave's argument has turned up a medley of fallacies. (Notice, however, that we make no attempt to say which of them is most serious.) We emphasize two things about this analysis. First, at no point can we claim to have decisively refuted his argument, and we've certainly not demonstrated that his main conclusion is false. Second, at least as we have tried to employ it, the charge of fallacy serves to extend the argument, not to cut off debate. Uncovering the fallacies we have found in LaFave's argument invited the search for more information, additional evidence, amplification. Our verdict is that *as it stands* the argument doesn't succeed in establishing its conclusion.

Our instinct here was right. However, our criticism would have been more cogent and effective had we provided some ordering of the multiple criticisms and been more precise in making our overall judgment. That is, we should have said just why the argument does not succeed.

Practical Reasoning in Natural Language, Stephen Thomas (Prentice Hall, 1973)[8]

The approach Thomas takes to argument analysis is essentially a modification of one developed originally by Monroe Beardsley (1950) – a debt which Thomas acknowledges in his preface and throughout the text.

The great strength of Thomas's text is its thorough and often innovative treatment of the task of diagnosing and displaying argument structure. The basic tool is what Thomas calls an "argument diagram": each statement in the argument is numbered, and its relationship to others is indicated by an arrow drawn from the premise (or "reason") to the conclusion it is supposed to support. Thomas presents an explicit set of steps that the student can use in going from the original expression of the argument in natural language to the argument diagram, and these steps are sufficiently explained and illustrated in the text. In addition, Thomas devotes sections to some of the trickier problems, such as how to convert noun clauses into statements. While these conversions may strike us as a matter of routine, we should not underestimate the problems our students may encounter.

Following Beardsley but going beyond him, Thomas distinguishes four types of inference pattern: *divergent* – in which a single statement supports more than one conclusion; *convergent* – in which more than one reason is presented for a conclusion but those reasons are independent of each other; *linked* – in which more than one reason is given and those reasons work together to support the conclusion; and *serial* – a single statement functions both as a conclusion and as a reason for some further conclusion. *Basic reasons* are those reasons not themselves supported by any others in the argument. *Final conclusions* are those conclusions which are not used to support any further conclusion.

With this apparatus, Thomas leads the student gradually from simple examples in the early chapters to more difficult ones later on. Although Thomas has no special procedure for handling what I call extended arguments, he is aware of their existence and the difficulties they present.

> Not all arguments are presented in the relatively clear and well-organized manner of the majority of examples in Chapter 1. Even the best writers sometimes use unneeded extra words and sentences, include logically irrelevant ideas, repeat minor variations of the same statement unnecessarily, waver between different formulations of their arguments, and use inference indicators improperly. . . . Another difficulty, related to the foregoing, arises when various claims or assertions that constitute the separate reasons or conclusions of the author's argument are (so to speak) diffused over many different sentences in the discourse. (183)

The impediments to discerning structure which Thomas mentions here will certainly sound familiar to anyone who has worked extensively with real arguments, so it is unfortunate that Thomas does not have more to say about strategies for dealing with them.

In Chapter 5, Thomas presents an eleven-step procedure for treating "confused or disorganized long arguments" (259); i.e., what I call extended arguments. Thomas explains the reasoning behind his procedure this way:

> The basic idea is to work in successive steps "down from the top" and "up from the bottom" of the argument in the discourse, connecting the chains of reasoning, if possible, at the middle. The rationale behind this strategy is that authors are most likely to get the basic reasons and the final conclusions of their argument stated clearly. (239)

One can hardly fault this thinking. Unfortunately, the example Thomas has chosen to use in order to illustrate this strategy is a particularly convoluted argument dealing with Reichenbach's attempted justification of inductive reasoning. I believe students not previously exposed to the problem of induction will have enough trouble simply understanding the argument, never mind the fine-grained analysis Thomas carries out in the following 23 pages of the text. The analysis also suggests that constructing argument diagrams becomes cumbersome when dealing with longer and more intricate arguments.

These reservations aside, it appears that the real strength in Thomas's text is the careful and ingenious treatment he gives to (ii) in the framework – identifying and portraying structure. No text that I know of approaches this one for depth on this particular item. On the other items in the framework, the text is not as strong. It only scratches the surface on (i) – eliminating extraneous material. There is nothing at all about (iv) – the clarification of meaning. Thomas does have a section devoted to (iii) – supplying missing premises. But since his approach to this dovetails with his treatment of the concept of validity, it will be best if we consider it in connection with (v) – evaluation and criticism.

Thomas's remarks about evaluation and criticism do not, as we shall see, advance much beyond the conventional wisdom. Where Thomas does attempt some innovation is on the question of validity.

> This book differs from many texts in taking validity to be a matter of degree. Empirical study of undoctored examples of reasoning seems clearly to show that in different arguments, the reasons lend different degrees of support to the conclusion. At the bottom end of the spectrum come arguments whose reasons provide no support whatsoever for the drawn conclusion. (72f.)

The entire spectrum, as filled in by Thomas, has these gradations: nil, weak, very strong and deductively valid.

While this position has some plausibility, it seems to me it is not without its problems, of which I mention here only two. First, what are the ramifications of this doctrine for the traditional distinction between induction and deduction? Second, how is an argument's degree of validity to be determined? Won't this depend greatly upon the astuteness of the critic? Here is what Thomas says:

> To determine the "degree of validity" of a given argument, just assume or pretend in your imagination that all the statements given as reasons are, or were, true and then estimate or judge how likely it would be, in that case, that the given conclusion was true. (79)

But won't the determination depend upon the critic's estimate, then? I turn to Thomas's next treatment of missing premises. Here is the matrix of his position:

> Remember that there are two situations in which you may add further additional assumptions to the author's original argument: (1) If it is reasonable to think that the further assumption you add is actually assumed or would be accepted by the author and its addition raises the argument's degree of validity; (2) if you yourself know (or at least confidently believe) that the assumption is true and adding it raises the argument's degree of validity. (79)

I see two problems in Thomas's treatment of missing premises. First, there is the notorious problem of how to formulate, in words that remain faithful to the arguer's intent, that which the arguer has failed to state. Clearly, the critic must abide by The Principle of Charity (however it is to be expressed), and one wonders why Thomas does not mention that principle in this context, having already alluded to it earlier in a different context.[9] In practice, Thomas tends to fall back on the pedestrian maneuver of adding, as the requisite suppressed premise, what is required to make the argument deductively valid: i.e., a conditional whose antecedent is the conjunction of the premises and whose consequent is the conclusion. Not only is this advice some evidence of what has been called "deductive chauvinism,"[10] but it is also open to the seemingly devastating criticism that Scriven makes (1976:84) – the maneuver is pointless! Although Thomas instructs the students to use this strategy as a last resort (as a "failsafe device"), his alternative counsel ("begin with your *logical intuitions*" [147]) is potentially even more catastrophic.

Second, I for one, find it difficult to justify adding, as a suppressed premise of someone else's argument, a statement which that author might not know or believe to be true even when doing so would raise the argument's degree of validity. Criticism of an argument is one thing; reconstruction of it, something else again. But condition (2) quoted earlier seems to me to blur the distinction between them.

For these reasons, I find it difficult to accept Thomas's treatment of missing premises.

Finally, I find the text weak on (v) – evaluation and criticism. Perhaps because the text is so heavily weighted in the direction of structural analysis, Thomas has not been able to invest much imagination here. His position is this:

> After determining the structure of an argument, the next step is to evaluate how good it is. To prove its conclusion, an argument must fulfill two requirements:
>
> 1. All relevant basic reasons must be true;
> 2. The reasons must justify the conclusion. (69)

This amounts to little more than a slight rephrasing of the traditional ideal of soundness, since (1) is the truth condition and (2) turns out to be validity (in some degree or other). Thomas provides a very sketchy treatment of fallacies which omits any consideration of what is surely one of the most important of them: inconsistency. Lastly, there is no provision in Thomas's method of argument analysis which requires the student to integrate various criticisms into an ordered whole in accordance with the requirements of discrimination.

In summary, although Thomas's text is an immense improvement on Kahane's as far as the structural side of argument analysis is concerned, it lags behind on the important area of criticism and evaluation.

Reasoning, Michael Scriven (New York, McGraw-Hill, 1976)

The core of Scriven's method is a seven-step approach to the analysis of arguments, presented in a nutshell in Chapter 3 and elaborated in the remaining chapters. What we have here is the heart of a procedure which meets almost all of the requirements of the framework, as will be apparent from a listing of the steps:

1. Clarification of meaning;
2. Identification of conclusions;
3. Portrayal of structure;
4. Formulation of (unstated) assumptions;
5. Criticism of
    a. The premises (given and missing);
    b. The inferences;
6. Introduction of other relevant arguments;
7. Overall evaluation

In addition, Section 6-2 contains a good deal of useful advice about the application of this procedure to complex structured and long (i.e., extended) arguments.

The only item in the framework not incorporated into Scriven's procedure is (i) – the elimination of extraneous material. This oversight tends to be typical of informal logic texts, so that one cannot downgrade the text too much on this account, provided that it delivers the goods on the other items.

It does. Indeed, the first innovation for which *Reasoning* scored highly comes under item (ii) – display of structure. Scriven uses what he called "tree diagrams" as a vehicle for identifying and portraying the argument's structure. This method requires tagging each statement in the argument with a number (so far, it resembles Thomas's or Beardsley's argument diagrams) and then drawing lines or branches to indicate the logical

relationships between them. This method has the advantage that it only requires the student to write out the entire statement once: the initial listing in the dictionary. Another advantage is that it allows for missing premises to be introduced perspicuously: they are lettered rather than numbered, so as to mark them off from explicit statements. The net effect of these economies in representation is that long and complicated lines of argument can be laid out efficiently and without clutter. Not only that, but the use of tree diagrams makes it a much easier task to penetrate an argument's logical structure in the first place, because one is working with abbreviations rather than entire statements.

Scriven's treatment of missing premises in Section 4-9 is important, not only because it avoids most of the traps discussed earlier in the section on Thomas, but also because it brings out the importance of the Principle of Charity in the task of formulating missing premises. Scriven works through several examples in painstaking fashion to illustrate how the principle is to be applied to specific cases. Finally, instead of throwing the student back upon his or her logical intuitions, Scriven points out that formulating unstated premises is "a process of careful trial and error" (85).

All of Chapter 5 is given over to the problem of how to clarify meaning, the fulcrum of which is what Scriven terms "the contrast theory of meaning." In the course of the chapter, Scriven deals as well with topics like vagueness, precision (and fake precision), ambiguity, and definition. If his treatment of these is not the last word, at the very least it gives the students something to go on when confronting the often fuzzy and contorted uses to which language is subjected in many arguments.

The second innovation with which Scriven deserves to be credited falls under item (v) – evaluation and criticism. In Chapter 6, Scriven deals sensibly with this aspect of argument analysis and presents what is, in effect, *The Principle of Discrimination*:

> We want to be careful to produce criticism "that goes to the heart of the argument" and that succeeds in showing that it failed there, not in some peripheral way. (184)

This principle, here quite clearly formulated for (I believe) the first time, lies at the core of effective criticism. For it is much too easy for students to become embroiled in trivial points of criticism, thereby losing sight of the real target. Of course, the mere enunciation of the principle will not banish such excursions. No teacher in his or her right mind should suppose that it will. But the principle serves to provide the direction without which argument analysis so readily degenerates into nit-picking.

There are some weaknesses in *Reasoning*. Specifically, the theory of criticism is not well developed. Scriven wants to avoid fallacy theory, but it is not clear what he wishes to put in its place. And there are pedagogical problems with the text. The tone is, occasionally, almost cavalier, and its "do-it-yourself" motif will bother some students. There aren't enough illustrations of tree diagramming, and the exercises are underpopulated with challenging candidates for analysis. But, on the whole, Scriven's approach comes the closest of those considered to a satisfactory method for analyzing extended arguments.

3. Survey Summary

In this section, I shall summarize the situation in informal logic with respect to argument analysis. Having considered but three texts from the dozens now on the market, I must be careful that my summation not outrun my evidence. At the same time, I would argue that the three texts in my survey are not merely those in widest use but as well those which have received the greatest acclaim. Hence, we should be able to glean from them a composite which would portray quite accurately the current state of the art of argument analysis.

In my judgment, the most important lessons to be learned have to do with item (v) – evaluation and criticism. But I want to begin with a word or two about each of the other items.

i) *Elimination of extraneous material*

Of all the items in the framework, this is the one on which the texts in the survey faired the worst. Indeed, very few logic texts provide more than the most rudimentary guidance about how to pare away clutter from the argument.

Let me try to formulate the problem as precisely as possible. Given a passage, P, which one suspects contains an argument, it will consist of sentences $S_1 \ldots S_n$. The problem is to select from that set those which constitute the argument, A (= $P_1 \ldots P_n$ = C). In short, a transformation must take place from P to A. It cannot be purely syntactic in character, for it must accomplish, *inter alia*, the following:

a. Strip the passage of extraneous material;
b. Eliminate purely rhetorical devices;
c. Delete purely informational points;
d. Where necessary, rephrase over indexical expressions;
e. Where necessary, reformulate statements to bring out their meaning and/or bring on the issue.

Since almost all real arguments contain clutter, such transformations are an important step in argument analysis.

For example, the decision whether to include S_n, for example, or not will quite possibly have an important bearing on one's evaluation. While it is true to say that a sense of relevance and argument structure will be key factors in the decision, it is also true that there is a crying need for some theoretical guidance here and illustrations of how to pare away clutter need to be provided in the early stages of argument analysis in far greater number than is the case with the current crop of texts.

And still other problems emerge when we bring into play, as it seems we must, the Principle of Charity at this level. As applied here, the principle requires that we provide the passage under consideration with the most favourable interpretation. Suppose, then, that some subset of the sentences ($S_i \ldots S_k$) seems hardly relevant to the argument. If that subset contains flagrant errors in reasoning, the Principle of Charity seems to dictate that the subset be considered extraneous. On the other hand, if that subset is tightly reasoned, then the principle seems to urge its inclusion. But I have to ask: Is this charity, or does it amount to instituting some logical form of the welfare system?

ii) *Display of structure*

Our selection of texts showed best on this item. That is a hopeful sign, because the need to identify and portray structure is a crucial preliminary to intelligent criticism. For the sake of expedience, I have in these considerations conflated two different tasks which, in the long run, may require to be dealt with individually. That is, a procedure that is fruitful in helping to identify the argument's structure may well not be so helpful in displaying that structure.

Of the methods considered, Scriven's tree diagrams seem to be the best for the task of *identifying* the structure, while the method of standardization developed by Johnson and Blair seems to be the best for *displaying* it. (Thomas's argument diagrams come off second best on both counts, but his text outshines all others in dealing with problems of structure.

It is perhaps worth pointing out that all the methods examined in this survey (with the exception of Kahane's, which barely touches the problem of structure at all) were developed with any eye to short passages, or snippets. But what works well for micro-structure may not prove as fruitful for detecting macro-structure. In any event, one wonders whether informal logicians cannot be at least as ingenious as their confreres in formal logic have been. Think, for example, of the number of different methods developed for the presentation of propositional logic: axiomatic systems, natural deduction systems, truth-tables; truth-trees; etc. Is there any reason to think that informal logicians would be any less imaginative if they were to apply themselves to some of the problems of identifying and displaying structure which confront our enterprise?

iii) *Supplying missing premises.*

This crucial step in argument analysis has yet to receive the attention it deserves from authors of informal logic texts. We are wrong, I suspect, to hope for anything like a decision procedure to help us in the identification and formulation of unstated or suppressed elements. So I suspect that Scriven is correct in referring to this as "what is probably the hardest aspect of argument analysis" (1976:81), and on target again in stating that "imagination and originality are often required in this basic part of the critical process" (85). But, as I'm sure Scriven would allow, this last statement is not terribly helpful.

One of the contrasts that emerged in the review was that between what I would call the "liberal approach" (represented by Thomas) and the "conservative" approach (represented by Scriven). I suspect this difference stems from deeper differences about the purpose of argument analysis. The liberal approach emphasized argument as a *product* whose purpose is to help the human community arrive at the truth of the matter. Hence in criticizing an argument, one is justified in making changes (i.e., adding as a missing premise a statement which the arguer might not know or believe to be true) so long as those changes improve the argument and thereby its potential to arrive at the truth. The conservative approach, on the other hand, stresses argument as the *performance* of an individual arguer. Hence in criticizing the argument, one is obliged to remain within the orbit of the arguer's beliefs so that the criticisms will throw light on the arguer's logical mistakes, thereby increasing the chances of a better performance by the arguer the next time out.

Whichever approach one sides with, an important issue that needs to be clarified is the notion of strength. That is, one should add as a missing premise the weakest possible

candidate that will fill in the gap. So far, we have merely stated the Principle of Charity for this level of analysis. We encounter problems when we apply the principle to specific instances. An example that Scriven uses is this: "She's a redhead, so she's probably quick tempered." After discussing several candidates, Scriven finally formulates the missing premise in this way: "Most redheaded women are quick tempered." (1976:82). Yet to insert this as the requisite missing premise creates a problem. For it would be a far more difficult statement to defend and is, I believe, intuitively less plausible than a stronger candidate: "Most redheads are quick tempered." Although this claim has wider scope than Scriven's (and is therefore in some sense stronger), it would be easier to defend (and is therefore in some sense weaker). Perhaps all this shows is that the notion of strength implicit in the Principle of Charity is not univocal. But the job of exploring the consequences of this apparent quandary remains an important task for those teaching informal logic.

iv) *Clarifying meaning*

Some may believe that this step in argument analysis really belongs to the evaluation. That may be true. My point is just that it is a task which belongs somewhere on the agenda in a course that aims to equip students to evaluate real arguments.

It may serve my purpose if I mention an experience I have had teaching informal logic for the last nine years. Each year, I give my students as an exercise – an argument whose conclusion, roughly speaking, is that we should not require cats to be licensed. One of the premises is the proposition: "You can no more license cats that you can license the wind." Most of my students fall for this trap; they pounce on this statement without ever asking themselves what it means, and so wind up making silly criticisms of this sort: "The arguer is guilty of a faulty analogy here, because people do own cats, but no one can own the wind." They lapse into such inanity because they don't know enough about how to clarify meanings. They fail to see that the statement in question is merely an emphatic way of making the claim that cats cannot be licensed. They need to become sensitive to questions of language and meaning. In the old day, when an introductory logic text tried to do everything, one always found a chapter on language and meaning. More recently, informal logic texts have all but abandoned this topic. Of the texts in the survey, only Scriven's provides anything approaching a satisfactory treatment of this item.

v) *Evaluation and criticism.*

Earlier remarks about the amount of work remaining to be done on the other items notwithstanding, it seems to me that the most crying need in argument analysis lies here, where one might least expect it. Perhaps I can make the point by saying that what is needed most is a theory of criticism. The other steps in argument analysis are means to the end of evaluation, and one would think therefore that evaluation would be the most fully developed aspect of argument analysis. But this is not so.

We know well enough, or think that we do, what goes into evaluating an argument from the formal perspective. The principal question to be asked, depending upon what sort of argument one is facing, is either: "Is the argument valid?" or "Do the premises provide strong support for the conclusion?"

Now if informal logic is to be an autonomous branch of logic, it would seem to follow that it must have its own distinctive norms to bring to bear on the evaluation of arguments. But what are they? Fallacy theory offers one possible answer, for the occurrence of a fallacy

in an argument is certainly a logical flaw. And fallacy theory has customarily been reckoned as part of informal logic. On the other hand, Scriven and others have attempted to present theories of evaluation that avoid fallacy theory. Yet the outlines are blurry. Scriven calls for the evaluation of the inferences and premises. The former would seem to lie within the sphere of formal logic; the latter is insufficiently developed in Scriven's text. Precisely what sorts of criticisms of the premises is one to make, within the orbit of logic?

This is an important theoretical problem to which informal logicians must address themselves. Until this problem, and others related to it, have been resolved, I suspect we shall not make much progress toward the development of a robust theory of criticism.

Still, some progress is evident. The most significant development has been the articulation of the Principle of Discrimination by Scriven in *Reasoning*. The other texts in the survey showed insufficient awareness of this fundamental principle of criticism, however.

At this point, I tender some suggestions of my own. To develop an adequate theory of criticism in informal logic, we need to consider the following points.

First, in any extended argument, there will probably be several lines of thought (or branches) that lead, whether congruently or independently, to the conclusion. Effective criticism requires that one be able to distinguish between stronger and weaker branches in order that the evaluation and criticism be directed, in the first instance, to the stronger. How shall such discriminations be made?

I make two suggestions: (1) A branch of argument is strong (in one sense) if the arguer devotes significant space to its development. That is, a branch of argument which the arguer spends three paragraphs developing is, *in some sense*, stronger than one to which only one paragraph is devoted. I say "stronger" because that branch is one which the arguer appears to think is more crucial to the success of the argument, and also because if one locates a flaw there, a significant part of the original argument must either be discarded or revised over the criticism. (2) A branch of argument is strong, *in some other sense*, if it alone is adequate to establish the conclusion. Thomas calls these *convergent* arguments. On the other hand some branches require reinforcement by others. Thomas refers to them as *linked* arguments. Of course, very long arguments may contain both sorts in different regions. My suggestion is that criticism focus, in the first instance, on the convergent arguments, for the branches here are stronger. Criticism of them would seem more fruitful.

However the strength of the premises is to be determined, I do believe that the critic has the task of establishing a *hierarchy of premises*, ordering them from strong to weak. Once the hierarchy has been established, the Principle of Discrimination urges that criticism be directed in the first instance to the premises at the top, where the most significant targets will be found.

Second, not all criticisms are of equal rank. I can illustrate this point best in fallacy theory. An argument guilty of the fallacy of irrelevant reason (*non sequitur*) is more grievously flawed than one which commits the fallacy of hasty conclusion. For if a given premise is indeed irrelevant, then the arguer will be forced to discard it, whereas if the premises are merely insufficient to support the conclusion, the arguer can supplement them with additional evidence. I would expect the same thing to apply in other theories of

evaluation. Hence, effective evaluation requires the critic to develop a sense for the relative strength of the various modalities of criticism of an argument.

Third, once the hierarchy of premises has been constructed and the various flaws in the argument have been identified, discrimination requires that the criticisms be ordered from most serious to least. If, for example, one finds a significant logical flaw in the strongest branch of the argument, the combination spells a serious criticism. On the other hand, a slight flaw discovered in a weak branch may not even be worthy of mention. Thus, instead of simply listing seriatim one's various findings against the argument, one offers a more cogent and forceful critique if one proceeds in this fashion: "The most serious criticism to be levelled against this argument is . . ." And so on down the line. In this way, the critic upholds the responsibility to product enlightened logical analysis as against random comment or undeveloped interpolation.

Finally, the critic should conclude the analysis with an overall judgment. These words of Scriven's (1976:186) are worth quoting:

> . . . we need to "weigh up" all these considerations. That means we have to decide, and have good reasons for deciding, how much is left after the demolition work is finished and what it's worth. Why do we have to make such decisions? Why can't we just leave the list of established criticisms and refuted criticisms as they lie? Simply because we're going to have to perform actions on the basis of this argument; risk our money on the basis of this other argument; risk our reputation on the basis of yet other arguments. When these things are at stake, you have to decide whether to go with the argument on balance, or against it. Merely listing pros and cons doesn't get you to "the bottom line," the real payoff.

Whether these suggestions are fruitful or not, it seems evident that informal logicians face a number of challenges, pre-eminent among which is the development of a robust theory of criticism.

4. Concluding Thoughts

We are still in the very early stages of the theory of argument analysis, and it may be profitable to conclude by wondering why. The reasons are not, I think, difficult to grasp. I will begin by citing two, both of which may be seen as outgrowths of a third.

First, traditional logicians tended to see the ideal standard by which arguments were to be judged as *soundness*: true premises and valid form. Thus it was the task of formal logic (indeed, *the* business of logic, in the minds of most) to develop an inventory of valid argument forms and to show why they were valid. The imposing edifice known as formal logic came into existence partly on this premise. The most important thing to know about an argument's structure was whether or not it was an instance of a valid pattern. The structure of an argument thus became identified with its logical form. There is, of course, much more to know about the structure of an argument than whether it is an instance of *modus tollens* or *hypothetical syllogism*.[11] Tree diagrams, for example, display another, and for our purposes more important, aspect of structure.

The ideal of soundness had another unfortunate consequence, for it appears to have convinced logicians that they had nothing *qua* logicians to say about the premises. The only question that needed to be asked was "Are the premises true?" and the answer to that took one outside the province of logic. But is that all there is to be asked about the premises? Can we not, remaining within the orbit of logic, say something more about what is logically required of the premises of a good argument? I think we can. We can say, for example, that the premises ought to be reasonable beliefs, and then try to articulate the notion of reasonable belief. We can say that in certain situations it is a logical flaw not to have defended one's premise, though this cannot always be the case. We can introduce the student to the difference between a normative claim and a factual one and say something about the different methods of authenticating each sort. We can drive home the insight that not every factual sounding premise is such. Students need to learn that, and also how to conduct elementary research in the library. Who will drive these points home if we do not? Yet, if we persist in the delusion that the only thing logic can do is lay down the requirement that the premises be true and say nothing further, then what wonder is it that so little imaginative work has been done on this task of evaluating an argument's premises?

The present state of poverty in our discipline is partly the result of the mesmerizing effects of the ideal of soundness. But let me speak candidly. It's certainly desirable that an argument have true premises and valid form. I just happen to believe that confronting the editorial in tonight's paper with that ideal in mind (even granting the greatest skill in translating the argument into the symbolism of formal logic so that the apparatus can be put to work) is not going to yield enlightening criticism.

There is a second reason for our poverty. We do not yet possess an adequate theory of argument. Unless, that is, one conceives of an argument as do authors of informal logic texts: a set of statements (*sans* clutter) among which certain inference relationships supposedly obtain. It may be true that there are in the real world of arguments such domesticated little creatures. Anyone who has worked at all with arguments in their real setting knows that there are a great many ornery beasts whose logical structure and behavior is much more complicated. We need to know their taxonomy if we are to have any hope of taming them. As our concept of argument broadens to include them, the need for a more adequate theory of argument becomes ever more pressing.

Developments in the art of argument analysis have indeed taken place, mostly in textbooks and mostly underfunded by theory. Our situation is just the reverse of that in formal logic, where important developments in theory are found first in journals and monographs and later incorporated into the textbooks. In informal logic, important theoretical developments have, by default, had to occur in texts. There has been no other forum. Again, formal logic is overendowed with theory, and the question is what to do with all of it, how to make use of it. Informal logic is underfunded by theory. There are numerous tasks which need to be confronted. We must now begin in earnest to develop the theoretical equipment which will guide us toward their realization.

By now the reader will have begun to notice the shape of the fabric whose dialectical threads I have been weaving in these last few pages. Both reasons cited to explain the poverty of our craft – the ideal of soundness and the lack of a theory of argument – are themselves outgrowths of a third: the domination of logic by formal logic.

Logicians, as a breed, are not markedly different from other teachers. We teach as we were taught – at least until experience forces us to change. Most of us were taught in

graduate school the elements of formal logic. When we found ourselves in front of a classroom full of students, we did what we had been trained to do. For reasons too numerous to mention here, it didn't work. It didn't satisfy. I suspect that this recognition laid the groundwork for the recent development of informal logic. Now the time has come for us, for informal logicians and teachers of the subject – not to repudiate formal logic: that would be silly and indeed impossible; but to begin to look with clear minds (unsaddled with the predispositions and preconceptions of formal logic) at the whole issue of the logical evaluation of arguments.

All of this activity falls under the rubric of breaking the spell cast by formal logic, freeing ourselves from bondage to it, and helping informal logic along into the mainstream of logical inquiry. I am convinced that we will all be better off as a result: our students, our colleagues, the general public. So also, I am brazen enough to suggest, will philosophy itself.

Notes

1. This chapter originated as a paper selected for presentation at the program on "The New Logic Course" by the Western Conference on Teaching Philosophy, American Philosophical Association Western Division meetings, Milwaukee, Wisconsin, April 23-25, 1981. An earlier version was delivered at the Workshop on Informal Logic at the 3rd National Workshop Conference on Teaching Philosophy at the University of Toledo, August 13-15, 1980. I am indebted to those in attendance for the comments and encouragement, and also to my colleague, J. Anthony Blair (University of Windsor) and to Trudy Govier (Trent University), both of whom read it with care and made valuable comments.

2. See above pp. 18-30 and Johnson and Blair 1980a: 168-171.

3. Robert Binkley, "Can the Ability to Reason Well be Taught?" in Blair and Johnson (1980: 70-91).

4. In this connection, I recommend the reader consult the *Informal Logic Newsletter* 2(3): 16-18 (1980) for a description of the BASK program at St. Lawrence University, developed by Professor Bailor Johnson.

5. I will not expand here on the intriguing problems involved in the method of comparative analysis. The tip of the iceberg is this: Either the comparison is carried out by one individual (in which case, there is a possible skewing factor in the order in which the methods are taken) or by two different individuals (in which case, there is a possible skewing factor in the different levels of talent and perception). There are, I believe, at least partial solutions to this dilemma, but I shall leave the matter here.

6. This is not to claim that earlier authors, Beardsley for example, were completely unaware of extended arguments. But Kahane was the first, so far as I am aware, to

feature the analysis of them as an important topic deserving of special consideration.

7. In point of fact, the actual situation is rather more complicated than I have indicated. Kahane's practice comes much closer, in some instances, to what I have been suggesting than his own description of it might lead one to think. Look, for example, at his analysis of the Buchanan column (151-55). Here Kahane does make at least a passing attempt to portray the structure (153) and does present an overall judgment (155).

8. In the second edition of his text (1981), Thomas has changed his position on validity and missing premises. My comments apply to the first edition (1973).

9. Thomas discusses the role of the Principle of Charity in deciding whether or not a passage should be construed as an argument at 1973:9.

10. I first heard this term used by Merilee Salmon (University of Arizona), during a panel discussion at the Conference on Logic and Liberal Learning at Carnegie-Mellon University, June 11-13, 1979. See *Informal Logic Newsletter* 2 (1): 10 (1979).

11. Assuming that there is such a thing as "*the* structure" or "*the* form" of an argument. For a considered view of this matter, one should consult Massey (1975).

II. Informal Logic and Argumentation

Chapter Four

Logic Naturalized: Recovering A Tradition

1. Introduction

This chapter is about logic, inference and argument – matters of interest mainly to logicians.[1] In particular, my remarks are addressed to those who belong (however tenuously) to the tradition of Formal Deductive Logic (FDL) – a tradition I shall have sufficient occasion to refer to as to warrant a name of its own.[2]

In this tradition, the following specimens get counted as arguments:

Boston is a city and Boston is in the United States.
Therefore, Boston is in the United States

(Lambert and Ulrich 1980: 11)

The sky is blue.
Grass is green.
Therefore, tigers are carnivorous.

(Lambert and Ulrich 1980: 19)

The purpose of this chapter is threefold. First, I wish to challenge that conception of logic and argument at work in FDL. Second, I wish to speculate as to how our conceptions of logic, inference and argumentation underwent such radical transformation. Third, I want to suggest that logic must be naturalized. I have in mind a couple of things: first, that logic should take argumentation in natural language as its focal point; and second, that logic should be natural, both in its approach – it should as much as possible use natural language rather than artificial language – and its purpose: it should help increase the capacity to reason better, which is what people naturally expect.[3]

I shall begin by introducing a pair of theses, the first of which is that inference is not argument.[4] Yet the identification of argument with inference has become commonplace in logic textbooks, especially (but not exclusively) those which belong to the tradition of formal, deductive logic. My second point is related to the first. It is that logic is not equivalent to deductive logic. *A fortiori* is not equivalent to FDL.

2. Argument is not Inference

The conception of argument found in most FDL textbooks will resemble one of two prototypes. Either argument is defined as a set of reasons leading to a conclusion, or else argument will be identified with inference, for all practical purposes.

Let us take the first prong, evident in the example already cited from Lambert and Ulrich: "Boston is a city and Boston is in the United States," "Those who know" will recognize this as a substitution instance of tautology (p · q; therefore p) and hence as a valid inference. And yet to term this an argument is something that would probably not occur to anyone who had not been raised on FDL.

What then is wrong with taking argument and inference to be identical? If the practice of argumentation presupposes, as I believe it does, a claim which is contentious,[5] then in order for this item of discourse to qualify as an argument, the claim that Boston is in the United States would have to be contentious. Is it? I don't think so, at least not where I come from. And if it were to become contentious, it could scarcely occur to a reasonable individual to seek to support this assertion in this way. Put differently, anyone who really does not believe that Boston is in the United States is not likely to be persuaded rationally to accept that claim by the Lambert-Ulrich specimen.

The example above is no argument. Perhaps we shall call it an inference. From the fact that two propositions are together true, it follows with necessity that one may affirm either one of them to be true. Thus one might find it appropriate to reason this way: "The couple was on the bus, then clearly the husband was on the bus." Now inferences are very important, and certainly logic has something to do with inferences; that is part of its tradition going back to Aristotle and the *Prior Analytics*. But let us not forget that Aristotle wrote no work entitled Logic; and that the entire corpus of methodology oriented works is known as *The Organon*, and that this corpus includes besides the *Prior Analytics* (the ancestor to FDL) much else, including the *Topics*, *Sophisticated Refutations,* etc. In these works, it is argumentation[6] rather than inference which is the focus. Thus, if we look to tradition, we shall have abundant evidence to support the view that logic is about inference, and also that logic is about argument.

Let us then look at the other prong of the FDL conception, according to which an argument is a set of reasons leading to a conclusion. What is wrong with this? A lot, for it is not sufficient for an argument that there be reasons leading to a conclusion.[7] That which is argued about must be controversial, contentious, really in doubt; and for this to occur, there must be contrary views. One purpose of argument is to persuade the rational individual of the truth of the conclusion using evidence and reasoning only.[8] Thus an argument must not only lay out a route to the conclusion, but it must also in some fashion or another come to grips dialectically with its competitors by showing that its path is superior. To ignore other arguments by merely advancing a few reasons that support the conclusion is to fail to take seriously the ethos and the climate which gives argumentation its *Raison d'être* and in which alone it can flourish.

Hence there is some reason to think that the FDL conception is inadequate, whether argument is either identified with inference or conceived of as a set of reasons leading to a conclusion. This claim leads now to the next point.

3. Logic is not Equivalent to Formal, Deductive Logic (FDL)

There are many who still think it is. (That is how they were trained.) Alvin Goldman is one: "I shall concentrate on deductive logic. I shall accept the contention that deductive logic – formal logic – is a body of necessary truths" (1985: 41). In other words, in Goldman's view, deductive logic just is formal logic. Only a few lines earlier Goldman has dispatched inductive logic: "It is very controversial whether there is such a thing as inductive logic," and so, unless there is some other logic, the conclusion follows that logic is deductive logic. What about informal logic? In a footnote, Goldman states:

> The term "logic" is also used to refer to a subject called "informal logic" often taught to introductory logic students. Unfortunately there are no established truths in informal logic; indeed, it is quite unclear what the content of informal logic is, or should be. By contrast, formal logic has a well-defined content and set of truths. (1985: 65)

Notice how logic has here been narrowed to include nothing more than FDL. Goldman is not alone in holding this view; he is simply more forthright and explicit than most. But once again if we look back into its history, we will find that other generations have had a much broader conception of logic than that of a body of necessary truths. For example, the task of definition of terms has traditionally been taken to be part of the business of logic, but where is that on Goldman's account? Less than 100 years ago, Peirce (no mean logician in anyone's sense of the term!) could write: "The very first lesson that we have a right to demand that logic should teach us is how to make our ideas clear" (1878: 64). Dewey wrote at great length about the logic in inquiry. Yet one suspects that neither of these would be mentioned in Goldman's canon. How did logic get reconceptualized so as to refer uniquely to FDL?

What has happened here is that one particular paradigm has seized the imagination of logicians and blinded them. This is the sort of thing I believe Wittgenstein had in mind when he wrote:

> The only way for us to guard our assertions against distortion . . . is to have a clear view in our reflections of what the ideal is, namely an object of comparison – a yardstick, as it were – instead of making a prejudice out of it to which everything has to conform. For this is what produces the dogmatism into which philosophy so easily degenerates. (1980: 26e)

By equating logic with FDL and by identifying inference with argument (or failing to note the distinction between them), FDL was able to present the ideal of logic as a body of necessary truths, the hardest form of science. Yet in doing this, logic was cut off from important parts of its historical development.

Let me then proceed in the hope that these two points are acceptable, so that now it may be profitable for us to think about this question: where and when did this re-orientation occur?

4. Where did we go Wrong: Lessons from the Past?

Just as it is sometimes said that all philosophy is a footnote to Plato, it may be thought that all modern logic is a footnote to Frege. At any rate, all trails inevitably lead there, and so our search might well begin there also. Frege was not in the least interested in argumentation. What interested him was rigorous proof. Shocked by the shoddiness of much of mathematical reasoning of this time, he set about to reform it. Thus mathematical logic developed under the guidance of Frege, Russell and Whitehead, whose project called for demonstrations of syntactic transformations within logistic systems, ultimately with a view to showing that mathematics was reducible to logic. They constructed artificial languages for this purpose. Let me make it clear that I regard these developments as most interesting and worthy of study. What I wish to question is the right of these initiatives to usurp the title "logic."

But where does this usurpation occur? It does not occur in Russell and Whitehead (1927) which was a technical working out of the logicist program in the foundations of mathematics. Nor does it occur in Frege (1879). Then where? Where does the trail lead next? Where can we pick up the scent?

My thought is that we should look to the textbooks, where students learned their logic lessons. To check this conjecture, I looked at some North American undergraduate logic textbooks from the late 40s and 50s. I began with Quine. Do you know what I found? The term "argument" is conspicuous by its absence in Quine's two logic texts (1940 and 1950). Actually, the term "Argument" makes one appearance: "In the usual terminology, z'x is the value of the function z for the argument x . . ." (1940: 222). In this tradition of logic, emanating from Frege, Russell and Whitehead, the entire concept of argument as rational persuasion has evaporated. True, Quine would not claim to be analyzing arguments. He does however claim to be doing logic – and that is, from the point of view of this chapter, the amazing finesse: logic without argument. Think about that!

In a different vein, I looked at Max Black's *Critical Thinking.* Here we find a much different approach to logic, one in which, you will be happy to hear, the idea of argument is included. Alas, Black makes the mistake, not uncommon, of equating argument with inference. Thus he writes:

> An inference that purports to be conclusive is said to be deductive, and such an inference is known as deduction.
> Our first task is to discover the kinds of things out of which a deductive argument is constructed.
> Let us consider a concrete example:
> Whales are mammals.
> All mammals suckle their young.
> Therefore: Whales suckle their young.
> This very simple example illustrates certain important features common to all argument. (1946: 17)

The lessons Black draws from this example are the typical ones. An argument is disclosure with a certain structural complexity, and at the core of argument lies the proposition. Thus

begins the inevitable (and quite useless) excursus on the difference between sentences and propositions!

Now notice, if you will, the lessons which have not been culled from this example (because they could not be). First, no reference is found to argument as an essay in rational persuasion. No mention is made of the purpose. Apparently, final causes may play no role in logic as a science, any more than in any other scientific endeavor. But here, as elsewhere, structure often follows function/purpose. That is to say, argumentation has the structure that it does because of its purpose. An argument seeks to bring about rational assent, and because the issue to be dealt with is contentious, controversial, it follows that one must provide reasons! Mere assertion can't get the job done rationally. Hence we find that the purpose of argument as rational persuasion dictates the infrastructure of argument: premises and conclusion.

Yet this is just the ground floor. Precisely because the proposition is contentious, because there are contending parties who have taken a different view on things, it follows that the argumentation cannot be complete until and unless the argument addresses itself not only to the issue as represented in the conclusion but also to the other positions. (This is the insight which many of our confreres in the discipline of rhetoric take for granted.) In short, an argument cannot be conceived merely as a set of reasons leading to a conclusion; this may be the infrastructure but this cannot be the full story. The arguer must also address himself to the opposing points of view and show why his is superior. To fail to do this is to fail to discharge a fundamental obligation of the arguer in the dialectical situation.

I continued my search in Beardsley's *Practical Logic*. Here is Beardsley on argument: it is "discourse that contains at least two statements, one of which is asserted to be a reason for the other" (1950: 9). This is marginally better. Argument is treated as a form of discourse, and Beardsley's examples are infinitely closer to the real thing. Yet there is some indecision and confusion, as we later read: "We can be sure that an argument is good if we can justify its conclusion according to a rule of inference" (16). Witness once again the easy passage between argument and inference. How about Beardsley's logic? He doesn't declare his position explicitly, but we can perhaps glean it from a passage like the following: "When an argument is valid, its premises are said to 'imply' (or 'entail') the conclusion. The relationship of implication is a fundamental ideal in deductive logic" (1950: 213). Not a smoking gun, but close to the idea that logic is bound up with implication and entailment. The easy shift between inference and argument is evident again a few lines later: "When we are presented with a deductive argument and we want to know whether it is valid, we have to recognize its form" (213). So Beardsley has not avoided the confusions that have plagued others.

Of course no survey of undergraduate logic texts would have been complete without a look at the classic – Copi's *Introduction to Logic*. In the second edition, Copi says: "The study of logic is the study of the methods and principles used in distinguishing correct from incorrect reasoning" (1961: 3). You might wonder how we are going to get from there to the dogma whose development we have been tracing. Copi makes the missing link explicit "Reasoning is a special kind of thinking, in which inference takes place or in which conclusions are drawn from premises" (1961:5) So logic is about reasoning, and reasoning is either inference or argument. But what is the distinction between argument and inference?

> Although the process is not of interest to logicians, corresponding to every possible inference is an argument and it is with these arguments that logic is chiefly concerned. An argument, in this sense, is any group of propositions of which one is claimed to follow from the others, which are regarded as providing evidence for the truth of that one (1961: 7)

Thus the difference between inference and argument is slight; inference is the process and argument is the result, the product.

From this early tradition of logic texts, we can begin to pick up the trail and see where the shifts began. (I realize that there is an ellipsis in my account: I have shown where the shift takes place but I have not said why.) What of the newer generation of logical textbooks? Have they a better account to offer?

5. The Concept of Argument in New Wave Texts

Johnson and Blair (1980: 13) dubbed those textbooks "New Wave" which took seriously argumentation in ordinary language. The question which I took to is whether that generation of textbooks has provided a more adequate conception of argument. I have space only to sample a few leading texts.

Let us then look first at the textbook which helped to launch the informal logic movement in North America: Howard Kahane's *Logic and Contemporary Rhetoric*. In the first edition, Kahane writes: "Let's call uses of language or pictures intended to persuade anyone of anything an argument" (1970: 1). A somewhat different account is provide in the third edition: "Reasoning can be cast into the form of arguments. An argument is just one or more sentences, called the premise of an argument, offered in support of another sentence, called the conclusion" (1980: 3). Much the same view is found in Stephen Thomas's textbook: "As I shall use the term, an argument is a sentence or sequence of sentences containing statements some of which are set forth as supporting, making probable or explaining others. That is, an 'argument' is a discourse in which certain claims or alleged facts are given as justification or explanation for others" (1973: 2). Without wishing to deny that there may be important differences between the two, nevertheless from our vantage point they are alike in that the kernel of the idea (reasons supporting conclusion) is all that is offered. No mention of content, of purpose, or structure resulting from purpose, of the need to engage dialectically with alternative positions.

Fogelin (first edition) does not fare any better. Though he does not give us an extreme close up on the idea of argument, yet it is clear from his discussion that he takes argument in the sense of reasons offered in support of a conclusion (1978: 35). Johnson and Blair also adopt this view (1977: 3f). Thus informal logic textbooks offer the reader an anemic conception of argument, one which does not differ markedly from that which appears (when it does appear) in other standard introductory logic textbooks, such as Copi; nor indeed from those on the FDL tradition.

The one exception to this pattern in the first wave of the "New Wave" texts is Scriven's. Although Scriven's conception of argument has to be culled from a careful reading of several chapters, and although its main lines seem to resemble those we have

looked at, one can sense just below the surface that Scriven has come closer than any of the "New Wave" texts in breaking free of constraints of the FDL tradition. Thus Scriven locates his discussion of argument within a broader context of reasoning; he distinguishes between argument and inference, even though the distinction is not fully satisfying; and makes implicit reference to the function/purpose of argument. Moreover, the sixth of his seven steps requires that one evaluate alternative arguments, and this comes very close to our idea that the very essence of an argument requires that one should do this (1976: 54ff). All in all, one would have to say that all of the elements of a fully developed conception of argument are here; they simply need to be developed more.

Scriven excepted, it seems that on the whole informal logicians have not yet been converted to a more robust conception of argument. For nurture, they might then find it profitable to look outside their own garden walls.

6. What We Can Learn from Others: The View from Afar

Those who have worked in this new tradition of logic may discover, as I did, some evidence about the force of such blinders by consulting a different tradition, for example *Speech Acts in Argumentative Discussions* by van Eemeren and Grootendorst. In their first chapter, they lay out their conception of argumentation under four headings.

The first feature in their account is the externalization of argumentation: by which they mean "the verbal communication of the subject to be investigated" (1984: 6). The argumentation theorist must therefore concern himself with the opinions and statements as expressed rather than with the thoughts, ideas and motives which may underlie them.

The second feature in their account is the socialization of argumentation, by which they mean treating the subject of investigation communicatively and interactionally (1984: 9). Argumentation is an attempt to persuade a rational judge of the rightness of a particular claim and this involves dialogue and exchange. Thus it is that the idea of dialogue emerges as central in their account.

Lastly, they stress what they call the dialectification of argumentation. Whether attempting to defend an opinion or to criticize someone else's, the language user addresses another language user who is supposed to adopt the position as a rational judge, who reacts to argumentation critically, so that a critical discussion ensues.

When I first read their monograph, I had two simultaneous reactions. The first reaction was: "How perfectly right they are." This was followed by a wave of despair, for it seemed to me that they have said about the concept of argumentation just about all that I wanted to say. Which left me with the uncomfortable question: what do you say after someone else has already said it? My dilemma was resolved and my despair eased when I reminded myself that van Eemeren and Grootendorst have had the good fortune of not having been educated in the narrow tradition of logic that has dominated instruction in North America. That tradition, stemming from Frege and then Whitehead and Russell, has many strengths. The time has come to have a close look at the other side of the ledger; so as to see clearly not only what was gained but also what was lost.

7. Conclusion

I have dwelt on the conception of argument in both the older and the more recent logical traditions and found very little difference between them (when, that is, the older tradition had a conception of argument in sight at all). I have also attempted to delineate a more adequate concept of argument, one which is familiar to other disciplines such as rhetoric and speech communication.

Now someone is sure to confront me with James's dictum: "A difference which makes no difference is no difference." Behind this dictum lies the following challenge to which I owe some response: "What differences does it make in actual practice whether one adopts the older desiccated notion of argument (premises and conclusions) or the more robust one you are defending?"

I do not have yet a satisfactory answer to the question, but let me make three brief observations by way of conclusion.

First, it seems to me more important to get it right! I am unhappy with the accounts given by logicians and I have tried to make plain the basis of my objection.

Second, I wonder about the wisdom of giving students an undernourished conception of argument in these times when the practice of argumentation is very much threatened by powerful cultural forces, such as television.

Third, in following the moves of Frege and company, logic allied itself with science. The alliance has been important but costly here as elsewhere in philosophy. And just as the alliance is being challenged elsewhere (by MacIntyre in ethics, by Feyerabend and Kuhn in philosophy of science, etc.), so the challenge should be extended here. Logic took a bad turn when it allied itself with science (especially with mathematics) and divorced itself from the humanities. Argument construed merely as reasons to a conclusion without clear reference to the demands of dialectical interchanges ceases to be the powerful instrument it might otherwise be.

My contention is that the naturalization of logic is the next important task confronting us. Central to this development will be the reconceptualization of argument so that its dialectical nature is fully appreciated. In this process, logicians have something to learn from other disciplines, among them rhetoric and speech communication. It has been my purpose here to make the need for that transition more evident and its importance intelligible.

Notes

1. Since delivering this as a paper at the 1986 Amsterdam Conference on Argumentation, my thinking has benefitted from discussions and correspondence with the following people: Timo Airaksinen, E.M. Barth, J. Anthony Blair, Trudy Govier, Erik C.W. Krabbe, Richard Paul, Perry Weddle and John Woods. I am grateful to all of them for their comments and criticisms. I wish that this revised version

could have shown more clearly than it does how much I have learned from their patient instruction.

2. I am grateful to Erik C.W. Krabbe for reminding me that the crucial terms here, "formal," "deductive" and "logic" have all undergone significant shifts in meaning during their history.

3. My views on these matters may remind some of those taken by Barth (1985). She writes:

> Dialogue logic embedded in a wider theory of argumentation ought, in due time, to bring about an improvement of the systems of logic that actually dominate the modes of reasoning and argumentation in human affairs. For this purpose we shall have to develop a techne that has more to offer than applications of mathematical logic to Mary and Bill. (377)

   I must admit that my heart went boom when I read this. And even though I am not yet persuaded to follow Barth in her proposals regarding dialogical logic, I believe her work should be read carefully by all who are concerned for the future of logic

4. I have been persuaded by discussions and correspondence with both Trudy Govier and John Woods that it is an implication rather than inference which is the subject of formal, deductive logic. But I believe my point is easily enough recast and will ask the reader to bear this change in mind in reading this chapter.

5. Trudy Govier points out, and rightly so, that I have not argued for this claim and that some argumentation really should be provided (I suppose because my claim is controversial!). For one possible way of dealing with this point, see note 8 below.

6. Though I have not made a great effort to distinguish between argumentation – a social practice whose history can be traced back to the Greeks – and argument – an episode or specific event located in that practice. The terms have thus been used interchangeably.

7. Richard Paul and Tony Blair both have urged me to weaken this claim and instead of attempting to redefine "argument," they believe I should rather take the position that what I am speaking about is one very important and often overlooked sense of the term "argument." On reflection, I'm inclined to agree.

8. In an earlier version, I had written "the" instead of "one." But I am now persuaded that this is too strong. Argumentation can also be used to inquire into the truth of something, as my colleague, Anthony Blair has brought home to me. What I think I now want to claim is that *when argument is used persuasively*, the conclusion will be controversial; and for it to be used properly in that context, argument must include some reference to other views or positions. Also Timo Airaksinen questions the use of "only" here.

Chapter Five

Argumentation as Dialectical

1. Introduction

What we are about to recount is in part the story of the intellectual journey we found ourselves taking in our efforts to mediate between our own training in logic and our attempts as teachers to equip our students with a logic that would become permanently stored in their intellectual survival kits. By casting our account in personal rather than objective terms, we indicate we are not trying to write history, but we have reason to believe – from our reading, and from conversations with colleagues in the wee hours after conferences and colloquia – that our experience has been shared by many others, even if their stories will contain different chapters or they order their chapters in a somewhat different sequence.

The account we give here is retrospective. We have come to see in hindsight how the understanding of argumentation as dialectical in nature was a centripetal force which held together the debris created by the collision of two vectors – the logic we were taught and the logic we found ourselves wanting to teach.

Thus, although our account will place the term "dialectical" in a starring role, it is only in the last few years that we have been explicitly guided by the conception that argumentation is dialectical.[1]

2. Argumentation as Essentially Dialectical

We shall begin with soundness, the ideal which a typical undergraduate introductory logic course would have presented to its students in the 50s and 60s. That ideal belongs to what we would now call the theory of criticism (in contradistinction to the theory of argument) insofar as it answers the question: "What is it for an argument to be a logically good one, a cogent one?" The answer given by the soundness ideal is that it is an argument whose premises are *true* and whose inferences are *valid*.

Very shortly we shall be listing some challenges to this idea. In order to avoid begging important questions we prefer to say, neutrally, that in a cogent argument the premises and the premise-conclusion connection must both be "adequate." In these terms, truth is one candidate for premise adequacy, and validity is one candidate for connection adequacy.

Our experience with this model – in the classroom, in our reading and in our thinking – has revealed a series of problems. One set of challenges has been to the validity requirement, which holds that a connection between premises and conclusion in an argument is adequate if, and only if, the conclusion follows from the premises, where this

relationship of "following from" is usually read off as "follows necessarily from." Challenges to the validity requirement came from several directions.

The first challenge is implicit rather that explicit: it is the existence of probable reasoning. Probable reasoning has been recognized since Aristotle's day (see the *Topics*), but has been systematically studies only since the 19th century. The conclusion of a probabilistic argument follows from the premises with some degree of probability rather than necessarily. This characterizes much statistical reasoning, and also most scientific theorizing in which the conclusion usually outruns the evidence; or in which the fit between the premise set and the conclusion is never as tight as it is in mathematics, never so tight that some other conclusion is categorically ruled out.

The realm of inductive argumentation is closely related to the realm of scientific research, so it is not surprising that with the development of the natural sciences, it had to be recognized that not all reasoning must fit the ideal of soundness. More recently, survey research methodology shows that the inference from any well-designed sample to the population carries some risk of error: of going from truth to falsity. There is a range of inference adequacy which cannot be denied. Inductive inferences vary from weak to strong; there is no all-or-nothing critique such as "valid-or-invalid" available.

The very existence of inductive reasoning, then, is an implicit challenge to the validity requirement: either we must say that no inductive reasoning can ever be good (which seems preposterous), or else its goodness must be of a different sort, not represented in the ideal of soundness.[2]

Granted that the theory which supports inductive inference is far less well-established, and that the concept of induction is problematic in a way that the idea of deduction is not, still it seems clear that there is a validity. Hence the validity requirement cannot be adequate.

This implicit challenge eventually yields to another explicit one. If we admit that deductive reasoning is one species (properly judged by the standard of validity) and that inductive reasoning (as typified by reasoning from a sample to population) is another, then how will we classify moral reasoning? Or that sort of reasoning in which the conclusion follows, *ceteris paribus*, or on balance, in some other qualified way which suggests a more tenuous relationship between premises and conclusion other than would be the case with either deductive or inductive reasoning? The last ten years have witnessed a number of explicit challenges of this sort, perhaps the first of which was Wallman (1971).

The second challenge is not to the adequacy of the validity requirement but to its *applicability*. First, there is the problem of translating from ordinary language into symbolic language.[3] Second, ordinary language argumentation involves a great deal of material that, from the point of view of logical evaluation, must be regarded as clutter. So before the argument can be cast in symbolic form, decisions must be made about what belongs to the argument and what does not. Third, most argumentation in ordinary language is incomplete or inchoate; hence in order to apply the theory, some decision must be made to fill in the parts that have been left out. The problems in reconstructing inchoate arguments without begging important questions are immense, as the recent extensive literature on "missing premises" attests.[4]

A third challenge comes from an altogether different direction. We have an adequate theory of validity, and hence can say of certain forms of reasoning with assurance: "That is valid." The situation is different in respect to *invalidity*. To see this, imagine we have

represented the form of the argument, A, in a certain way, F; and suppose that F is an invalid form; can we conclude that A is invalid? No, because for all we know there is another valid form F*, also represented by A. this asymmetry between judgments of validity and invalidity creates problems for those who defend the validity requirement; for it would mean that an argument's failing to meet that requirement could not be taken as a sign that the argument was defective.[5]

For these reasons, then the validity requirement is problematic.

There is also a problem, then, with the truth requirement, and this problem does not (unfortunately) disappear just because one recognizes the existence of other forms of reasoning. If one assumes that the appropriate requirement for the premise of an argument is truth, then it will follow that logic can say nothing at all about premise-adequacy. To ask whether the premise is true will take us outside of logic, after all. Hence it happens that logicians in the 20th century have had almost nothing to say about the matter of premise adequacy. In Part 4 we will try to show that this is a mistaken stricture.

There is a further problem with the truth requirement: as one moves away from science and towards a different sphere of reasoning – the practical sphere of human decision-making, the areas of morals, ethics, politics and everyday human affairs – that doctrine does begin to seem questionable. This is not because the notion of truth is inapplicable in human affairs but rather because as one reviews the nature and function of argumentation in this area, it becomes clear that the premises need not be true in order for the argument to be a good one.

We have thus far been speaking largely in terms of our own experience as we now reconstruct it. That our experience was not atypical and was in fact shared by others is indicated by the following developments.

The appearance of Stephen Toulmin's *The Uses of Argument* in 1958 is one of the first explicit challenges to the ideal of soundness and, indeed, to FDL.[6] For example, Toulmin questions the applicability of the Euclidean model to other domains, and develops what he calls a jurisprudential model.

More recently, the kind of challenge directed by Toulmin has found a voice in emergence of the informal logic movement of the past fifteen years. This movement has its origins in a pedagogical revolution having to do with the teaching of logic and dissatisfaction with the traditional approaches. Here is the way Howard Kahane – one of the important influences on Informal Logic – describes his experience (1971: vii).

> in class a few years back, while I was going over the (to me) fascinating intricacies of the predicate logic quantifier rules, a student asked in disgust how anything he'd learned all semester long had any bearing whatever on President Johnson's decision to escalate again in Vietnam. I mumbled something about bad logic on Johnson's part, and then stated that Introduction to Logic was not that kind of course. His reply was to ask what courses did take up such matters, and I had to admit that so far as I knew none did.

From our viewpoint, what Kahane was looking for is a theory of criticism which will help to illuminate the kinds of argument that actually occur in his students' lives. As we begin to look at arguments in their natural language settings, we have to look at their *purpose* and their *function* – not simply, as FDL would have it, at their structure.

The moral we draw from all these considerations is that something is wrong. But what? This question proved to have refractory power, i.e., it called into question the very conception of argumentation which was at work in FDL and which criticism of the ideal of soundness and of the FDL tradition helped to shake. It seemed that if there were problems in the theory of criticism, then likely there were some in the theory of argument. Slowly, it became clear that FDL had in mind one important subset of arguments, but the realm of argumentation was much broader than had been represented by FDL. What we have been describing here – admittedly in brief strokes – is the gradual erosion of a certain ideal which we believe is accompanied by the emergence of the conception of argument as dialectical. The time has come to explain how we use the term.

When we say that argument is *dialectical*, we use "dialectical" in a way that borrows heavily from the Aristotelian concept found in the *Topics*. Below we list the features which our concept of dialectical argumentation takes from Aristotle's account. These features seem to illuminate arguments in a way that leads to a useful theory of argument criticism.

(1) An argument understood as *product* – a set of propositions with certain characteristics – cannot be properly understood except against the background of the process which produced it – the process of argumentation. The appropriate analogy is a move in a chess game or a play in a football game, neither of which can be properly understood out of its context. In Aristotelian dialectic, an interlocutor's contribution has to be seen against the background of the question already asked and the answers already given. In understanding argumentation, this feature points in the direction of background beliefs shared, or debated, by the community of informed people for whom the key propositions of the argument arouse interest and attention.

(2) The process of argumentation presupposes a minimum of two roles: the role of the questioner of a proposition (questions may be motivated by a variety of propositional attitudes: puzzlement, doubt, skepticism, rejection, devil's advocacy, etc.) and the role of answerer of those questions (the answerer may accept the proposition in the question, or may merely hold that the questions do not throw it into doubt or refute it). One person may occupy, successively, both roles; two or more persons may occupy different roles at different points in the discussion. This feature of Aristotle's model emphasizes the importance of understanding arguments directed by one person to another. It also has implications for the standards which arguments should satisfy, for example, reasons offered should be relevant to doubts entertained.

(3) The process of argumentation is initiated, as the above feature implies, by a question or doubt – some challenge – to a proposition. The challenge may be mooted as a possibility, or it may actually have been posed. This factor helps us to develop guidelines for the interpretation of texts – for example, in order to decide when a text contains an argument or to interpret which parts of the text are argumentative and which are not, one considers objections or doubts that have been levelled against the point of view being advanced, or that there is reason to expect the proponent of that point of view might anticipate. We are also guided by this factor in assessing argumentation. For example, if a proponent of a point of view appeals in its defense to a proposition that is also in doubt, then we insist that the supporting proposition must in turn be provided with independent support, and the absence of such support is a flaw in the proponent's case.

(4) Argumentation is purposive activity. Each participant has it as his or her goal to change or reinforce the propositional attitude of the interlocutor or of himself or herself.

Thus the questioner aims at showing the answerer that the proposition should be challenged (at best) or rejected (at worst), or at discovering that it can withstand challenges. The answerer, conversely, seeks to show the questioner that the proposition can withstand challenges, or to discover that it should not be accepted (at least in the absence of further support) or that it should be rejected. In taking these features seriously we are led to realize that single arguments are normally parts of a larger process and need to be interpreted and evaluated in that context. To say that argumentation is dialectical, then, is to identify it as a human practice, an exchange between two or more individuals in which the process of interaction shapes the product.

We have claimed that argumentation is dialectical and we have explained what we take that to mean. In the next three sections, we would like to show how this insight can be made to yield dividends. In Part 3, we shall show how this insight leads to a distinction between argumentation and inference which logicians have thus far either missed or failed to take seriously. In Part 4 we will show how the insight leads to alternatives to the truth requirement in the matter of premise adequacy. In Part 5, we shall show how the insight helps develop alternatives to validity in the matter of connection adequacy.

3. The Difference Between Argumentation and Inference

In the previous section, we said that as a theory of criticism, FDL did not wash. Indeed, as we listed the challenge to the ideal of soundness, it was hard to repress the thought that at least some of those problems stemmed from an underdeveloped conception of argument. The suggestion which we wish to make in this section – namely – that argumentation must be distinguished from inference/implication[7] will allow us to highlight the origin of the problems with the ideal of soundness and also to answer the question: "If FDL is not concerned with argumentation in the dialectical sense, then what is FDL about?"

Let us start by looking at the conception of argument in FDL. Ask a logician belonging to the FDL tradition for a definition of argument and (provided he doesn't misunderstand you to be speaking of some element of a propositional function) he will likely give you the following account: "An argument is a set of statements some of which (the premises) are offered in support of another (the conclusion)."

Given what was said in the previous section about argumentation as dialectical, two problems with this definition stand forth. First, notice that this account is structural and that it gives no real indication of the dialectical nature of argument. Second, notice that this definition sees argument as product rather than as process.

In addition there are problems with the examples of argument given by adherents of FDL. Consider the following example taken from Copi's *Symbolic Logic* (1965 2e: 50):

> [1] If Argentina joins the alliance then either Brazil or Chile boycotts it. If Ecuador joins the alliance then either Chile or Peru boycotts it. Chile does not boycott it. Therefore if neither Brazil nor Peru boycotts it then neither Argentina nor Ecuador joins the alliance.

Or consider again the example cited above (p 76f.) from Lambert and Ulrich:

[2] Boston is a city and Boston is in the United States. Therefore Boston is in the United States (1980: 11)

Perhaps the most fanciful example of an argument we have found is this one, also from Lambert and Ulrich:

[3] The sky is blue, grass is green, therefore tigers are carnivorous. (1980: 19)

It is exceedingly difficult for anyone who takes the view that argumentation is dialectical to imagine that [3] constitutes an argument in any sense of the term. Our point is not the trivial one that [3] is an exceedingly bad argument; it is simply that [3], taken by itself, is not an argument. Hence, we are led to wonder what conception of argument can have led the authors to suggest it.

Perhaps we can get clearer on this if we go back to:

[2] Boston is a city and Boston is in the United States. Therefore Boston is in the United States (1980: 11)

Once again someone used to the idea of argumentation as dialectical would have trouble situating this performance in a dialectical setting. If the setting is the United States, it becomes hard to see what the point of this performance would be. Is the writer attempting to persuade himself of something he already knows but can't quite bring himself to believe? We cannot imagine anyone producing such an argument in an effort to persuade an audience of the conclusion, for the premises contain the conclusion in a strikingly obvious fashion.

In summary, if one considers both the definition of argument and the examples it works with, it seems clear that FDL is not about argumentation in the dialectical sense. But if FDL is not about argumentation, then what is its subject matter?

Our answer is (it will strike some as obvious) that FDL is the logic of implication. Thus we have no problem seeing [2] as an instantiation of the inference-rule: "from '*p* and *q'* infer '*p*'." This rule is surely correct. But implication and argumentation are not the same, witness the following points.

First, if argument is dialectical, the same cannot be said of inference. It is or can be "monolectical" – discourse whose nature and significance does not depend upon an exchange between two or more interlocutors. Thus, I may infer from the presence of the smoke that there is a camp-fire. I need not report this inference to anyone, and it need not be validated by anyone else in order to achieve its goal. It is conceivable that the inference can remain "in the mind" and never be expressed and yet still be useful: i.e., I decide that I should proceed to go in that direction in the hope of finding food.

Second, their purposes are different as well: the purpose of argumentation is rational persuasion (whether of the self or the other); i.e. the arguer's aim is to get the person to accept as true some proposition which he or she does not currently accept. But

that which we infer need not be controversial: thus, when I reason in this way, "I left my wallet at home this morning and the five dollars was in it so I can't have lost the five dollars in my office," there need be nothing at all controversial or dubitable about what I conclude. The purpose of inference here is to discover what I do not know.

Third, implication and argument differ structurally. An inference can move along the track; but an argument in the complete sense can only develop against the background of heterogeneity of point of view and of other arguments. This complexity will manifest itself in the structure of the argument.

Why is the distinction important? The answer is that once implication is distinguished from argument, it becomes clear that the appropriate standards for the two will not necessarily be the same. Hence we may answer the question with which we began: "What is the role of FDL?" Our answer is that FDL certainly provides a marvelous, systematically reliable doctrine about one species of inference/implication (namely, deductive); and similarly inductive logic provides a reliable account of the adequacy of one other form of implication. But FDL has little light to cast on the appropriate standards of argument.

4. Premise Adequacy: Acceptability

What all the varieties of argument seem to have in common is the dialectical feature that someone takes the role of proponent of a proposition and someone takes the role of resisting (the critic or the doubter: Aristotle's questioner). We shall call the occupant of the latter role the "audience" of the argument. The audience may intercede actively with objections and criticisms: viz., quarrels, disputes, legal trials, formal debates, or sales pitches to reluctant customers. Or the audience may be more or less insulated from the proponent, and its resistance may be as much imagined by the proponent as real. Such an audience might be a class of students, or a service club luncheon group, or people attending a political rally, or the readers of a published article or book.

If he is to succeed in gaining the adherence of the audience to the proposition by using arguments, the proponent must begin with premises that the audience is willing to grant, to concede, to admit, to allow, to believe, to endorse, to agree with, to subscribe to, to approve of, to consider – in a word, to "accept." This opening point seems so obvious as to be utterly uncontroversial. However, the traditional (i.e., the tradition in which we were educated: 20th century Anglophone) logician's response to this first instalment has been that it is crucial to distinguish between what the audience might be willing to accept and what it *ought* to accept. What it should accept is nothing but true propositions. If an argument is allowed as "good" (question of connection adequacy aside) provided only that the proponent succeeds in getting the audience to accept the offered premises, and regardless of their truth, then such a standard of argument "goodness" is "rhetorical" (using that term pejoratively) or sophistic: the goal is persuasion, winning agreement, not truth. Hence, the suggestion that acceptability should be regarded as the correct premise-adequacy standard for *logically* good arguments meets with parental disapproval in the households we grew up in.

There is a second objection, to allowing the mere fact that the audience accepts the proponent's premises to count as grounds for regarding the premises as adequate and so the arguments in that respect as logically good ones. This is the objection that such a standard implies relativism: for whether or not an argument will count as logically good will be relative to the epistemic standards of the audience, or perhaps of the proponent and audience combined. If (epistemological) relativism is false or bad, then this implication is fatal to the proposal that premise acceptability be the operative standard. Without declaring on the larger question of the merits of epistemological relativism, we ourselves find to be unpalatable certain specific relativistic implications of the position that any proposition whatever that is accepted by an audience in an argumentative exchange should be regarded as thereby worthy of acceptance. For instance, we hold that some forms of fallacious reasoning consist of erroneous acceptance of premises (e.g., premises that are question-begging, or premises that it is reasonable to regard as false). Hence we have to be concerned about the critical implications of a rejection of relativism for our thesis that acceptability is the premise adequacy requirement.

Moreover, it seems hard to understand why anyone would engage in argumentation unless he thought some objective standards of argument adequacy were being respected. Otherwise, the social practice would be unintelligible and it certainly would be puzzling why it ever became widespread. Additionally, argumentation used to inquire would at the very least have to assume the standard of consistency and some additional standard to decide which of two inconsistent beliefs to hold. Such considerations lead us to think that a condition of argumentation's intelligibility is a presumption of independent standards of argument cogency.

Before proceeding further, we must make sure the issue under scrutiny is not misunderstood. To do so we must make our terminology clear. We are talking about the acceptability of the premises of what we term a "simple" argument – a set of statements adduced to support a claim where each supporting statement, alone or together with others is supposed directly to support the claim, none of which is itself supported by any argumentation. Given this picture, we can distinguish between premises of simple arguments, which are unsupported and premises of more complex arguments, which might themselves be supported by arguments. By "supported/unsupported" here we are talking about support/lack of support *by further argument*. We emphatically do not mean that non-supported premises of simple arguments are unjustified in the sense that there is no justification of warrant for believing them. In fact, the question of the conditions of acceptability is precisely the question of the conditions under which one is justified in believing an unsupported premise of a simple argument. Hence, by hypothesis, these premises cannot be supported *by arguments*.

The resolution of the problem of achieving "objectivity" and avoiding theoretically pernicious relativism lies in taking more of the medicine which gave rise to the problem in the first place. What is needed is to follow through on the insight that argumentation is dialectical, and extend it to the whole surrounding community in which arguments occur. If argumentation is to be a rational activity, as we believe it can and should be, those occupying the dialectical roles in it – the roles of proponent and audience – must take themselves to be addressing not merely the individual "other" in the opposite role, but a larger community of others. This would be the community of interlocutors who hold well-informed beliefs about the subject under discussion.

We wish to advance the *hypothesis* that in the paradigmatic case of argumentation, those occupying the two dialectical roles conceive themselves as trying to satisfy the demands of a community of interlocutors characterized by features which establish certain standards of objectivity as a goal in the argumentative interchange.

The community of model interlocutors collectively will exhibit certain traits of reasonableness which might be thought of as necessary conditions of making a reliable objective judgment. The following list of traits is intended as suggestive rather than definitive.[8]

(a) They are "*knowledgeable.*" They are in possession of the body of "*knowledge*" relating to the proposition(s) in question regarded as well-established at the time of the argument.[9] They understand and can use the methodology currently employed to check knowledge claims. Moreover, they are aware of the limits of their knowledge, so that they know when they do not know something that is relevant to the point(s) at issue.

(b) They are *reflective*. They have a well-established disposition to question, challenge, probe, and wonder. Their "nonsense" detectors are finely-tuned. They know when not to take things at face value, and they are persistent in their questioning – as a good investigative reporter would be.

(c) They are *dialectically astute*. The members of the community of model interlocutors are at home engaging in argumentative discussions. They are alert to possible problems of relevance, to the need for enough evidence of the right kinds, and to the possibilities of counter-arguments and conflicting evidence. They understand that argumentation is an intricate, many-levelled interchange of pro and con considerations, not a one-shot demonstration that settles the question once and for all.

We regard these four traits as working together. No doubt there will be other traits that a conception of argumentation as a rational dialectical activity will suggest, but these four begin to particularize the character of members of the community of model interlocutors. The notion of such a community can be fleshed out further by suggestions about how it is tacitly assumed in the paradigm of argumentation. We would mention five features of its operation.

(1) For each assertion or proposition used in an argument, there will be a particular group of model interlocutors – those who know something about it and who have an interest in it. The interest may be practical or intellectual, but there must be some motivation to care about the acceptability of the proposition. Arguers seeking to realize this ideal will see it as incumbent on them to know or learn the standards appropriate to propositions of that type, and try to satisfy them.

(2) The membership of the community of model interlocutors will vary from proposition to proposition. For some propositions the community will consist of model experts (for example, when there is a well-established field of "knowledge" and reliable credentials for expertise in it). For others, the community will comprise those imagined to possess exceptional wisdom or probity (for example, on questions of national importance or in precedent-setting legal cases, we want our politicians to be statesmen and our judges to be great jurists). For many other sorts of proposition, on the other hand, the ideal standards of "knowledgeability," reflectiveness, openness and dialectical astuteness will be in principle attainable by any adult of normal intelligence, so that the community of model interlocutors will consist of model "ordinary people," namely those in possession of high critical standards (for example, when the propositions have to do with the questions of

daily life routinely facing every citizen). This guideline directs arguers trying to meet standards to find out what claims are taken for granted in the "field" in question – what are matters of "common knowledge" – and what claims are controversial and so may not be accepted without defense.

(3) Clearly the community of model interlocutors will embody high standards, but it is important that they be attainable by most members much of the time. Argumentation in the real world, used about issues that have to be settled by human beings within the limits of time and practicality, cannot require standards of omniscience and perfection. We imagine the "model" interlocutors of the relevant communities to be flesh and blood people; though they are outstanding exemplars, they are nonetheless only "role models" – not gods. As applied to actual argumentation, for instance, this feature would imply that a proponent cannot be expected to know everything or meet superhuman standards of reliability or credibility.

(4) We emphasize the collective nature of the norm we are proposing by speaking of a "community" and not of an ideal individual. The point is that the ideal of argumentation conceives a range of critical questions and a variety of critical points of view as needing responses. In practice this entails that arguers must seriously consider challenges from different perspectives.

(5) Finally, we place the community of model interlocutors in history. Their "knowledge" is the "knowledge" of their time; their assumptions are the assumptions of their particular period; the questions and challenges which they levy against the beliefs and assumptions of their age are the questions and challenges of the leading critics and iconoclasts of that historical moment. If there are eternal truths, then our community will surely acknowledge them; if, instead, there is nothing better than the "most advanced" theory or beliefs of the day, then those will be the best that members of our community can espouse or hold. From the point of view of real life argumentation, as contrasted with some sort of unattainable ideal, the best that one can demand and hope for by way of standards are just the standards of the best available minds.

In general, then, we are proposing that a premise in an argument is acceptable without defense just in case a person following the methods and embodying the traits of the pertinent community of ideal interlocutors would fail to raise a question or doubt about it. The premise is unacceptable without defense, and should not be accepted until cogent argumentation supporting it is provided, just in case something following the methods and embodying the traits of the pertinent community of ideal interlocutors would raise a question or challenge to it.

This general theory of acceptability does not decide when a particular premise of a particular argument is acceptable or not. We suggest that it does have practical implications in two ways, nevertheless. First, it provides a rationale for disputes about the acceptability of a particular premise. Second, it provides a rationale for developing more specific and more immediately practical guidelines for the acceptability of premises.

We imagine that some of our readers will want to dismiss our conception of a model interlocutor as an *a prioristic*, philosopher's theory, out of touch with the actual practice of argumentation. Such an objection is an empirical claim. While we certainly have been led to some of its features by a prioristic considerations – such as imagining the conditions of the possibility of argumentation's being a rational practical activity – we have also been motivated by about fifteen year's work in the trenches, carefully examining and trying to

understand and assess the argumentative texts of non-philosophers – indeed, of non-specialists of any kind – of the proverbial "man (and woman) in the street," arguing with passion or detachment about issues that mattered enough to them to put pen to paper and try to work out a coherent train of thought on a topic. Our theoretical predispositions may have blinded us to relevant features of such texts. However, if so, that is a charge that must be made and defended on specific points; it cannot be intelligibly levelled in principle. If the schematic depiction of our hypothesis is specific enough to serve as a target for such criticisms, we have succeeded in our aim of proposing an alternative conception of premise adequacy to the truth requirement of the soundness ideal.

5. Connection Adequacy

We have been discussing an hypothesis in terms of which we suggest the premise adequacy requirement of cogent arguments be conceived. If argumentation is properly to be understood as dialectical, then it is to be expected that a dialectical analysis should apply to the connection adequacy requirement of cogent arguments. Our view is that this requirement has two separate aspects: a requirement of relevance (the premises of an argument ought to be relevant to the conclusion) and a requirement of sufficiency (the premises ought to provide sufficient support for the conclusion).

We do not have a detailed dialectical account of relevance and sufficiency to offer, but we do believe this is a promising direction for research. To illustrate its possibilities, we will discuss one aspect of the requirement of sufficiency.

The aspect of sufficiency we have selected deals with what might be termed the "dialectical obligations" of the arguer. We have in mind the situation in which a proponent arguing for a claim encounters objections from his audience. If those objections are not met in one way or another, the arguer's task has not been completed. We envisage possible objections of three kinds, corresponding to the three adequacy requirements of a cogent argument: an undefended premise may be attacked as unacceptable; and the premise conclusion connection may be attacked either on grounds that one or more of the premises is irrelevant, or on grounds that as they stand the premises fail to supply sufficient support for the conclusion. When presented with an objection of any one of these three kinds, particularly an objection itself supported with reasons, the proponent of the claim in question owes some response. At the very least he must argue that the objection in question is irrelevant or ill-considered. An argument that fails to do so is in violation of the sufficiency requirement.

When, as frequently happens, a proponent offers an argument to an anticipated audience, and not an audience which is present and which can intercede directly, there is still an obligation to defend the claim, and also the premises of arguments offered in its support, against possible objections. An argument which fails to include such defenses is just as incomplete in the second respect as one which ignores stated objections by active interlocutors.

This is a strong position to take, since it entails that a great many arguments of the sort given in logic textbooks, whether those of the FDL tradition or the "New Wave" texts[10]

are incomplete arguments; for rarely do such arguments attempt to deal with known or possible objections that bear on the issue.

How then do we justify the judgment that an argument must be complete in this sense? How is it to be decided what points ought to be argued for, and where the onus for defense ends, when there is no actually-interacting audience?

It is our suggestion that the concept of the community of model interlocutors can serve in answering these questions. First, an argument is considered to be incomplete when it does not engage the common, known objections to its conclusion and to its premises, simply because we conceive of the audience of responsible argument to be the community of model interlocutors, and these objections will have been raised by members of that community. Since the purpose of argumentation is to persuade these people to accept the claim, and it is known that they will have these objections, the nature of the exercise requires that those objections be addressed if there is to be any hope of the argument's achieving its purpose.

Second, we decide what claims need support by appealing to what claims are in fact problematic in the relevant community of model interlocutors. Moreover we do not consider that a proponent has to answer every conceivable objection, no matter how misguided or foolish, and that is because such objections would simply not arise in the community of model interlocutors as we envisage it. Reflective, dialectically astute people do not waste time on misguided or foolish matters. So it seems that as a matter of fact some such concept as this community is in fact in operation when we make judgments about whether a proponent has tried to answer all the relevant objections – that is, judgments about premise sufficiency in the second sense.

So much, in any case, for our sketch of how the understanding of argumentation as dialectical in general, and our hypothesis about the community of model interlocutors in particular, might apply to part of the sufficiency requirement for connection adequacy. We hope it is evocative enough to suggest the merits of a dialectical approach.

6. Conclusion

The "theory" we have sketched has perhaps a confusingly dual character. To some extent it is empirical. That is, it has been inspired by observations of actual argumentation and argument criticism, and if there is no evidence for our hypotheses in actual argumentation, the hypotheses are refuted. At the same time, the argument is partly "transcendental" (in Kant's sense), or *a priori*: we have been trying to characterize the conditions of the possibility of rational argumentation.

In this paper it has been our intention to report on what we believe is a typical development of thought for Anglophone philosophers in North America who identify their teaching of logic with the development of informal logic since 1970. This process has in part included an increasing dissatisfaction with the ideal of soundness as a tool for the critique of arguments and in part included a growing appreciation of the fact that argumentation is dialectical and of the implications of this fact for the critique of arguments. These two processes proceeded *pari passu*, and have increasingly come to influence each other. We have tried to identify the main objections to the ideal of

soundness, and to indicate the ways in which appreciation of the dialectical character of argumentation has influenced the theory of logical criticism in our own work in informal logic.

Notes

1. "Dialectical" is a much-used term, with many senses; anyone employing it owes his readers an explanation of the particular meaning he assigns to it. We will discharge this obligation in due course.

2. There is a third alternative, taken by some, of reinterpreting validity as a range-covering concept so that it admits of degrees. See, for example, Thomas (1986 3e).

3. See Bar-Hillel (1969: 15) and Scriven (1970).

4. See above pp 66f. and also Johnson and Blair (1985).

5. Massey (1975) and (1981a).

6. "FDL" abbreviates "formal deductive logic."

7. For our purposes here, we shall not draw a rigid line between implication – a relationship between statements – and inference – a mental act in which an implication is embodied or reported.

8. Readers will notice the similarity between this concept and Pereleman and Olbrecht-Tyteca's "universal audience."

9. "Knowledge" and its cognates should be taken to stand in scare quotes throughout. We want thereby to side-step the problems relating to the definition and possibility of knowledge. In contexts outside of technical philosophy a person may be described as knowledgeable even when the content of her "knowledge" might more precisely be specified as "informed opinion." Furthermore, of course we are aware of the well-known philosophical characterization of knowledge as justified true belief, which requires, if skepticism is false, that it be possible to speak of statements as being "true." But the objection to requiring truth as the criterion of premise adequacy does not imply that one may not speak of "true" statements.

10. See Chapter One above, p 20ff.

Chapter Six

Argumentation: A Pragmatic Perspective

1. Introduction

Following the lead of argumentation theorists like van Eemeren and Grootendorst[1] and logicians like Barth[2] and Walton (1990b) who have brought the pragmatic aspects of argumentation to the fore, this paper is intended as a further contribution to that project. In the next section I explain what I understand by the pragmatic approach. In Section 3, I discuss the principal features that come to the fore using this approach. In Section 4, I discuss the benefits of this approach. Section 5 is my conclusion.

2. The Pragmatic Approach to Argumentation

A. The Practice of Argumentation

Walton (1989b: 114f.) has offered an alternative account of argument in which he distinguishes between the *semantic core* of the argument (the propositions which constitute its premises and conclusion) and *the pragmatic structures* which surround it. Walton's critique may be read as saying that too much attention has been paid to the semantic core of argument and not enough to its pragmatic aspects. Suppose, then, following these leads, we look at the pragmatic aspects, or, as I prefer to say, approach argumentation from a pragmatic perspective. What does that mean?

First, a pragmatic approach means viewing arguments in the *context* of the practice of argumentation, which practice may be seen as composed of three constituents: (1) *the process of arguing;* (2) *the arguer(s);* (3) *the product* – the argument. Thus, to understand argument (the product), we must understand the practice and the process from which it emerges. That leads to my next point.

Second, a pragmatic approach especially emphasized purpose. Practices exist to achieve purposes – often more than one. If then we are to understand the practice of argumentation, we can best begin by first grasping its purpose, which I take to be best captured by the phrase: rational persuasion.[3]

Finally, a pragmatic approach to argumentation can parallel the tracks laid down by Peirce for his pragmatic approach to inquiry. In that model, doubt gives rise to the process of inquiry which continues until it comes to rest in belief.[4] Similarly, a matter which is controversial gives rise to the process of argumentation which comes to rest in an argument. Let me develop this approach in more detail.

The practice of argumentation presupposes some controversial matter about which the participants disagree and which disagreement they propose to resolve rationally –

rather than by force or some other method of persuasion. It supposes individuals who are interested in giving and/or receiving reasons that lead to the truth of the matter; i.e., it presupposes individuals who are rational. Thus, a pragmatic approach to argumentation emphasizes the *centrality of rationality.*

Now Walton is surely on target when he describes argumentation as "the global process of defending and criticizing a thesis." This global process includes more than just the garnering of reasons to support or defend a thesis. For the mere fact that the arguer can present a few reasons in support of his conclusion is not going to be rationally compelling in a situation where all the parties fully realize that there are alternative views on the same matter. These alternative views house objections and criticisms of the argument. The raising of objections, the tracing of consequences, the consideration of alternatives – all of these are *vital parts of the process*. Further still, we must include as part of the process the response by the arguer to the argument. Criticism and revision are not inconvenient consequences of the practice, as a great many accounts of argument would seem to suggest. Rather without them, the practice would not exist. Here we have an immediate payoff from the pragmatic approach: it makes evident that criticism and revision are *internal* – not external – to the process of argumentation.

In my comments, I have been trading on an implicit distinction between argument and argumentation. Walton (989b: 410) claims that there is no point in distinguishing the two:

> Such a pragmatic perspective suggests a new way of defining argument to make it coextensive with argumentation. The only difference between the two is one of connotation.

On the contrary, there is at least one good reason for distinguishing the practice of argumentation from its product. Generally, we want to keep separate the normative issues that surround the practice of argumentation from those that surround the process and those which surround the product. Although it seems clear that if the process of arguing is to achieve its goal, the arguer must deal with the standard objections, it is not clear that we would be wise to take this same view of the argument itself – else a great many arguments (which many times fail to deal with objections) would *ipso facto* have to be considered defective – this consequence seems unduly harsh.

Having said this much about the practice, and why it is worth distinguishing from the product, let me forthwith turn my attention to the product.

B. Argument as the Product of the Practice

Argument can be best represented as the product (or the distillate) of the practice. At a certain point in the process, the arguer distills from what has transpired elements to which he gives the form of an argument. This may well be a provisional move, in order to receive criticism. Or, it may be that the arguer now believes she can achieve her purpose of rational persuasion with this product. Although not all arguments will contain all features of the process, nevertheless they will bear its imprint. Our conceptualization of argument must recognize this fact.

Most current ways of understanding argument fail to do so. The prevailing view of argument sees it largely in structural terms: i.e., as a set of statements (or propositions/assertions/beliefs/judgments) one of which – the conclusion – is supported by the others – the premise(s). A definition of this sort can be found in every kind of logic text, whether deductive or inductive, formal or informal. Here are a few examples. Barry and Rudinow write (1991: 95):

> An argument is a set of assertions one of which is understood or intended to be supported by the other(s).[5]

Nor is this "structural view" of argument restricted to logic textbooks. It can be found in the work of leading theoreticians like Hamblin (1970: 228):

> Argument is generally regarded as being whatever it is that is typically expressed by the form of words "P therefore Q," "P, and so Q"; or, perhaps "Q, since P," "Q, because P."[6]

To be sure, there is something right about the structural view. We engage in the practice of argumentation because we wish to persuade someone of something and to do so rationally. We recognize that doing so will require us to put forth reasons; hence the view that argument consists of a claim/thesis plus reasons for it. Argument has the structure it has (reasons leading to a conclusion) because of the purpose it serves: rational persuasion. *Form follows function.* The structural view is inadequate because it ignores this important feature.

There is another problem with the structural approach: it overlooks the fact that we give reasons for other reasons as well. Or to put the matter differently, arguing is only one form of reasoning. Explaining is a form of reasoning, as are predicting, inferring, etc. in the final analysis, then, the mere fact of giving reason cannot serve as an adequate basis for distinguishing argument from other forms of reasoning.[7] Having discussed the pragmatic approach to argumentation and distinguished it from argument, let me now discuss the important features which characterize the practice.

3. Principal Features of Argumentation

The pragmatic approach to argumentation brings the role of purpose to the fore, and we begin our treatment of the special features or argumentation by considering that in greater detail. But there are other related features of argumentation that the pragmatic approach serves to highlight, and I want to discuss them here also.

A. Argumentation as Teleological

As we saw earlier, standard definitions of argument are typically structural in character. An argument is seen as a form of discourse/reasoning that exhibits a certain structure; viz., premises leading to a conclusion. And we have seen that this approach tends

to omit reference to the purpose which this structure serves. Most important here is the *telos* of rational persuasion.

Some would object to the idea that there is such a thing as *the* purpose of argument, pointing out that argument can also be used for inquiry[8] and indeed other purposes also (such as to reinforce belief). My response to this claim is to concede that they are right to point out that argumentation may well serve more than one purpose. Still I claim that while argument may be used for these other purposes (such as inquiry), these uses are best understood as derivative – as dependent on the use of argumentation for rational persuasion. I cannot mount that defense in detail here, but it would parallel the Wittgenstenian argument that talking to oneself as a language game is derivative of "talking to others." We first learn the practice of persuading others; then we can use that practice to inquire, i.e., to persuade ourselves.[9]

Because rational persuasion is the *telos* of argumentation, those engaged in the practice must recognize that any claim made must be supported by reasons, or evidence of some sort. Hence, in the first instance, an argument will appear as a premise-conclusion structure: a set of premises adduced in support of some other proposition which is the conclusion. This is the first-tier of the argument – or one might say, the ground floor. For there is more to the story.

Because the arguer's purpose is rational persuasion, a second tier is required as well. Why? We have seen that the practice of argumentation presupposes a background of controversy. The first tier is meant to initiate the process of converting others, winning them over to the arguer's position by giving them a rationale for accepting the conclusion. But others will not so easily be won over, nor should they be, if they are rational. Those who know anything about the issue are aware that there are still others who see things differently. They have objections to the arguer's premises. Indeed, the arguer must know this herself and so will often attempt to defuse such objections within the course of the argumentation. And if by chance she does not deal with at least some of these objections and criticisms, then to that degree her argument is not going to be satisfying. For those at whom it is directed will be aware that the argument is open to objections from those who disagree with its premises and/or conclusion and/or reasoning. Hence, if the arguer wishes to persuade rationally, the arguer is obligated to take account of these objections, these opposing points of view. To ignore them, not to mention them, or to suppress them – these could hardly be considered the moves of someone engaged in rational persuasion. And so the process of argumentation must have a second tier in which objections and criticisms are dealt with. I call this the *dialectical* tier. And this shows the connection between the teleological and the dialectical: because the practice exists to achieve rational persuasion of the other as a rational agent, the practice must also be dialectical. Thus the second feature of argumentation comes to the fore.

B. Argumentation as Dialectical

To say that argumentation is a dialectical practice is only to say what has long since been recognized. Yet I believe that the full force of this all-too-familiar characterization has not been appreciated.

The root meaning of "dialectical" is dialogue – a *logos* that is *between* two (or more) people. That requires more than just speech between two parties, because as we all know, it may be nothing more than a monologue conducted in the presence of another.

Genuine dialogue requires not merely the presence of the other, but the influence of the other on the discourse. An exchange is dialectical when as a result of the intervention of the other, one's own "logos" (discourse/reasoning/thinking) is affected in some way. And one recognizes this influence as well.

That argumentation is dialectical means that the arguer agrees to let the feedback from the other affect her product. The arguer consents to take criticism and to take it seriously. Indeed, she not only agrees to take it, when it comes, as it typically does; she may actually solicit it. In this sense, argumentation is a (perhaps even *the*) dialectical process *par excellence*. If, as is likely, the arguer now modifies the product as a result of the intervention, the result is an improved product. The intervention of the other is thereby seen to lead to the improvement of the product. It has become a better product, a more rational product. Thus do these two features of argumentation – its being rational and dialectical – build on and reinforce each other, and they point to the final feature of the practice to be discussed – *manifest rationality*.

C. Argumentation as Manifest Rationality

I will be asked about the meaning of "rationality." For our purposes here, I wish to bracket the interesting theoretical discussion about the nature of rationality. Here, rationality can be understood as the disposition to, and the practice of, using and giving and acting on the basis of reasons. To clarify what I mean, it may be helpful to compare and contrast the orator with the arguer.

The orator is clearly a rational agent, for he must learn how to shape his message to his audience and to other constraints, such as time and place. Thus he must have a clear understanding of means-end relationships, of how to achieve purposes, etc. – all of which skills are indicators of rationality. How does the orator differ from the dialectician in this matter of being rational? For although rationality is internal to and constitutive of the practice of argumentation, the same can be said about rhetoric. Rationality is in effect the glue that binds both practices together. So what separates the orator from the dialectician, rhetoric from argument? My answer is in the strictures of manifest rationality. *Not only must the practice of argumentation be rational, but it must also be understood by the participants that this is so.*

By *manifest rationality,* I mean not just that the practice is rational, but that in addition those engaged in it have a mutual, if tacit, understanding to this effect. Rationality here is not merely the inner reality but also the outward appearance. Like justice, rationality must not only be done, but it must be seen to be done.

This additional consideration, this clothing of rationality, is what makes argumentation more than just an exercise in rationality. That is why the arguer is obligated to respond to objections and criticisms from others, and not ignore them or sweep them under the carpet. For to do so would not only not be rational, would not be in keeping with the spirit of the practice, but it would be an obvious violation of it. Thus, it would not only not *be* rational; it would not *appear* rational.

Further, the requirement of manifest rationality explains why the arguer must respond even to criticisms which he believes (or knows) are misguided. If the arguer were obligated only by the dictates of rationality, then he might well be able to ignore such criticisms.

It is in this matter of dealing with criticisms, then, that the arguer and the orator finally part company. Both give reasons for their position; both want these to move the audience and so much take account of the audience. Both will have to make some concession in the direction of dealing with objections. The orator may know of serious objections to his thesis and to his discourse; he may or may not choose to include reference to these in his discourse (most likely he will not). One could not accuse him of any lapse of rationality if he failed to do so. But if the arguer fails to deal with well-known objections, *this is a serious lapse of rationality.* How could I explain the arguer's failure to do this? It cannot be that he does not know of the objections; it cannot be that he is trying to conceal them or sneak around them; so what could the reason for his silence possibly be? What could explain this lapse? The only explanation would be that the arguer has failed to grasp the sense of the practice; and this must at some level be a failure of rationality. Thus participants in the practice of argumentation not only exercise their rationality, but they need to be seen to be doing so.[10] Argumentation thus displays the feature that I have termed *manifest rationality*.

I have argued that argumentation is characterized by these three features which it can now be seen are intimately related. Because argumentation aims at rational persuasion, it must be dialectical; because argumentation is both rational and dialectical, it must be manifestly rational.

4. Benefits of the Pragmatic Approach

In addition to clarity about the three features just discussed, there are a number of important gains when argumentation is viewed pragmatically. Let me briefly discuss them under four headings. (All of these points require more development than I can provide here.)

A. A Changed View of Argument

We have seen that the structural view is inadequate for two reasons. First, argument cannot really be grasped as structure without reference to the purpose(s) which the structure is meant to realize. Second, the real structure is more complicated than the standard view would suggest. There must be more to an argument than just reasons leading to the conclusion; a dialectical tier is also necessary. Finally, our approach suggests that an adequate conceptualization of argument cannot be had apart from seeing it as a product situated in the practice of argumentation.

B. The Difference between Inference and Argument

The full story here is complicated. For starters, I would need to persuade you that this difference is not well understood, that it has not been adequately portrayed in the literature. Indeed, my view is that what happened in logic in the 20th century is the mathematicization of logic, and that one outgrowth of this way is the tendency to blur the boundaries between inference and argument.

But even that is an incomplete characterization, because it turns out that once mathematicized (after the Russell-Whitehead intervention), logic is not concerned with either inference or argument but rather with *implication*.

To illustrate this confusion about inference and argument, I refer to Hamblin, *Fallacies* (1970). At this point in his book, Hamblin is discussing the nature of argument.

> Now it is important to notice that when P is adduced in support of Q, it may actually not support Q. This is only to say that an argument may be invalid. However, it is important to emphasize that an argument is not to be identified with an implication. (229)

The first two sentences seem quite obvious. The third contains a crucial and not widely cherished insight, but it slips by without notice because Hamblin doesn't give it the attention it needs. And he muddies the waters later on when, in the space of some 15 lines, Hamblin uses the terms "argument," "Reasoning," and "inference process" as though they were interchangeable. This occurs in a passage where Hamblin is discussing a variant of the liar paradox.

> Epimenides was telling the truth when he said I am lying.
> Therefore, Epimenides was lying when he said I am lying.

He comments:

> We can, if we choose, hold firm to the conviction that an argument *cannot* be valid if the conclusion contradicts a premise; and, if we do, we are forced to find a fault in the reasoning in this example, such as by insisting that I am lying is not a genuine statement. In place of this rigid attitude, however, it would seem better to admit that there are circumstances within which accepted inference-processes may lead to unacceptable conclusions and that, if we have to, we can learn to live with this situation . . . (230f.)

What stands out for me is how Hamblin shifts from "argument" to "reasoning" to "inference process" as if these were synonymous. Toss "implication" into this inventory and one begins to feel the need for some sustained reflection on these concepts and the connections among them.[11]

The pragmatic approach offers help here. We can begin to get a handle on differentiating between argument and inference. Arguments, as we have seen, are the result of practices which are dialectical in nature and characterized by manifest rationality. What is an inference? This question is at least as difficult as the one under discussion in this chapter. At the very least, we note that inference is a transition in the mind from one thought or idea to another, a transition which is in some sense guided. Thus, for example,

when I see steam come from the front of my car, I infer that I may have a radiator that's boiled over. Though I cannot develop this view further here, inferences seem more appropriately categorized as *performances* which may or may not be dialectical in character, and which, if rational, need not be manifestly so.

C. Implications for Evaluation

The pragmatic approach also carries with it some important consequences for the process of evaluating arguments.

i. Generally, we evaluate a product in terms of whether it serves the practice. This would suggest that arguments should be judged by how well they service the practice of argumentation. Hence, it is not enough to ask: does the evidence support the conclusion, but as well: does the argument deal with and defuse well-known objections, differentiate itself from other positions on the issue and respond to them? My suggestion is that such material would constitute what I have called the dialectical tier.

ii. From the above it follows that we cannot adopt the theory of evaluation given by formal logic as our theory here. Soundness (true premises plus deductive validity) cannot be an adequate model for evaluating argumentation. The premises need not be true and the implication need not be deductive for the argument to have value.[12] Further, we need to keep in mind the difference between evaluation and criticism. As we have seen, arguments by their nature require criticism, whereas inferences do not. Absent the distinction between inference and argument, and you have *ipso facto* taken the ground out from underneath the distinction between evaluation and criticism.

iii. From this perspective, we can see that some fallacies occur in the structural core (hasty conclusion), while others are better characterized as dialectical; e.g., fallacies such as *ad hominem* and straw person. To say that they are dialectical is to say that they arise in an argument when the arguer is dealing with objections, alternative positions, etc. This helps put a different light on fallacy theory.

D. The Distinction between Informal and Formal Logic

Formal logic is concerned to provide a normative theory of evaluation for inference/implication, whereas informal logic is concerned to provide a normative theory of criticism for argumentation.[13]

5. Conclusion

In this chapter I have been concerned to further develop the essentials of a pragmatic approach to argumentation in the spirit of Walton and others. I have claimed that when approached in this spirit, the *practice* of argumentation comes to prominence and certain of its central features are clearly seen: argumentation is teleological, dialectical and, most important, it exemplifies what I have called *manifest rationality*. On the other

hand, the structural approach fails to illuminate the richness of this important socio-cultural practice.

Notes

1. For the basic approach of the pragma-dialectical school, see Eemeren and Grootendorst (1984).

2. Barth (1985) calls for the "pragmatization of a scientific or philosophical theory," by which she means "the reinterpretation, reorganization and reformulation of the theory in such a way that its institutional features are made explicit . . ." (383). Applied to argumentation theory, this would require us to bring institutional features to the fore.

3. In the quote that follows, Govier is discussing argument; what she says is just as pertinent to the practice of argumentation: "The purpose of an argument is rational persuasion. A person puts forward an argument in an attempt to persuade an audience that a claim is true on the basis of reasons he or she gives in support of the claim." (Govier 1987: 168)

4. See C. S. Peirce, "The Fixation of Belief" (1878).

5. There is no problem multiplying instances. For another expression of this view, see Hinderer (1991: 16): "In logic, the term argument means that at least one reason is offered to influence a person's belief about something."

6. See Nickerson (1986: 68): "Here the term argument will be given a somewhat broader connotation than its strictly deductive one. It will be used to connote any set of assertions that is intended to support some conclusion or influence a person's belief."

7. Let me illustrate with a few examples how one may give reasons to influence a person's belief and yet not be engaged in the practice of argumentation.

    a. When I *explain,* I offer reasons. The reason that your car won't start is that you have a dead battery, and also the starter is defective.
    Or: The reason we are having such weird weather this summer is the influence of El Niño. Here I offer a reason whose function is to provide support to some other assertion, the function is not to persuade us of the truth of this assertion. The reason is that in both cases we already accept the other assertion as true.

    b. I offer reasons when I *instruct*. If you want to get the best light for this shot, you're going to have to use a XDX-1 filter combined with . . . Here I offer a reason as support for a claim, but the function is not to persuade that the

claim is true. Presumably, the other party is prepared to accept the instructor's sayso here. He/she isn't going to argue about it. So although the discourse fits the description given above, it would not seem to have the character of an argument. What is lacking here, I would claim, is the common focus on a proposition both parties agree is controversial.

c. I offer reasons when I *make an excuse*. I can't go to the show tonight because I have to study for my exam tomorrow. Here we have the structure of argument as defined above, and yet I would not want to call this argumentation.

d. Finally, consider this situation: My dentist gives me a reason for a course of action (if the tooth doesn't come out, it will likely abscess). Certainly her discourse is meant to influence my belief. But is such discourse properly and profitably construed as an argument? What reasons might there be against this view?

   Although the dentist is surely appealing to my rationality, we are not engaged here in the practice of argumentation because the context of this exchange is not dialectical, but for the moment let me say that in this example, the two parties have not met as equals to reason about the truth of some matter. They are engaged in a different kind of discourse, and though on the surface it is tantalizingly similar to argumentation, deeper analysis will show many important differences between what this practice is and argumentation.

8. Meiland, for example, sees arguments as tools for inquiry, less than persuasion. Cf Meiland (1980: Ch. 34). See also Blair (1987).

9. Just as one might argue that we first learn to talk to others then learn to talk to ourselves, I would claim that in the first instance argumentation serves the purpose of rational persuasion. First we learn how to persuade others, and then learn how to persuade ourselves (argumentation as inquiry).

10. To use a parallel, in his discussion of Kripke's theory of names, Gareth Evans (1968) writes: "Intentions alone don't bring it about that a name gets a designation; without the intentions being manifest there cannot be the common knowledge required for the practice." In the same spirit, I would argue that the idea of rationality alone cannot illuminate the practice of argumentation. Without the rationality being manifest, there cannot be the common knowledge required for the practice. Thus participants in the practice of argumentation not only exercise their rationality, they need to be seen to be so doing.

11. There is, in the tradition of formal logic, a precedent for making the distinction between inference (a psychological activity) and argument (a linguistic entity). See Salmon (1973: 8f.). Salmon also discusses the relationship between the two when he says: "When people reason, they make inferences. These inferences can be transformed into arguments, and the tools of logic can then be applied to the

resulting arguments. In this way the inferences from which they originated can be evaluated."

12. I have argued this elsewhere. See Johnson 1992: 150-152.

13. This too I have argued for elsewhere. See Chapter Ten below.

III. Other Voices

Chapter Seven

Toulmin's Bold Experiment

A Critical Review and Appreciation of *An Introduction to Reasoning*
by Stephen Toulmin, Richard Reike, and Allan Janik

1. Introduction

What would your first instinct be upon hearing of an introductory logic text that made virtually no mention of staples such as *premise* and *conclusion, validity* and *invalidity, inductive* and *deductive arguments*? You might think that it ought to be condemned to the flames as containing nothing but sophistry and illusion. But hold! Were you to follow that inclination, you would be missing out on an important and challenging text. Its name is *An Introduction to Reasoning*; its authors are Professor Stephen Toulmin and his cohorts, Richard Rieke and Allan Janik.[1]

There have been precious few innovations in argument analysis since the time of Aristotle. Most logicians have been content to remain within the perimeter of the standard conceptual framework of logic, analyzing arguments into premises and conclusions; classifying them as either deductive or inductive, and upholding soundness as the ideal for deductive arguments. In the last 25 years, there are indications of changes underway that might serve to weaken the hold of the traditional framework. In another place, Blair and I have attempted to identify some of these changes – most of them within the orbit of what we call "informal logic."[2]

The main stimulus for these changes has, it seems, been pedagogical. Students in the late 60s began to demand "relevance," and their logic teachers – at least some of them – were sensitive to these demands. Students wanted (sometimes for political reasons) an introduction to logic that equipped them to enter combat with *real* arguments – not the "Dick and Jane" variety found in so many logic Primers. For their part, we may presume that teachers were finding themselves increasingly uncomfortable teaching formal methods of analysis, and began to discover the enormous problems involved in the attempt to apply those methods to real arguments set in context of pressing social and political affairs. Some of them began to tinker around, and because the only avenue available to them were textbooks, it turns out that textbooks have played a significant role in the recent development of informal logic.[3]

Toulmin's text continues this trend, for it is obvious that pedagogical concerns have influenced him too. In the *Teaching Guide,* he says:

> This is little more than an updating of a part of the trivium of the time-honoured liberal arts so as to meet the contemporary challenge to philosophers and educators, that is, to educate a generation of students whom Anthony Burgess has aptly described as having "experienced everything and read nothing." (*TG*, 1-2)

Although pedagogical goals have fuelled the engine driving recent experiments, it must be noted that theoretical issues have quickly emerged. Indeed, it has become evident that if informal logic brackets the canons of formal logic and addresses itself seriously to the task of analyzing and criticizing real arguments (as our pedagogical values demand), then we will find that we lack anything substantially new in two important areas: (1) *the theory of argument* and (2) *the theory of criticism*. So it is the strong interplay between pedagogy and theory that has invested informal logic with much of its vitality and growing appeal to logicians.

All this being so, it was with the greatest anticipation that I received a copy of Toulmin's new text. Not only is he himself a highly respected philosopher, but his earlier monograph – *The Uses of Argument* – was one of few serious attempts in the literature of logic to address itself squarely to the adequacy of the traditional framework. That alone gives Toulmin at least partial claim to the title "the grandfather of us all." In that work, Toulmin wrote:

> In tackling our main problems about the assessment of arguments, it will be worthwhile clearing our minds of ideas derived from existing logical theory, and seeing by direct inspection what are categories in terms of which we actually express our assessments, and what precisely they mean to use. (1958: 6-7)

How terribly sane and insightful the thought! In effect, Toulmin was saying that it was about time that logicians became more empirical and looked more carefully at the problem of analyzing real arguments. His own proposal, forming the core of that work, was that we can best understand *the process* of critical assessment of arguments by means of a jurisprudential model rather than a mathematical one. In *An Introduction to Reasoning*, some 22 years later, Toulmin has undertaken the task of translating that proposal from a theoretical to a pedagogical setting.

In the intervening years, we have seen initiatives from other logicians also who (whether knowingly or not) were rallying to the cry Toulmin had issued in *The Uses of Argument*. What he predicted there has come to pass, for at the end of his introduction, he wrote:

> But of one thing I am confident: that by treating logic as a generalized jurisprudence and testing our ideas against actual practice of argument assessment rather than against a philosopher's ideal, we shall eventually build up a picture rather different than the traditional one. (10)

Just such a picture has begun to emerge, although its outline and finer details remain blurry. Informal logic now finds itself in the very sort of situation Kuhn describes in *The Structure of Scientific Revolutions.* The old paradigm is losing, or has lost, its grip; several new ones have been developed; none has thus far managed to carry the day and win allegiance. It is in this context, I believe, that we must place Toulmin's text. *Is this the new paradigm for which we have been searching?*

I hope to be able to give this text the careful scrutiny it deserves, though I very much fear that I shall not succeed. For the reviewer must be in a position to appraise both the theoretical and pedagogical adequacy of the text, and I'm afraid I must admit to limits on

both counts. To take the matter of pedagogy first, I must confess that I have not had the opportunity of teaching from this text and therefore have no solid basis for gauging its merits as a text; i.e., how do students respond to the text? What sorts of problems might one encounter using it? On such questions, I shall have to pass, contenting myself with the hope that someone who is qualified will take them up. Then there is the matter of the conceptual framework Toulmin introduces, about which I make these preliminary observations. It is a radical departure from the traditional framework. It is fascinating, fresh, and anything but a rehash of the same old tired approach that has occupied center stage for so long.

To give the reader some sense of what Toulmin is about, I shall quote three passages from the *Teaching Guide:*

> Our conception of logic is based on the notion that reasoning is essentially a matter of dialogue rather than monologue, in which certain techniques come to be mastered. (1)

> Among the most important consequences of the notion that reasoning is to be taken as a human transaction rather than as the analysis of arguments in terms of canons that establish their validity or invalidity for all time, is the correlative notion that argumentation (and indeed rationality itself) is an "open-textured" activity. Only in mathematics and formal logic do we encounter reasoning that can be said to reach a conclusion, a finally completed state. (2)

> Because a Socratic approach is suggested throughout, it will be helpful to look at some possible topics of discussion that can be stimulated in the opening session and carried throughout the remainder of the course. *An Introduction to Reasoning* aims at an articulation of the stages through which actual arguments and discussions go. (2)

These passages make plain that Toulmin has, quite self-consciously, attempted to develop an approach to logic that is, for all practical purposes, independent of the assumptions and concerns of formal logic. We cannot, I think, underestimate either the boldness or the significance of this experiment. Most texts in the recent batch of informal logic texts have, for all their merits, in one way or another retained significant elements or assumptions of the traditional framework, even when they have tried valiantly to overcome them.[4] Toulmin has taken a different road, though one will surely see its philosophical antecedents in the writings of Peirce and Wittgenstein, to name but two. Although Toulmin does not say it explicitly, I think what he is providing us with here is a new paradigm for (informal) logic, some aspects of which are evident in the passages quoted. First, Toulmin has chosen to investigate reasoning and argumentation as *process* (rather than as *products*) and so has devised a model for understanding them which is *dialogical* (rather than *solipsistic*) and *dynamic* (rather than *static*). Second, Toulmin has decided to look at the processes of reasoning and argument in law and science (principally), finding in them better analogues for how reasoning is developed and criticized than he believes can be found in the traditional analogues: geometry, mathematics, and formal logic.

Hence, the appropriate matrix for this review cannot be the conventional one: Is this a good introductory logic text? For built into that very question are a host of assumptions about what logic is. Instead, I propose that the right question to ask is: How successful is

this text in attempting to develop a new conception of what logic is, and how to go about the task of analyzing and criticizing arguments?

Yet to answer this question, the reviewer (and here I finally return to the matter of my limits) must have the benefit of both time and practice. I have the benefit of neither.

A final problem faced by the reviewer (it seems there is no end) is that this is a big text (337 pages) of very broad scope. I shall have to be selective in my remarks. The very least that I can do, at this point, is to give the reader a rough idea of the shape of the whole. Then I shall burrow in.

An Introduction to Reasoning has four parts. Part I is the "General Introduction," containing the opening chapter. Part II, the core of the text, presents what Toulmin calls "the basic pattern of analysis." It contains six chapters, each of which comes with exercises designed to allow the student to apply what he or she has read in the chapter. Part III is titled "Rational Assessment," and consists of four chapters dealing with various aspects of criticism. The largest of these is Chapter 11, "Fallacies," about which I shall comment in some detail. Part IV shows how the basic pattern is applied in different fields. Chapter 13 deals with legal reasoning; Chapter 14 with argumentation in science; Chapter 15 with aesthetic arguments; Chapter 16 with decision making in management and business; and Chapter 17 with ethical reasoning.

Here then is the plan for the review. In Part 2, I begin with a brief discussion of Chapter 1 and then take a detailed look at each of the elements in the pattern of analysis. In Part 3, I will focus on Toulmin's theory of criticism as set forth in Part III of his text. In Part 4, I present my answers to the questions I have said constitute the appropriate matrix for review.

2. Toulmin's Theory of Argument

A. Chapter 1: Reasoning and Its Goals

The first chapter aims "to sharpen the student's perception of just what it is to give reasons" (*TG,* 1). It begins with five examples of reasoning drawn from different areas, after which Toulmin asks:

> What does it mean to ask if someone's statement or argument or advice is sensible or well reasoned, sound or logical? . . . What do these demands for "good reasons" and "sound arguments" amount to? And how are we to judge this kind of goodness and soundness? That is what this book is all about. (4)

An engaging and effective start, I thought.

The topics dealt with in the rest of the chapter not only serve the aim declared above but also lay the foundation and indeed set the tone for the rest of the book. They are:

1. "The Varied Uses of Language," in which Toulmin distinguishes between the instrumental and the argumentative uses of language, thereby putting some limits around the need for "giving reasons."

2. "Reasoning Varies with Situations," which makes the fundamental point that the kind of reasoning that is appropriate varies from context to context.
3. "Reasoning as a Critical Transaction," which presents the idea of reasoning as one whose essential locus is "a public, interpersonal or social one," (9) and of reasoning as "not a way of arriving at ideas but rather of testing ideas critically" (9).
4. "The Structure of Arguments," which makes the point that arguments, or trains of reasoning, are constructed out of their constituent parts.
5. "Some Definitions," in which Toulmin presents his definitions of argumentation, reasoning, argument and rationality.
6. "The Forums of Argumentation," which again emphasizes that arguments have different forums and must be judged accordingly.

Before moving on, I want to call attention to two commitments of Toulmin's approach that emerge in this chapter. The first is Toulmin's position on *standards* (or *criteria*) of assessment. He says:

> So reasoning involves dealing with claims with an eye to their contexts to competing claims, and to the people who hold them. It calls for critical evaluation of these ideas by shared standards; a readiness to modify claims in response to criticism; and a continuing critical scrutiny both of the claim provisionally accepted and of any new ones that may be put forward subsequently. (9)

I like Toulmin's emphasis here, but the reference to "shared standards" was both intriguing and perplexing. For shortly after this passage, Toulmin writes:

> One of the central questions in our whole inquiry will be, indeed, just how far and in just what respects, we can hope to state general or universal standards of judgment for telling the validity, relevance, and strength or weakness of "reasons" or "arguments"; just how far, and in what respects, these standards will inevitably vary in time or differ according to the context and circumstances of judgment. (10)

The question of whether or not there are universal standards for the evaluation of arguments is a crucial and vexing one for the theory of logical criticism. Between the lines here, I thought I detected a hint of *relativism* – the view that there are no universal standards or criticism, that all standards are context-dependent. With equal justice; such a view might also be called *pragmatism*. In any event, Toulmin returns to the question of standards several pages further on:

> While certain very broad rules of "rational procedure" apply to arguments in all these forums, many of the more specific rules of procedure (or "due process" that govern arguments in one area are relevant only to, say, the proceedings in a law court rather than in a scientific meeting, or the other way around. One of the main aims of this book will in fact be to show the difference between:
>
> Those universal ("field-invariant") rules of procedure that apply to rational criticism in all fields and forums, and

> Those particular ("field-dependent") rules that are appropriate in law, or science, or business, but not everywhere. (15)

And so Toulmin's theory of criticism shades into his theory of argument. That there are both field-invariant and field-dependent standards or roles clearly presupposes that arguments can, without insuperable difficulty, be parceled out to various fields. Should this presupposition prove to be implausible, Toulmin's theory of argument and his theory of criticism alike will be in some jeopardy.

Thus, two important commitments have emerged in this first chapter. The first, belonging to the theory of argument, is that arguments can be assigned to fields. The second, belonging to the theory of criticism, is that some standards are field-invariant, while others are field-dependent. We shall want to monitor future developments with these principles in mind.

B. Chapters 2-7: The Basic Pattern of Analysis

What Toulmin refers to as "the basic pattern of analysis" is described in a nutshell in Chapter 2, and then discussed step-by-step in the chapters that follow. The pattern has six "elements": the *claim* (Chapter 3); the *ground* (Chapter 3); the *warrant* (Chapter 4); the *backing* (Chapter 5); the *modality* (Chapter 6); and possible *rebuttals* (Chapter 6). I shall be looking closely at each of them, for clearly Toulmin's novel approach will stand or fall largely on the attractiveness of the pattern of analysis. In particular, I shall be keeping two questions in mind. First, are the elements clearly explained? Second, is the pattern flexible enough to be universally applicable? Anything less than strong affirmatives means trouble for this theory of argument.

Claim. By this term, Toulmin means "an assertion put forward publicly for acceptance" (29). In the dialectical situation, the claim is implicitly linked to the next element in the pattern – the ground(s). Hence, the claim plays roughly the same role in Toulmin's schema that the conclusion plays in the traditional one. (Toulmin's rejection of the term "conclusion: has an ideological basis, about which more later.) Since arguments (as we have seen) are to be assigned to various fields, it is no surprise that Toulmin holds that claims differ from one field to the next. The procedures required to make good on them differ accordingly.

One can pose questions about Toulmin's conception of a claim. What precisely counts as an assertion? What happens to what would be called, in the traditional schema, an implied conclusion? Will Toulmin have to swallow "implied assertion"? But I do not think these are major problems. Perhaps more to the point would be to note that the section on ambiguous or unclear claims (31f.) was elliptical. In analyzing arguments, one is often confronted by a passage where the conclusion or claim is unclear. It is my experience that what students need are some substantial pointers about how to clarify (and indeed identify in the first place) muddy or ambiguous statements. While it is true enough that context will often help clarify (as Toulmin says), I believe an excursus into the nature and the theory of meaning would serve the aims of argument analysis better still.

Grounds. By this term, Toulmin means to refer to "*statements specifying particular facts about a situation* relied on to *clarify and make good* the previous claim" (33). This

category is meant to capture what would, in the traditional schema, be termed the evidence or support for the conclusion; i.e., the premises. It seems to me that there are several problems with this way of looking at the supporting cast.

First, it seems that the grounds are, *by their nature*, factual. Not only the above text, but others as well, support this interpretation:

> The term "grounds" refers to the *specific facts* relied on to support a claim, (33) (emphasis added)

> *Q*'s demands for grounds is . . . a request for *A* to put into the discussion some body of *specific "facts of the case*" that can be agreed upon as a secure starting point acceptable to both sides and so "not in dispute." (33) (emphasis added)

Unless Toulmin's conception of fact is extraordinarily elastic, this requirement seems unduly restrictive. What happens to arguments in which one normative claim is put forth as support for another? Consider the following example:

> Girls should never touch alcoholic liquors. The reasons are obvious. It is for them to steady the young men, and so maintain their dignity, their beauty, and their intelligence.[5]

On the traditional model, the third statement is the premise supporting the first statement as its conclusion. On Toulmin's model, the first statement is the claim, but can the third be categorized as its ground? Can it be interpreted as stating *specific facts*? Only if we allow for a most liberal interpretation of that category can the statement be construed as a ground.

Second, some of the statements adduced by Toulmin as examples of grounds do not seem to me to fit his definition. Consider this example:

> Just compare them (the Oakland Raiders) with the opposition. None of the other teams has such a combination of offensive and defensive strength. (32)

Can this last statement be viewed as one which gives *specific* or *particular* facts? If we're talking football, the following statements strike me as more suitable candidates:

> Oakland allowed the fewest points per game of any team in the NFL.
> Oakland allowed the least yards per game of any time in the NFL.
> Oakland had the best 3rd down efficiency rating of any team in the NFL.

Toulmin's candidate strikes me as one or two dialectical jumps above the "facts of the case." It is a characterization or interpretation of them. No doubt, such a statement might be offered as evidence for some other claim. But can such a statement be categorized as a *ground*, given Toulmin's definition?

Third, what happens to arguments whose evidence consists in counterfactual conditional statements? I do not know how Toulmin proposes to handle such objections, though he is not unaware of the problems involved in settling on the grounds:

> Not all of the things that *A* initially offers as "facts" need strike *Q* as unquestioned "facts" also . . . As a result, a substantial amount of time may be spent in the early stages of any

> argument, going over the material initially offered by *A* as his supporting "facts," for *Q* must satisfy himself which of *A*'s grounds he must indeed accept as data. (33.f)

Evident in this passage is the influence of the jurisprudential (or dynamic) model, and the time has come to say more about it.

The jurisprudential model. Although Toulmin does not here refer to his model as jurisprudential, still it is the same pattern as was presented in Toulmin (1958), where he made a strong case for dumping the geometric-mathematical model that had dominated logic for so long and replacing it with one patterned on the process of argument found in legal discourse. One is the new pattern of analysis. Another is that the context of argument will naturally be dialectical[6] and greater emphasis will be paid to the process of argumentation. Thus, in the text, Toulmin unveils his pattern of analysis as a series of transactions between *A,* the assertor, and *Q,* the questioner.

There are clear pedagogical gains in this shift. Students can witness and become part of the process of argumentation. They learn what sorts of questions it is appropriate to ask, and at what stage. They develop an appreciation of argumentation as an ongoing process, where claims can be modified and revised in light of criticism. They come to understand that criticism is an integral part of the process, not the enemy. All of this is preferable to the idea that an argument is a one-shot, winner-take-all affair.

But there are problems, too. First, dialectical interchanges between *Q* and *A* will usually be public only in the restricted sense of being available to anyone within earshot. Yet Toulmin has said that the essential locus of reasoning and argument is public, interpersonal and social:

> Wherever an idea or thought may have come from, it can be examined and criticized "rationally" . . . only if it is put into a position where it is open to public, collective criticism. (9)

Those who take the argument-as-product as their focus and try to teach students how to analyze and criticize arguments have no such tension to resolve. The argument on the Op-ed page of the *New York Times* is by its very nature public – an objective entity there for anyone who cares to read and/or lock horns with. But in engaging with that argument, the reader or critic will not have the benefit of having shared in the process that led up to the formulation of the argument. Which brings me to the second problem. There are all sorts of moves open to one who is part of the process that will not be available to one confronted with only the distillate of that process – the argument itself. It we're part of the process, we can ask the arguer to clarify her claims; or restate her grounds; or add to, subtract from or expand upon her statements. But when we've only got the argument itself to go on, none of this is possible.

Perhaps I can illustrate better what I'm driving at here by turning briefly to the Exercises in Chapter 3. There are 20 passages, calling for the student to, among other

things, identify the claim and the grounds given for it. The first 10 examples are straightforward enough; the second 10 are more difficult, perhaps because they have the virtue of being real (as opposed to artificial) examples of arguments. However, because the text has not really prepared them for handling any but the most streamlined of arguments, I think students may find the last 10 examples difficult and frustrating. Toulmin has said nothing about the problem of weeding extraneous material (what I call "clutter") from the argument, nor about deciding precisely what the claim is and how best to formulate it. Partly, one is inclined to believe, these lapses are the result of his having employed the dialectical model. For if *Q* has any doubts, he or she can ask *A* just what the claim really is, and just which statements *A* takes to be grounds. But when the scene shifts, and *Q* is the student working on, let us say, no. 13, a product awaiting scrutiny, then frustration sets in.

Let us, then, look at no. 13, which I shall reproduce here.

> Business doesn't draw up a contract with government; it tries to get the best deal it can in an increasingly coercive society. There is no such thing as voluntary planning. It compels somebody to do something he otherwise wouldn't do.
>
> [Objection from *Skeptic* magazine interviewer]
>
> What if we vote for it?
>
> It's still coercion. You can call it Nazism, or you can call it Communism. You vote away my minority rights to disagree; I don't find that anything but coercion. Majority rule is coercion if it tramples on minority rights.
>
> Robert M. Bleiberg, Editor of *Barron's* is an interview with *Skeptic* magazine.

This is the very sort of passage that is likely to give students fits. Just what is Bleiberg's claim? It might have helped had Toulmin given us some information about the *context* in which this passage occurred. Indeed, the failure to do so seems a serious oversight on the part of someone whose approach places such emphasis on context. Without such information, it is difficult to decide which of Bleiberg's many claims is to be taken as the focal point. Is it: "There is no such thing as voluntary planning"? Or: "Business doesn't draw up a contract with government"? Or: "Majority rule is coercion if it tramples on minority rights"? If we knew the drift of the conversation leading up to this excerpt, we might better be able to decide what Bleiberg's point was, and, indeed, whether this excerpt even qualifies as an argument in the first place.

Here is Toulmin's analysis from the *Teaching Guide*:

> Claim: Business is subject to government coercion.
> Grounds: All government planning with regard to the economy amounts to coercion and can be compared with totalitarianism.

I have reservations about Toulmin's interpretation, but let's grant that this is an argument. Bleiberg did not, as far as I can see, *assert* that "Business is subject to government coercion." He may have made statements which implied or are equivalent to it, but he did

not make that assertion. Yet Toulmin defines a claim as "an assertion put forward publicly for general acceptance." Perhaps Toulmin can get around this by amending this definition of a claim. Even still, it is not at all clear to me that Bleiberg's intent here was to establish that big business is (as a matter of fact) subject to government coercion. It seems rather more plausible to take Bleiberg to be using that fact as a point of departure on the road to claiming that this situation is tantamount to Nazism or Communism. I was also bothered by Toulmin's rephrasing of Bleiberg's statements. Why rephrase, unless it is necessary to do so in order to bring out the meaning more clearly? For such rephrasing runs the risk of distorting the arguer's position, while conferring no apparent benefits.

Well, reasonable men and women may well disagree with one another about the analysis of any given passage. Toulmin realizes this. In the *Teaching Guide,* he says:

> It is important to emphasize that the conception of logic upon which *An Introduction to Reasoning* is based does not admit of final "conclusions" to arguments, nor does it hold that there are any unique "solutions" to the only possible ones: each of them represents one among many possibilities. We present them as conveniences to the instructor. (4f.)

While I admire the forthrightness of this declaration, I must yet admit that I find myself distressed at not being able to fathom how he arrived at his analysis of the above passage! Toulmin is surely right, however, in stating that we cannot expect unique solutions in informal logic. Admit this, and you are on the slope to a pernicious species of relativism, *unless* you are prepared to declare on what basis one analysis is better than another. The problem is thorny enough to make one hanker for the rarefied climes of formal logic – almost!

Warrants. Of all the elements in Toulmin's schemes, the warrant is the one I had the greatest problem understanding. The intuitive ideal seems clear enough, but (as I will try to show) Toulmin's rather breezy style of exposition creates some of the confusion. Then, too, this is the element that departs most radically from the traditional schema, thereby forcing one to look at the structure of arguments in a different light. That takes some getting used to. Grounds, after all, may be readily compared to premises, and claims to conclusions. But there is no counterpart for the warrant. I will therefore, first attempt to set out as clearly as I can what Toulmin means by the term, and then present my difficulties with it.

Simply stated, a warrant is a *link* between the grounds and the claim. Toulmin writes: "Put colloquially, the question at the level of the warrant is not, 'What do you have to go on?' but "How do you get there?" (44). The warrant then justifies passage from the grounds to the claim.

It is tempting, but mistaken, to think of a warrant as nothing more than a formal rule of inference. Toulmin addresses this point explicitly in the *Teaching Guide* (it would produce needless confusion to deal with it in the text):

> The rules of inference appealed to in formal logic (*modus ponens*, for example) are designed to guarantee merely the "formal consistency" of the premises and conclusion, in an argument whose structure has been set out in the manner required, but the warrants that serve as "rules" for connecting data and claims in our present analysis are intended to insure the substantive soundness of the steps in question ("From smoke, you may infer

> fire"). So substantive warrants are both more specific and concrete in their content and also more open to challenge than formal rules of inference. (17)

At the very least, Toulmin thinks that there is a categorical difference between warrants and the rules of inference of formal logic. In this, I think he is right.

It is also tempting to think of a warrant as nothing more than a missing or suppressed premise, conditional in form, whose antecedent contains the data or grounds, and whose consequent contains the claim. I doubt that Toulmin would accept this view, but I'm not sure (given what he says about warrants and some of his examples) that he can forestall it. Let us see.

Toulmin first introduces the term in Chapter 1:

> (W1) Steps from grounds to claims are "warranted" in different ways in law, in science, in politics, and elsewhere. The resulting warrants take the form of laws of nature, rules of thumb, engineering formulas and so on. But in a practical case, some appropriate warrant will be needed if the step from the grounds to the claim is to be trustworthy. (26)

Here warrants are spoken of as steps. They are also (by implication if not direct statement) field-dependent; i.e., restricted in scope to some specifiable field or rational enterprise. And it is further clear that what makes something a warrant is its *function* rather than any intrinsic feature.

To further verify the most recent point, one has only to notice the variety of descriptions Toulmin has given of warrants. In Chapter 4, he introduces them in this way:

> (W2) Now the questioner asks for *warrants*, that is, statements indicating the *general ways of arguing* being applied in each particular case and *implicitly relied on* as ones whose *trustworthiness* is well established. (43)

He then goes on to make all of the following claims about warrants:

> (W3) Such a general, step-authorizing statement will here be called a warrant. (44)
> (W4) a license to argue from grounds to conclusion . . . (45)
> (W5) The questioner, *Q*, must now inquire about the general rule or procedure that the assertor, *A*, is relying on in presenting the step from *G* to *C* as a trustworthy step. (44)
> (W6) Many kinds of general statement authorize the inferences by which different collections of specific information . . . are put forward as rational support for the claim. (53)

In the *Teaching Guide* we find these statements about warrants:

> (W7) . . . the strength of reasoning depends upon the rules or "warrants" that stipulate just what kinds of information are relevant to answering questions about the subject in hand. (*TG*, 17)
> (W8) . . . warrants . . . serve as rules for connecting data and claims . . . (*TG*, 17)
> (W9) Warrants are rules that enable us to "make sense" of situations. (*TG, 18*)
> (W10) Warrants are often merely assumed tacitly or, as we say, "taken for granted."

This medley of descriptions might be confusing to someone who is trying to master the meaning of a familiar term, here being put to special use. (W2, (W3), and (W6) all characterize warrants as *general statements;* (W5), (W7), (W8) and (W9) all describe warrants as *rules*; (W4) refers to a warrant as a *license*, and (W10) introduces the notion of an *assumption*. One suspects that, in the long run, all of these descriptions may prove quite compatible. In the short run, however, the sheer variety is more likely to engender confusion than understanding.

Toulmin may indeed be aware of this point, for he says:

> Historically speaking, the term has always had close associations both with the notion of a license or permit and also with that of a warranty or guarantee. (45)

Whether this usage note can provide the much-needed unifying thread for Toulmin's various statements about warrants remains to be seen.

Let us look at some examples of warrants. The first exchange Toulmin produces is this:

> A: There's a fire!
> Q: Why do you say that?
> A: The smoke – you can see it.
> Q: So?
> A: Wherever there's smoke, there's a fire.
>
> Here is its warrant:
> (1) Wherever there's smoke, there's a fire. (44)

About this statement, Toulmin says:

> This last statement has the effect of authorizing the step from *G* (the smoke) to *C* (the fire). We can in fact read it as meaning, "Wherever smoke is visible, *it can be concluded that* there is fire also." (44)

This translation gives me pause. It is well known that any *general statement* can be given that sort of reading, and hence is potentially a warrant. But what's to prevent us from giving singular statements the same sort of reading? Thus, "Ronald Reagan is visible, is the 40th President of the United States" can be read as meaning "Wherever Ronald Reagan is visible, it can be concluded that there is the 40th President also." And if this move is allowed, then warrants need not be general statements or rules at all.

Before looking at additional examples, I need to mention one important point about warrants: they are field-dependent. This is clear both from the way that Toulmin has introduced the notion, and from passages like this one:

> Wherever a fully established and articulated body of knowledge exists . . . we commonly find such warrants recognized and put to use. In other fields, however, it may be harder to articulate all the warrants employed by an argument, in the form of laws, rules or principles. (49)

In looking at the examples, it will be useful to keep these two questions in mind. *First,* which of the many descriptions of warrant does this example fall under? *Second,* what field does the warrant belong to?

Example:

> Wife to jealous husband: " You only saw me walking to the bus stop with one of the men from my office and you at once jumped to the conclusion that I was having a clandestine affair: that inference was quite *unwarranted*."

Warrant:

(2) If a woman is seen walking down the street with a man whom her husband does not know, it may be concluded that she is having a clandestine affair with that man. (45)

This is a general statement in the sense of (W2), but it is difficult to assign it to any field.

(3) [Toulmin refers to] the general formula that relates the breaking strain of a girder to its shape and dimensions . . . (47)

No problems with the field here: engineering. And (3) seems covered by (W6).

(4) Anyone who leaves a car in a metered parking space without putting money in the meter can be found guilty of an offence. (48)

This statement sounds much like a warning as it does an inference ticket. Toulmin cites it as an instance of a warrant from the field of law.

(5) It is unjust to expect your wife to give up her spare time to baby-sit without ever taking a turn yourself. (49)

This is cited as an instance of a warrant from ethics. It is a normative ethical claim, but it lacks the generality that one expects of a warrant.

(6) Pallor, lethargy, and a low fever often means viral or bacterial infection, or exhaustion from overwork, or, in a few cases, neurotic stress.

This is a piece of medical knowledge, one supposes.

(7) This particular combination of pallor, low fever, lethargy, etc., which Dr. Bernand's experience enables him to recognize, generally means (i.e. entitles us to have some confidence in inferring) a virus infection. (51)

The field, once again, is medicine, but the highly specific nature of this claim makes it difficult to fit under any of the descriptions offered by Toulmin.

(8) Anyone who seeks to work only at what is rewarded is not conscientious.

Toulmin produces this example as a warrant from the field of psychology. But it seems to me rather to be a tautology, or analytic truth.

Still somewhat confused, I thought it advisable to work through the Exercises for Chapter 4, which require the student to identify the warrants appealed to in the arguments.

Example 1. Argument (53).

> For some periods, as between 1936-1939, and 1949-1953, it is insufficient to describe the U.S.S.R as totalitarian – it was in fact what could be called a terror-society, where no citizen, regardless of his position or the degree of loyalty to the regime, could feel safe.
>
> The landscape of Soviet politics remained one of a surrealist painting; it became crowded with phantasmagoric figures of traitors, saboteurs and class enemies.
>
> The once leading personages of the party, government, and the armed forces were "unmasked," and in many cases were coerced to admit publicly having been agents of Hitler, the Japanese militarists, the British Intelligence or (following the war) of the American imperialists and Zionists.
>
> *The Boston Globe*

Toulmin and I came up with quite different warrants here:

(Toulmin) A society that conducts its public affairs in the style of a surrealistic painting can be regarded as worse than totalitarian. (TG)

(Johnson) When the leading persons of the government, the party and the armed forces are coerced, then such a society can be called a terror-society – something worse than being called totalitarian.

I am not sure what field either of these alleged warrants belongs to. The difference in our formulations may, in part, stem from some disagreement over the grounds. Toulmin has focused on the second paragraphs of the example, whereas I have focused on the third. I believed my focus is more appropriate since (a) grounds are supposed to be factual in character and (b) the third paragraph seems more factual than the second; i.e., it would be easier to substantiate. Hence our different ways of formulating the warrant here seem to be traceable to variant interpretations of how the argument works.

Example 2. Argument (54):

> The harder some people work the less they seem to accomplish. This is not an axiom but a fact. You know the men and women who are conscientious, energetic, anxious. Their production instead of being profitable, however, is either just enough to take care of their needs and obligations, or they are at the brink of economic collapse.
>
> Some of the great minds in the world have grappled with this subject and have been unable to devise a specific formula that would help a willing worker to build up a foolproof financial competence. The trouble is that social and economic formulas do not take into consideration the complex structure of the human soul, whereas Astrology does. And if astrology were allowed to solve some of the social and economic riddles of the world today perhaps there would be a whole lot fewer of them.
>
> The answer to almost any problem is written in the sky, and until a simpler and more accurate method is found, why not analyze your problem according to astrology?
>
> *Horoscope Guide*

Once again, Toulmin and I agree about the claim but disagree about the grounds, which will naturally affect the formulation of the warrant. Here is Toulmin's view:

> Many conscientious, energetic individuals do not get ahead. The great minds of the world have not been able to assist them. (*TG*, 20)

I agree with this, but would add:

> Astrology takes account of the complex structure of the human soul, whereas other social and economic formulas do not.

In fact, I do not see how Toulmin can justify omitting this statement as a ground, since it is clearly meant to support the claim.

This is how we each formulated the warrant:

(Toulmin): If conscientious individuals fail financially and if the great minds of the world cannot find some solution in ordinary economics, then those who seek financial success ought to try astrology to find a way to financial security. (*TG,* 20)

Mine is even more cumbersome:

(Johnson) If conscientious individuals fail financially and if the great minds of the world cannot find some solution in ordinary economics, and since astrology takes account of the complex structure of the human soul, whereas other social and economic formulas do not, and since the solution to financial problems requires an understanding of the complex structure of the human soul, then those who seek financial success ought to give astrology a try.

Neither warrant is easily identified as belonging to any field and neither seems readily classifiable as either a rule or general statement.

Example 7. Argument (55):

> Larry J. Hillis, of Altus, Okla., reported to the National Highway Traffic Safety Administration that, in a distance of 20,623 miles his new car has been shot with 11 uniroyal steel-belted radials. One blowout three days after he bought the car; two more replaced within 12,000 miles; four tires cracked and split in the sidewalls and rim.
> "All the time with the tires it has been the same problem," Hillis wrote, "cracking and splitting around the rims, rounding on the edges and wearing improperly."
> He insisted that he kept the tires "properly inflated and rotated, balanced and aligned." We feel there is a defect somewhere.
>
> *The Boston Globe*

I found that Toulmin's analysis of this very unsatisfactory, for it seems to distort the original argument. Once again, the problem lies in how the grounds (and hence the warrant) are to be formulated. Here is Toulmin's version:

> Larry J. Hillis bought eleven Uniroyal steel-belted radials, all of which cracked and split. (*TG*, 21)

The original text of the argument reads quite differently:

> "All the time with the tires it has been the same problem," Hillis wrote, "cracking and splitting around the rims, rounding on the edges and wearing improperly." (55)

This is further clarified by the lead-in:

> One blowout three days after he bought the car; two more replaced within 12,000 miles; four tires cracked and split in the sidewalls and rim (55)

So apparently only four of the eleven tires cracked and split in the sidewalls and rim – a quite different state of affairs than Toulmin's version suggests. A more accurate formulation would be:

> Larry J. Hillis bought eleven new Uniroyal steel-belted radials, seven of which proved to be defective.

But this is not all, for the original also contains this information:

> He (Hillis) insisted that he kept the tired "properly inflated and rotated, balanced and aligned."

Fully-expressed, then, the grounds would be as follows:

Larry J. Hillis bought eleven new Uniroyal steel-belted radials, seven of which proved to be defective. Hillis took proper care of the tires.

Again differences in the ways the grounds are formulated will spawn different warrants:

(Toulmin) When an individual buys a lot of new tires from one manufacturer, all of which turn out to be defective, the manufacturer must be at fault. (TG)

(Johnson) When an individual buys eleven new tires from one manufacturer and takes proper care of them and seven turn out to be defective, the manufacturer it at fault.

I must admit that it is not clear to me how far the differences between Toulmin's warrants and mine are to be explained by different interpretations of what is being argued and how far by my difficulties in understanding the very concept of a warrant. But let me try to bring this section to a close by mentioning, once again, the main difficulties I have encountered.

Toulmin's explanation of the concept of a warrant is loose rather than tight. He gives us a number of different descriptions of, or ways of looking at, warrants which may all be compatible but whose unifying thread is not apparent. Some of the examples are not easily sorted out under any of the available descriptions. These problems may be only expository in nature.

I think this is not the case with the idea that warrants are field-dependent. Many of the warrants Toulmin cites as examples do not seem to me to belong to any identifiable field. But this only raises another problem. *What is to count as a field?* Law and science qualify, of course. Does astrology? Does common sense? Does philosophy? And what happens when, as is often enough the case, an arguer provides grounds from different fields? Obviously no one warrant will suffice to link the grounds with the claim, unless the already nebulous concept of a field is to be extended to allow for *super-fields*!

Well, these are problems I would gladly embrace, if only it were clear that Toulmin's new schema pays big dividends. But that is far from clear. If one looks carefully at the warrants Toulmin provides in the *Teaching Guide* for the exercises, one cannot help but be struck by the fact that 7 out of 10 of them (i.e., #2, #3, #4, #5, #6, #7 (arguably), and #10) turn out to be the sort of "if . . . then" conditional proposition that a quasi-deductivist would supply as missing premises in reconstructing the argument using the traditional schema.[7] That is bad enough, but matters are worse still. Toulmin gives very little advice about how to go about formulating warrants. In recent years, however, informal logicians still operating more or less within the traditional schema have made some strides in handling missing premises. They have, for example, articulated the Principle of Charity, which requires that the critic be scrupulous not to overcommit the arguer when filling in missing premises. Not only does Toulmin say nothing whatsoever about this important principle, but his own examples contain repeated violations of it, as we have seen. A new paradigm may well be expected to cause changes in the very nature of what is seen as a problem. In this case, we seem to be confronted with the loss of a problem (missing premises and how to formulate them), but I am not sure that its disappearance should be construed as a step forward.

Backing. The next element in the pattern is the backing for the warrant. The dialectical situation is this: *A* has made a claim for which grounds have been produced. *Q* has challenged *A*'s move from *G* to *C*. in response, *A*, has adduced warrant, *W*. But, as

Toulmin says, "*warrants are not self-validating*" (58). *Q* may rightly seek justification for the warrant in either of two directions:

1. "Is that warrant reliable at all?"
2. "Does that warrant really apply to the present specific case?" (58)

To answer either of these questions is to provide the warrant with its backing.

The relationship between a warrant and its backing is close:

> A warrant and its backing are related in very similar ways in many different contexts in argumentation. But the kinds of substantive considerations that actually support our warrants vary greatly between different enterprises and fields of argument: in scientific, medical and legal arguments, in discussions about sport, art or business, in abstract discussions of pure mathematics, our warrants derive their foundation and authority from backing of quite different sorts. (62)

Again we see the influence of the assumption that arguments can be sorted into different fields, though it must be clear that discussions about sport constitute a field in a very different sense than do abstract discussions of pure mathematics. Since the concept of backing is so closely tied with the concept of a warrant, I shall say no more about it here.

Modality. The fifth element in Toulmin's pattern is the modality, or modal qualifier. By this term, Toulmin means "phrases showing what kind and degree of reliance is to be placed on the conclusions, given the arguments available to support them" (69). The modal qualifier indicates how strong the arguer thinks the connection is between the grounds (plus warrant and backing) and the claim. Examples of modal qualifiers are words and phrases such as: "necessarily," "certainly," "presumably," "in all probability," and "for all we can tell."

Toulmin shows how modal qualifiers operate in fields such as law, medicine, and science, but insists (and rightly so) that modals play an important role in everyday arguments as well:

> Whatever other differences there are between the modes of argumentation appropriate to our different activities and enterprises, we frequently have occasion:
>
> 1. To present our claims tentatively, without staking out whole credit on them.
> 2. To put them into debate in an uncommitted way, merely for purposes of discussion.
> 3. To treat them as serious but conditional conclusions.
> 4. To offer them simply as a good bet.
>
> As a result, the relevant modal qualifiers . . . have a part to play in all kinds of arguments. (74)

This is well said, though the last statement is weaker than one made earlier: "In a word, every argument has a certain *modality*" (70). Toulmin's position here is probably best construed as one which prescribes an ideal rather than describing what is the practice. In my experience, modals show a relatively low incidence of occurrence in everyday arguments. People generally do not say what sort of strength their evidence is meant to provide for their claims. It would be better if they did. Surely one of the purposes of an introductory logic course is to acquaint the student with the use and the importance of

model qualifiers. Toulmin's text does an excellent job on this count and deserves much credit for its fine presentation of this much neglected facet of argument analysis.

Rebuttals. The last element in the pattern is the rebuttal; that is, the mention of "the extraordinary or exceptional circumstances that might undermine the force of the supporting arguments" (75). These may be built into the argument to indicate what sorts of conditions might vitiate it. I have no problems with this idea, and found Toulmin's presentation both innovative and lucid.

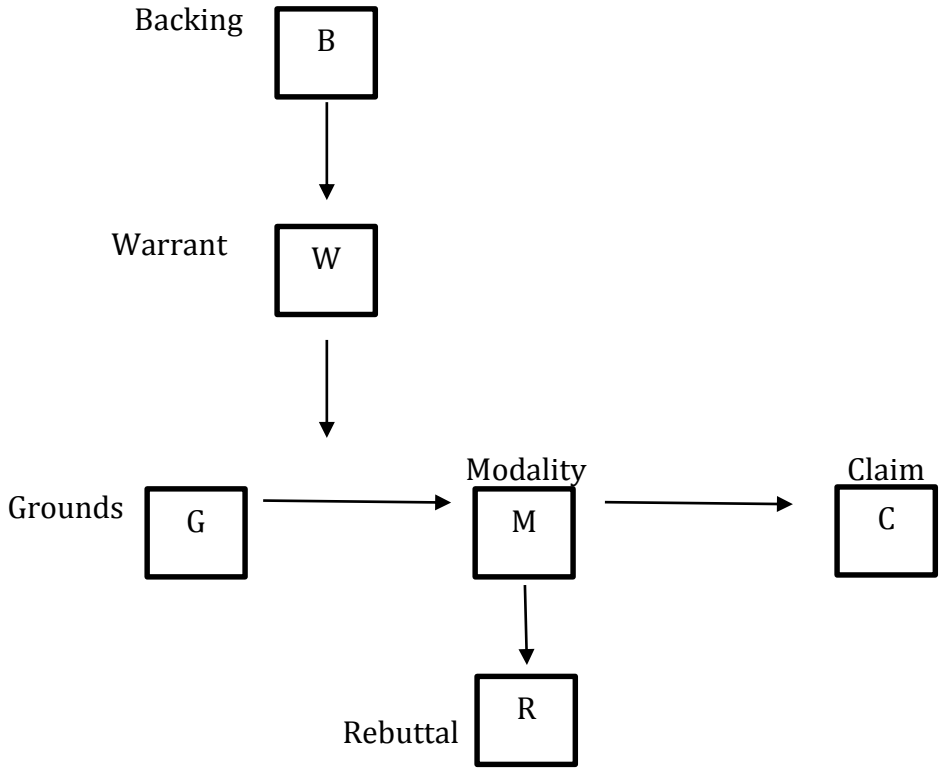
The question of how far one should go in qualifying one's claims is not something Toulmin believes can be given a fixed answer. Rather it is a matter for pragmatic choice:

> To avoid an excess of small print, we must spell out at sufficient length the kind of expectations, exclusions and other rebuttals that limit the force of our arguments. To avoid gobbledygook, we must prevent the recital of exceptions from getting too long . . . Where is the line to be drawn? That decision can be made only when we know enough about the audience (laymen or attorneys), the forum of argumentation (law court or office) and the general purpose of the particular discussion in question. (81)

Notice that here Toulmin has switched gears and is speaking not so much of the analysis and criticism of arguments as of their construction. One of the best features of Toulmin's approach is that it is serviceable in both departments: analysis and construction. Those instructors who, like myself, have become convinced that introductory logic courses should deal with both departments will very much appreciate this feature of Toulmin's text.

Of course, students, will have to be advised that skill in argument construction forces one outside the realm of logic proper; they will need to have both an adequate grasp of the issue and a sufficient supply of information. The Exercises for Chapter 6 will help underscore these points. Students will find it difficult to formulate possible rebuttals to arguments without some working knowledge of the issues. For example, the rebuttal to the claim that water should be thrown on burning materials to extinguish them is: "Throwing water on burning oil is very dangerous, for it will spread the fire" (*TG*, 30). The average person should know this, but the point is that logic will not confer this knowledge.

All of the elements are now in place, and the chart below shows how one would diagram an argument using this pattern of analysis.



Given grounds, *G,* we may appeal to warrant, *W*, (which rests on backing, *B,* to justify the claim *C* – or, at any rate, the presumption (*M*) that *C* – in the absence of some specific rebuttal or disqualification (*R*)).

C. Summary

To bring this part of the review to a conclusion, I shall state what I take to be the cardinal features of Toulmin's theory of argument along with my reservations about them. In essence, Toulmin's theory of argument has three components:

(A) The *conception* of reasoning and argumentation as dialogical and pragmatic in character rather than static and syntactic;
(B) The *new schema* or *pattern of analysis* for arguments, whose elements are these six: claim, ground, warrant, backing, modality and rebuttal;
(C) The assumption that each and every argument can be assigned to some specific field or enterprise

(B) and (C) reinforce one another, since many of these elements in the schema (notably, warrants and backing) are intelligible only under the assumption that arguments are field-related.

About (A): I think it is high time that someone tried this experiment. As I stated in Part 1, our conceptions of logic and argumentation have undergone very little expansion or revision since the time of Aristotle. The reign of the geometrico-mathematical model has

gone virtually uncontested. Indeed, it has if anything been strengthened by the rise to prominence of mathematical logic, following Frege's pioneering work. The philosophical assumptions behind the old logic have been subjected to vigorous challenges in the philosophical works of Peirce, Dewey and Wittgenstein, to name but a few. Close connections between the assumptions and ideals of traditional logic and the perennial specter of skepticism have been noted by many, Toulmin among them. We may like to think that logic, since it is only an instrument, is free of ideological or metaphysical influence. But that is an illusion, it seems to me. Hence it is healthy to have Toulmin actively promoting a new conception of reasoning and argument (and logic) within the matrix of this experiment. Indeed, Toulmin notes how the old terminology reinforces the ideal behind the old logic:

> We have stated the elements of our analysis independently of the traditional terminology of formal logic (*premise-conclusion,* for example), not merely to set out mode of analysis apart from the traditional one, but also to emphasize that what we are doing involves a different conception of logic from either syllogistic or symbolic logic. These latter have more in common with each other than they do with the sort of analysis we are developing. Thus we speak of arguments as "supporting claims" rather than as "leading to conclusions," because the nature of claims is such that they can be reformulated. The term conclusion suggests the reaching of an end point, rather like the *quod erat demonstrandum* of the geometers. (*TG*, 8)

Aside from the new reservations mentioned earlier (pp. 113, 115-17), this aspect of Toulmin's approach works well.

About (B): there are two questions that must be asked in evaluating the success of Toulmin's new pattern of analysis: (B1): Is the pattern viable? Are its elements clearly conceived and explained in the text? (B2): is the pattern adequate? Can it be applied to all sorts of arguments?

Throughout Part 2 of this review, I have indicated the problems I have encountered in attempting to understand some of the elements of Toulmin's schema, principally (though, not exclusively) with warrants. Part of the problem may lie in Toulmin's rather breezy style of exposition, but I am not sure that this is the whole problem. Then, too, I had some troubles with his conception of grounds, which seemed to me too restrictive. My answer to (B1) then is that there are grounds for wondering whether the pattern is viable, but I would not want to make any final judgment until Toulmin has had a chance to tighten some of the conceptual screws.

I have rather more serious doubts about whether the pattern can be applied to all sorts of arguments. These come from two different directions. First, the sort of argument that Toulmin chooses to illustrate his pattern is streamlined; that is, it is short and has very little internal complexity. So it is not clear to me how this pattern will be deployed in the analysis of what I call, following Kahane (3e 1980: 143), extended arguments. It seems to me that it will be both awkward and tedious to attempt to decipher the structure of, say, a 5,000-word editorial using this pattern and method of diagramming. Perhaps it will be possible to decompose such extended arguments into smaller, more manageable chunks which can then be digested by the pattern. But should the tail wag the dog? Since, as I have argued elsewhere, the analysis of extended arguments must be viewed as the primary

target (see Chapter Three above), it seems desirable to devise a procedure for dealing with them in their integrity. So Toulmin's pattern runs into some problems here.

About (C). The other doubt I have about the universal applicability of the pattern dovetails with reservations I have about the assumption that arguments can be assigned to fields. I shall cite an argument which is, I think, quite typical of the sort found in everyday discourse, but to which it is difficult to apply Toulmin's pattern.

In the 1980 elections, Californians had to vote on Proposition 10, which would have limited drastically the places where people could smoke in public. The debate was heated. Here is a typical argument presented in favour of the Proposition:

> Californians should vote for Proposition 10 because (1) the medical evidence is clear that smoking represents a health threat to non-smokers and (2) it is clear to anyone who knows smokers that they will not themselves freely choose to limit their smoking and (3) such a proposition would entail minimal costs.

In the first place, I find it difficult to assign this argument about a social and political issue to any specifiable field. Perhaps this is because Toulmin never says precisely what counts as a *field*. He gives examples like law, medicine, science and engineering. He uses cognate terms like *forum of argumentation, rational enterprise* and *context*. But so far as I can tell, he never gives a precise definition of any of these terms. Since so much of Toulmin's approach depends upon the concept of a field, the failure to define it carefully seems to me a serious *lacuna*.

Second, as to the analysis of this argument, there is no problem with the claim or the grounds. But is there to be one warrant, or three? If one, then I fail to see how that warrant can be located within any specifiable field. Suppose, then that we connect each ground to the claim with a warrant of its own. How would the warrant for (1) be formulated? We might suggest

> Whenever there is a health threat to members of the public, there should be a law protecting members from that threat.

What field underwrites this warrant? Similar questions will, I believe, arise as warrants for (2) and (3) are fleshed out. But there is another, potentially more serious, problem. In this particular argument, it seems to me that none of the grounds is meant to function independently of the rest. The arguer is relying on their cumulative weight. Hence any attempt to tie the grounds individually to the claim will result in a distortion of the argument. And so we are back to the first, but equally unsatisfactory, alternative of attempting to formulate some one warrant that will link all three grounds to the claim. But I doubt that this can be done for here we have an argument which straddles several fields (speaking loosely), crosses over borders, and is otherwise geographically messy. Yet the very fact that this argument seems to me quite typical of those found in everyday argumentation causes me to have real reservations about the universal applicability of Toulmin's pattern. For the assumption on which the model rests depends for its credibility on a concept (field of argument) for which Toulmin has not provided a satisfactory elucidation.

For the reasons indicated, therefore, I must conclude that Toulmin's theory of argument, as intriguing and exciting as it may appear to be, faces some severe challenges before it can be deemed successful.

3. Toulmin's Theory of Criticism

The purpose of Part III, says Toulmin, is to shift the focus from the abstract, general level of Parts I and II to consider how reasoning actually works, and to questions that arise when arguments encounter criticism in actual practice. This description is not entirely accurate. After all, Parts I and II have not been all that abstract and indeed have at times prefigured the theory of criticism that becomes explicit here. It is also that theory that I shall address myself, though I also want to say something about Toulmin's position on two other topics: the burden of proof, and fallacies.

A. Standards of Criticism

Let us assume that we have adopted Toulmin's pattern of analysis. Once we have laid out the structure of the argument, what will be the criteria or standards by which we assess it? Recalling an earlier passage in which Toulmin stated that some standards are field-invariant while others are field-dependent, let us review the criteria that have emerged prior to Part III.

Here is what Toulmin says in Chapter 2:

> The *claims* involved in real-life arguments are, accordingly, *well founded* only if sufficient *grounds* of the appropriate and relevant kind can be offered in their support. These grounds must be connected to the claims by reliable, applicable *warrants*, which are in turn capable of being justified by appeal to sufficient *backing* of the relevant kind. (27)

Here, Toulmin suggests that there are three standards or criteria to be used in assessing the grounds: (1) sufficiency; (2) appropriateness; (3) relevance. The standards for warrants are two: (1) reliability; (2) applicability. The standards for the backing are two also: (1) sufficiency; (2) relevance.

In chapter 3, however, a slightly different picture emerges.

> What makes one particular set of grounds or facts acceptable and relevant for the purposes of this or that specific claim? (34)

Here the standards for appraising grounds are (1) acceptability and (2) relevance. Sufficiency and appropriateness have been dropped from the previous list and acceptability has been added. I find this sort of shifting around distressing, the more so because this is not an isolated instance. Moreover, of the four criteria for the appraisal of grounds mentioned thus far, Toulmin attempts an analysis of only one – relevance.

Toulmin on relevance. One of the knottiest problems for logicians, both formal and informal, has been the concept of relevance. A formal analysis of the concept appears little more than a hope destined to be frustrated, in spite of the heroic attempts by Belnap and Anderson. Informal analyses have not fared much better. Yet argument analysis is hopelessly paralyzed unless the critic has mastered the art of making judgments about relevance, and defending them.

Toulmin's position does not advance matters very far. He asks: "What makes one particular set of grounds or facts acceptable and relevant for the purposes of this or that specific claim?" (34) Knowing Toulmin's predilection for pivoting his position around the concept of a field, the reader will not be surprised at Toulmin's answer:

> In certain respects, the *conditions of relevance* of grounds are fully intelligible only when we take into account the larger demands of the rational enterprise within which *A*'s claim is presented . . . The precise status of *A*'s claim (as a scientific hypothesis, a criminal indictment, or a medical diagnosis, say) will determine the criteria by which he can select certain items of information as being *to the point* for scientific (or legal or medical) purposes, while setting others aside as being *beside the point* and having nothing to do with the case.
>
> Accordingly, *relevance* is a substantive matter, to be discussed in science by scientists, in law by lawyers, and so on. There are very few "conditions of relevance" of an entirely general kind that hold good in all fields and forums and apply to all types of arguments. (34)

I find this somewhat bewildering. On the one hand, Toulmin says that relevance is a substantive matter. Presumably this means that determinations of relevance are contextual in nature and that field-invariant criteria are not available. But then he goes on to suggest that *there are some* ("very few") conditions of relevance that are universally applicable; i.e., field-invariant. Now, so far as I can see, Toulmin nowhere lists any such conditions, which leads me to think that he does not really mean this. So I take it that his real position is that relevance is a substantive matter.

There is something to be said for this view. Certainly we should not expect laymen to be able to make judgments about relevance in the fields of law and medicine with any degree of reliability. But this fact constitutes a strong argument for the contextual position only if we grant the assumption underlying it: that all arguments can be assigned to fields and that all fields resemble, in the significant respect, those of law and medicine. Since I am reluctant to give Toulmin that assumption, his position on relevance, though plausible, requires further support.

Let me return then to what Toulmin says about standards prior to Part III. In Chapter 5, while speaking of backing, he says this about warrants:

> . . . it is one thing to state a warrant, but it is quite another thing to show that it can be relied on as sound, relevant and weighty. (58)

Here again we find that the criteria suggested for the appraisal of warrants differ from those mentioned earlier. Here Toulmin has added soundness, relevance and weight as criteria to be used in evaluating warrants.

In Chapter 7, Toulmin makes the point that the elements are functionally interdependent, but once again we find him juggling the criteria for grounds:

> We need to remark on three points in particular about this interdependence. First, the *relevance* of any factual information (grounds) to a claim depends in part on the general rules, principles, or other warrants available for legitimating claims of the type in question . . . That is to say, in order to ensure that our grounds are not merely true but also weighty

> and relevant, we must look at the warrant relied on to authorize the step *from* these facts to the present claim. (85)

So apparently, we must add to the list of criteria for appraising grounds two more: truth and weight. That aside, we need to understand that Toulmin's basic point here is that the elements are not to be evaluated in isolation.

> There will be no question, for instance, of completing the scrutiny of the grounds entirely before we have looked at warrants, backing and all the rest. Our critical judgment of the acceptability of any one element will remain only provisional until the whole argument has been set out explicitly and we have had the chance of checking back on the bearing of possible rebuttals, on the relevance of the grounds, and on the applicability of the warrant. (86)

We come then, finally, to Chapter 8, where Toulmin's account of the standards to be used is scaled down considerably. As if to summarize those earlier discussions, Toulmin says:

> It must be clear what *kind* of issues the argument is intended to raise (aesthetic rather than scientific, say, or legal rather than psychological) and what its underlying *purpose* is. (106)

In other words, we have to be able to assign the argument to some field or rational enterprise.

> The *grounds* on which it rests must be relevant to the claim made in the argument and sufficient to support it. (106)

Here Toulmin mentions only *two* of the six criteria that have cropped up in earlier passages. What, we must wonder, has become of the other four? Perhaps *appropriateness* is only a synonym for relevance, and possibly *weight* is just another term for sufficiency. But what of acceptability? And truth? Are these criteria to be used in evaluating the grounds, or not? If they are, what is meant by them? No satisfactory answers are given to these questions.

> The *warrant* being relied on to guarantee this support must be applicable to the case under discussion and it must be based on solid *backing*. (86)

Here only one of the criteria listed before turns up: applicability. What has happened to all the others? What is meant by *solid* backing?

> The *modality*, or strength, of the resulting claim must be made explicit, and the possible *rebuttals*, or exceptions, must be well understood. (86)

Does this mean that if an argument is put forth without any modality (as, I believe, happens quite regularly), we may criticize the argument for that omission? Does such a mode of criticism, if it is one, deserve to be ranked with, for example, a criticism of the grounds as

irrelevant? Questions like these receive no answer in the text, which must be accounted a fairly serious criticism.

The topics covered in the remainder of Chapter 8, though not without merit, do nothing to remove the clouds that hang over Toulmin's theory of criticism. He contrasts the merits of pairs of arguments from various fields and is able to show why, in each instance, one of the pair is a better argument than its partner. Cross-type comparisons are ruled out, however. An illuminating section contrasting adversary with consensus procedures concludes with the crucial point:

> *Context determines criteria.*
> In what terms we criticize and judge the merits of particular arguments and claims depends on their "type" and so on their "field." Whether it be politics or ethics, science or aesthetics, psychiatry or law, the underlying goals of the human enterprise concerned determine the fundamental context for the arguments and claims in question, and so give them their power to "carry conviction," by establishing claims on a secure basis. (120)

The question of how far Toulmin is willing to go in the direction of "field-invariant" standards has become unmistakably clear. Standards or criteria are context or field-dependent. Nowhere has Toulmin cited a single instance of a "field-invariant" standard or rule of procedure, in spite of hints in the early going that there are some. Nor should one be misled by Toulmin's apparent willingness to cite standards like relevance and sufficiency, for these turn out, on analysis, to be field-dependent.

Hence, Toulmin's position on criteria of evaluation comes very close to relativism, a point that he himself is cognizant of. In the *Teaching Guide*, he says:

> The second main point presented in this Chapter (Chapter 8) has to do with our seemingly "relativist" – not by no means arbitrary – approach to argumentation. Arguments can be rationally compared, only when they have to do with the same substantive questions. This means that our ability to argue effectively is directly related to our knowledge of the subject under discussion. (*TG*, 35)

If this is meant to be a rejoinder to the charge of relativism, it is not very satisfying. First, the question of what sorts of criteria there are for the evaluation of arguments is not restricted to the *comparison* of arguments. It has to do as well with the evaluation of individual arguments. That such evaluation must get along without field-invariant standards has not been shown. Nor does this follow from the fact that in order to argue and appraise arguments, we must have some knowledge of the subject under discussion. For it might also be argued (by the non-relativist) that we also must have a knowledge of the standards and criteria of good arguments, and that these standards are not all field-dependent. Perhaps some form of relativism is inevitable, but Toulmin has not, I think, shown this to be the case.

Let me summarize my problems with Toulmin's position on standards and criteria before making two final points. Toulmin's treatment of this business is very loose: he never seems to give the same list of standards twice and he does not provide the reader with much of an analysis of any of them, except relevance. There are apparent inconsistencies in what he says, which are most easily reconciled by taking Toulmin to be advocating the view

that all standards or criteria are field-dependent. Not only does this involve the problems earlier mentioned (above pp. 130f) about the whole notion of a field, but it also takes him in the direction of relativism – a position he apparently wishes to embrace but has not provided adequate arguments for.

In addition to all this, Toulmin says nothing at all about the need for discrimination in criticism. Certainly, an argument which has omitted a modal qualifier is not guilty of a logical failing that is of the same magnitude as an argument that has been found guilty of producing irrelevant or insufficient grounds. To be an effective critic, one must be able to make such discriminations, but Toulmin says nothing about this important matter. Finally, I think it would have been useful had Toulmin taken a specimen argument and subjected it to the sorts of criticism which, on his theory, are appropriate. That would have given the reader a richer understanding of how standards and criteria are brought to bear on arguments, once they have been analyzed.

B. Burden of Proof

In Chapter 9, Toulmin spends some time on the question of where the burden of proof lies in an argument. This is a subject of some importance yet one too rarely dealt with in introductory logic texts. Although Toulmin's treatment contains nothing new or astonishing, it is quite well worked out and presented and should perhaps serve to restrain the polemical sort of student who wants to challenge everything. For, as Toulmin says, "it is only when enough has been said to create a genuine and specific ground for doubt that there exists an occasion for rational discussion." (123)

The example Toulmin uses here is a timely enough one, about the use of food additives. The question is this:

> Should commercial food processors have been in the position, all along, of having to justify their use of particular additives in advance of actually using them? Or was the initial burden, rather, on biomedical scientists and the FDA to "show cause" by producing scientific evidence of risk? (125)

Toulmin does not answer this question directly. Such questions are hard to answer, as he notes in the *Teaching Guide*:

> Questions about "the burden of proof" are very important for criticism in concrete cases. Unfortunately, whereas the law has clear procedures for determining just what has to be demonstrated by whom and in what order, there are very few guidelines in everyday life to this all important issue. (*TG*, 37)

Instead, Toulmin speaks of "initial presumptions" (128); that is, opinions that are in general reasonable to adopt, in the absence of solid arguments to the contrary. He illustrates this idea with examples from science and law, concluding (somewhat to my surprise):

> So, in general, the practical demands of everyday argumentation make it unavoidable that we should rely on "initial presumptions," "prior probabilities," and the like. (128)

It would have been instructive had Toulmin been slightly more generous and given us some examples, from the realm of everyday argumentation, of what might be allowed as an initial presumption. Still it is to his credit to have raised the issue of the burden of proof. That he has not been able to give us the final solution is not so much cause for regret as it is a summons to informal logicians to further inquiry.

Chapter 9 concludes with sections on "The History of Practical Reasoning" (which should give the student an idea of how modes of reasoning have changed over time) and "Historical Variability and Skepticism" (which does a fine job of showing how to nip jejune skepticism in the bud).

Chapter 10, "Language, Communication and Reasoning," is the least useful chapter. Its focus is language and its role, but there is not very much of substance here. For example, the section on argument and definition is very brief. Toulmin does not mention the various kinds of definition, nor does he give sufficient attention to the question of just how definitions figure in argument.

C. Fallacies

I had hoped that Toulmin's novel approach to the analysis of arguments would give rise to some new insights into the topic of fallacies, or at the very least make for an exciting treatment of them. Unfortunately, my hopes were frustrated. Toulmin's treatment of fallacies never ventures much beyond the conventional approach. He divides fallacies into two sorts: fallacies of unwarranted assumptions and fallacies of ambiguity – a fairly standard division. Under the former, Toulmin treats: hasty generalization, accident, false cause, false analogy, poisoning the wells, begging the question, evading the issue, appeals to authority, the appeal to the people, the appeal to compassion, and the appeal to force. (There is some doubt in my mind whether the last two are, in any way, argumentative strategies, but that's another issue.) Under the latter heading, Toulmin treats: equivocation, amphiboly, accident, composition and division, and figure of speech. Following the traditional wisdom about such lists, Toulmin says that no list of fallacies can be complete. That bromide cannot, it seems to me, justify the omission of several of the most important fallacies from either heading. Certainly inconsistency and straw man belong on any roster. Two wrongs and provincialism occur with enough frequency in ordinary discourse to have some claim to representation also.[8]

There are other problems. The examples cited in the text are often artificial and thereby diminish the value of the account. Sometimes they aren't even bona fide examples of fallacy, as when in dealing with the fallacy of accent, Toulmin says: "A second type of fallacy of accent may be found in many advertisements and newspaper headlines" (182). Newspaper headlines can scarcely be construed as arguments, so that whatever infelicities they may occasionally contain it only confuses matters to refer to them as fallacies.[9] Then, too, I must wonder if Toulmin's presentations are sufficiently clear and rigorous to offer the student an adequate insight into the nature of the fallacy. Here, for instance, is Toulmin on "the argument against the person" (*ad hominem*):

> The argument against the person is the fallacy of rejecting the claims a person advances simply on the basis of derogatory facts (real or alleged) about the person making the claim. (172)

There are instances where Toulmin's description is satisfied but we shall not want to say that any fallacy has been committed. Suppose, to cite a classic example, a lawyer rejects a witness's claim about an incident he claims to have seen on the grounds that (a) the witness is a known liar or (b) the witness was not actually present. In a court of law, where the credibility of the witness is a crucial factor in deciding whether or not to accept the testimony, the lawyer can reject the claim without committing any fallacy at all. The point is that it is sometimes permissible to attack a person's background or character instead of (or as a means to) attacking the person's claim, so that the fallacy of the argument against the person ought really to be defined as *irrelevant* attacks on the person.

In discussing the appeal to the people, Toulmin says:

> The appeal to the people refers to fallacious attempts to justify a claim on the basis of its supposed popularity. The fact that many members of a given group hold some belief is offered as evidence that this belief is true. (174)

The account is not quite accurate. For we reason in this way all the time when we draw inferences about a population from a sample. The fact that many members of a given group (a well drawn sample) hold a certain belief (for instance, that Reagan will win the election) can surely be some evidence for the truth of that belief. And isn't the fact that large numbers of people buy a certain product (and hence presumably believe it is a good one) *some* evidence that the product is a good one?

Rather than continue to chip away at Toulmin's accounts of the individual fallacies, I would like to look at what he says at the beginning of the chapter. Close to the beginning, he says:

> Just as certain widely accepted ways of constructing arguments are recognized as unsound across a wide range of fields, so too certain modes of procedure in argumentation have traditionally been recognized as unsound. These are termed fallacies. (157)

On the next page, Toulmin says; "Fallacies are arguments that are persuasive but unsound" (158). I don't think this is a good definition at all. In the first place, these fallacies can't be all that persuasive if Toulmin (and many others) can see through them. Second, what meaning are we to attach to the term "unsound" here? The traditional meaning would be "an argument which is either invalid or has one or more false premises, or both." But what sense can be made of this in Toulmin's approach to the analysis of arguments? Hence it seems to me that his definition of *fallacy* has not been integrated into his pattern of analysis.

A few lines later, we read:

> Most disturbingly to some people, arguments that are fallacious in one context may prove to be quite solid in another context. So we shall not be able to identify any intrinsically fallacious forms of argument; instead, we shall try to indicate why certain kinds of arguments are, in practice, fallacious in this or that kind of context. (157)

I have difficulty squaring this remark with the previous one. That is, if, as Toulmin said earlier, certain modes of procedure have been recognized as unsound, what was the basis of that recognition? Was it *contextual unsoundness* that was recognized? But what is that? Contextual invalidity? Contextual falsehood? The fuzziness of these remarks caused me to look carefully at Toulmin's treatment of the individual fallacies for examples of arguments that were fallacious in one context but solid in another. I thought I might find an illustration of this point in the treatment of the argument against the person, but, as I have already shown, I did not.

Let us look at his treatment of the fallacy of evading the issue:

> Of course, not all such evasions of the issue are necessarily fallacious. Questioners do not always have a right to the information they request. Students, for instance, do not generally have a right to ask their teachers what questions will appear on their examination. (171)

Of course. A teacher who denies a student request for exam questions can hardly be said to have evaded the issue, for there is no issue! The fallacy can occur only when the person being challenged is under some sort of logical obligation to deal with the issue. Toulmin continues:

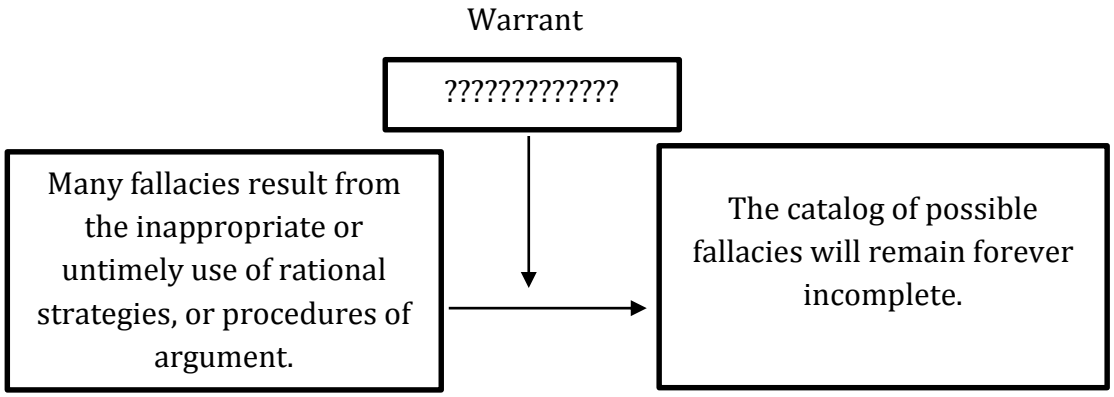
> The situation in this case is significantly different from that between a politician and his constituents, whom it is his function to represent in Congress. Here as elsewhere, therefore, whether this *argumentative procedure* is fallacious or not depends on *the situation in which it is employed*. (171) (initial emphasis added)

Doesn't it seem odd to describe the technique of evading the issue as an argumentative procedure, since it is the very opposite? A politician who attempts to turn aside legitimate questions about a position he has taken may indeed be clever rhetorically and may succeed. But such maneuvers hardly seem classifiable as argumentative procedures and most certainly are instances of evading the issue. On the other hand, there may be times when a politician can rightfully refuse to supply information requested of him by his colleagues or constituents. These are not situations that can be described as "evading the issue." They are rather the "rightful withholding of information." So that wherever one can truly describe a situation as evading the issue, a fallacy has indeed occurred.

To bring this section to a close, I want to talk briefly about the causes of fallacy. Here is Toulmin:

> Many fallacies result from the inappropriate or untimely use of rational strategies, or procedures of argument, so the catalog of possible fallacies – like the catalogue of topics, or types of argument – will forever remain incomplete. (People can always invent ways of going astray in their reasoning!)[10] (157)

This is a curious argument. Suppose we investigate it using Toulmin's schema:



Is this a good argument? Note, first, the absence of any modal qualifier or rebuttal. Second, I question the *ground.* Are fallacies caused by the untimely or inappropriate use of rational strategy? Or rather from the lack of mastery and appreciation of their use? I find it hard to accept the view that someone who commits a common causal fallacy like *post hoc* does so as result of having misused a rational strategy. What rational strategy is being untimely used when someone begs the question, or is guilty of *ad hominem*? Such fallacies seem rather to be caused by carelessness in reasoning or by the unwarranted intrusion of emotion. We reason fallaciously, for the most part, when we fail to follow rational strategy; when, for example, we forthwith promote a temporal sequence into a causal relationship without sufficient inquiry. People do this when their reasoning skills are either underdeveloped or impaired by other factors. And I think when it comes right down to it, Toulmin agrees with me:

> So the real danger behind the fallacy of false cause is the danger of oversimplification. In ordinary discourse, we often do not stop to articulate warrants, let alone scrutinize our backing and modal qualifiers. *By paying closer attention . . .* (165)

In speaking of the argument against the person, he says:

> The most blatant forms of this fallacy reduce to nothing better than name calling – and it is an unfortunate fact that we are all of us apt to take such tactics seriously when we are on the opposite side of argument from the claimant in question. (172f.)

Third, I would be curious to know how Toulmin would formulate the warrant (and the backing) that is being appealed to implicitly here. I presume that the warrant comes from the field of informal logic, whose province it is to formulate and investigate such warrants and study their backing.

4. Summary

The real function of Part III is to present a theory of criticism, growing out of the theory of argument in Parts I and II. The main problem I have with Toulmin's theory of criticism is that it is *not sufficiently developed*. This problem is particularly acute in the

matter of standards or criteria, where the exposition is very loose, and important concepts are left unanalyzed and unexplained. Toulmin gives lots of good advice about criticizing arguments, but that advice is too rarely embodied in actual examples of criticism and not sufficiently funded at the conceptual level. Another serious shortcoming is the absence of any mention of the need for discrimination in the presentation of one's criticisms of an argument. Some of these same problems crop up also in the material on the burden of proof, which is fine as far as it goes, and in the chapter on fallacies, which is quite uneven.

In some ways, Toulmin's theory of criticism seems largely (and strangely) independent of his theory of argument. One would have thought that a new theory of argument, such as he has offered in Part II, would have brought new dimensions in the theory of criticism. But this is not the case. The questions Toulmin urges us to ask are undoubtedly the right sort: Are the grounds relevant and sufficient to support the claim? Is the warrant relevant and based on solid backing? But these are the same sorts of question that one could ask (but for terminological differences) if one approached the argument from the traditional framework.[11] So it seems to me that the interplay between Toulmin's theory of argument and his theory of criticism is less robust than one would have expected.

Although I have not had the opportunity in this review to deal at all with Part IV, in which Toulmin applies his mode of analysis to special fields of reasoning, I want to say that I thought these chapters were extremely well-written, lucid, and certain to give teacher and student alike a deeper insight into and appreciation of various types of reasoning.

On the whole, then, it is my judgment that *An Introduction to Reasoning* is an intriguing experiment in argument analysis that does not fully satisfy. The theory of argument which lies at the core encounters some fairly serious problems, and the theory of criticism does not seem sufficiently developed or integrated with the theory of argument. The problems are of such a degree that I must finally answer the question posed in the Introduction by saying: "No. This is not the new paradigm. At any rate, not yet." However, it is quite possible that Toulmin's approach can be amended or revised to meet the criticisms I have offered.

Although Toulmin's text fails when judged by this criterion, let us remember that the criterion is an exceedingly difficult one to meet and not one that would ordinarily be applied to a text. The very fact that I decided to use it as my criterion says much about the vision that informs this experiment, and perhaps accounts for the largely critical tone of my remarks. I would gladly have added page after page reciting its virtues but for the inordinate length that would have added. Briefly, let me say that I cannot think of another text which imparts a deeper appreciation of the reasoning process than does this one. So that in spite of its problems, *An Introduction to Reasoning* is, in so many respects, an admirable text and one which should achieve the goal implicitly lodged in its title.

Toulmin concludes his Preface with these words:

> Finally, in this text we have attempted to discuss practical argumentation in a wide variety of fields and disciplines. We shall be grateful for reactions from instructors who use the book in different kinds of classes, in a rapidly developing field of teaching and study, we shall need to pool our experience if we are to develop a well-founded tradition of teaching and a common body of understanding about practical reasoning and argumentation. (vi)

It may seem that this review, written by one who has not yet used the text, has done little else but make waves. It is then my hope that those waves will, in the long run, contribute to the pool of experience and help bring about the common body of understanding which Toulmin's bold experiment has certainly enriched.

Notes

1. Toulmin (1979).
2. See Chapter One above.
3. *Ibid.,* pp. 12-26.
4. For example, Johnson and Blair (1977)
5. *Ibid.,* p. 142.
6. It might be more accurate to refer to such a model as a *dynamic* one.
7. I think Thomas's approach to missing premises is an instance of what I would call a quasi-deductivist approach. See Thomas (1981, 2e: 171-183)
8. For treatments of these fallacies, the reader is referred to Johnson and Blair (1977) and to Kahane (1983 3e).
9. Toulmin's parenthetical comment elicits this rejoinder from me: "Show us some of the new ways of going astray that have been invented recently." I, for one, would welcome a revised catalog of fallacies, which deleted those that are pretty well out of stock (such as amphiboly) and replaced them with newer models.
10. It is also a mistake, though less obvious, to think of advertisements as arguments. For a discussion on this point, cf Johnson and Blair (1977: Ch. 10)
11. The approach to argument analysis adopted in Johnson and Blair (1977: 7-9) remains the traditional framework. The standards listed there for the evaluation of arguments are: *relevance, sufficiency, and acceptability.*

Chapter Eight

Hamblin on the Standard Treatment

1. Introduction

It has been 26 years since C. I. Hamblin published his landmark monograph, *Fallacies*. Since then, it has been widely read, highly acclaimed, and responsible for significant developments in logic and argumentation theory – some of which I shall shortly discuss.[1] Recently, I had occasion to re-read portions of this seminal work, but this time through, I found myself balking where before I had gladly followed. It seemed to me that the time had come for a reassessment of Hamblin's book. That is the purpose of this chapter.

Because *Fallacies* is such a wide-ranging book, I shall restrict attention here to the first chapter in which Hamblin discusses "The Standard Treatment." Such a restriction is defensible, since that first chapter has been so well received that his critique has itself become something like The Standard Treatment of fallacy-theory.[2] In the next part, I offer a brief overview of the work as a whole, its contents and its achievements. In the third part, I will look closely at Chapter 1. The last part is my conclusion.

2. A Brief Overview

In *Fallacies*, Hamblin ranges back and forth between historical expositions, critical commentary and, in the latter stages of the book, the development of his own theory. The first six chapters of *Fallacies* deal with the topic of fallacy. In Chapter 1, Hamblin introduces the idea that there is something called "The Standard Treatment" found in logic textbooks. Chapter 2 is Hamblin's discussion of Aristotle's list of the fallacies, followed in Chapter 2 by the way in which this list was added to in the Aristotelian tradition. Chapter 4 is a discussion of the "ad" fallacies – e.g. *ad hominem* – stemming from Locke. Chapter 5 deals with the Indian tradition, and Chapter 6 with formal fallacies. Chapter 7 is a discussion of the nature of argument and the criteria of good argument. Chapter 8 is about Formal Dialectic – Hamblin's extension of Formal Logic. Chapter 9 treats equivocation.

The many achievements of *Fallacies* include the following:

1. Hamblin was the first to take a close look at textbook accounts of fallacy and to criticize somewhat systematically the presentations of fallacy found there.
2. Hamblin gave us a history of fallacy which has in large measure been purchased by those doing research on fallacies.
3. Hamblin is chiefly responsible for articulating and popularizing the current conception of fallacy (discussed below).
4. Hamblin has convinced many that "we have no theory of fallacy."

5. Hamblin has argued that criteria for good argument must be dialectical rather than alethic or epistemic – there by persuading some to drop truth as a requirement of a good argument.[3]
6. Hamblin introduced the idea of formal dialectic as a supplement to formal logic and was partly responsible for the emergence of dialogue logics.

Others may wish to add to this list. Fine. It is meant only to give some indication of what Hamblin was able to accomplish in his ground-breaking study. I turn next to Chapter 1.

3. Hamblin and The Standard Treatment

Hamblin begins Chapter 1 with a brief history of fallacy, after which he writes:

> The truth is that nobody, these days, is particularly satisfied with this corner of logic . . . We have no *theory* of fallacy at all, in the sense in which we have theories of correct reasoning or inference . . . In some respects . . . we are in the position of the medieval logicians before the 12th century: we have lost the doctrine of fallacy, and need to rediscover it. (11f.)

Hamblin goes on to cite what has since become the accepted definition of fallacy: "A fallacious argument, as almost every account from Aristotle onwards tells you, is one that seems to be valid but is not so" (12). He then discusses the problems in classifying fallacy (13) citing (this declension has become obligatory) De Morgan, then Joseph, then Cohen and Nagel. That done, we are off on our tour of fallacy-land – Hamblin's version of how certain textbook authors handle the fallacies.

The thesis of chapter 1 is not stated but rather implied: one reason fallacy theory is in such poor shape is what Hamblin dubs "The Standard Treatment." Although this phrase is never explained, the context makes clear that it is Hamblin's way of referring to the accounts of fallacies found in (many? most?) modern logic textbooks:

> Let us set the stage with an account . . . of the typical or average account as it appears in the typical short chapter or appendix of the average modern textbook. (12)

About this account, Hamblin writes:

> And what we find in most cases, I think it should be admitted, is as debased, worn-out and dogmatic a treatment as could be imagined – incredibly tradition-bound, yet lacking in logic and historical sense alike, and almost without connection to anything else in modem Logic at all. This is the part of this book in which a writer throws away logic and keeps his readers' attention, if at all, only by retailing traditional puns, anecdotes, and witless examples of his forbears. (12)

Shortly we shall see who these dogmatists are that serve up such witless examples. (Hamblin provides scant evidence/argumentation for the implied charges here.) The *complaint* here is that the presentation of fallacy in modern logic textbooks is low-level – lacking in both logical force and imagination. Hamblin continues the attack:

> . . . their most noteworthy characteristic is that they disagree not only with the Aristotelians but also extensively with one another, and have failed to establish any account for longer than the time it takes a book to go out of print. (13)

The *complaint* here is that modern textbook writers disagree not only with Aristotle but with one another about fallacies. Suppose the fact to be as Hamblin states it. Why is this a criticism? Why would it be wrong for a modern fallacy-theorist to disagree with Aristotle? Other logicians have done so. As for disagreements with one another, this criticism looks like a case of "damned if you do and damned if you don't." If our modern logicians agree with the tradition, then they are accused of being tradition-bound; if they disagree with it and with one another, then they are criticized for that. As for the claim that they have failed to establish any account for very long, Hamblin is exaggerating, probably for emphasis. And as there are no clear criteria for what it would be to *establish an account*, this criticism is ill-advised.

Hamblin continues:

> Despite divergences of arrangement, there is considerable overlap in raw material as between one writer and another the individual kinds of fallacy are much the same, even down to their names. (13)

The *complaint* here seems to be that these textbooks all have the same content, just different arrangements. (The reader will perhaps think that this claim seems somewhat at odds with that just cited.)

At the end of this chapter, he writes:

> Most modern writers have their minor preferences of arrangement, but it is almost always the same material that is being chopped about and served up reheated. One has the impression that respect for the material or the tradition has long since disappeared; and the great argument for conformity is that it saves effort. (49)

The *complaint* here is largely the same as above, with the added implication that these writers are loafing their way through the fallacy section, that they aren't really trying. Once again Hamblin appears to be exaggerating for the sake of emphasis, for how he would be able to ascertain this fact about authors' habits, I haven't a clue.

I take it, then that "TST" is really Hamblin's short-hand way of registering this series of complaints about the presentation of fallacies in modern logic textbooks.

Who are these witless, unimaginative authors? They are: Cohen and Nagel (1934); Black (1952 2e); Oesterle (1963); Schipper and Schuh (1959); Copi (1961 2e); and Salmon (1963). "Two dozen others," Hamblin writes, "could have been included." In addition to the above authors, he often dips back into history to cite Joseph, DeMorgan or Mill, when it suits him. A question we need to ask is: *How representative was this list when it was compiled and selected back in the late 60s?*

The fallacies treated by these authors and discussed by Hamblin are: Equivocation, Amphiboly, Composition and Division, Accent, Figure of Speech, Accident, *Secundum Quid*, *Ignoratio Elenchi*, Begging the Question, Affirming the Consequent, False Cause, Many

Questions, the Ad-fallacies – *Ad hominem, Ad verecundiam, Ad misericordiam, Ad ignoratiam,* etc.; the formally invalid syllogism; and finally the fallacies of scientific method added by Cohen and Nagel.[4] A question that should be asked is: *Were these all or the most important fallacies in the inventory at that time?*

The remainder of Chapter 1 is organized around the fallacies in this inventory. Hamblin typically begins with an explanation of the name of the fallacy. Then he quotes excerpts from various authors' treatments (rarely all six and sometimes only one), describes what they do, offers the odd critical comment, and then we're on to the next fallacy on the list.

Several questions need to be asked about Hamblin's presentation of The Standard Treatment:

1. Did Hamblin miss any important textbooks in his sample? Was it a representative sample?
2. Is his list of fallacies complete?
3. Is Hamblin's portrait of how textbook authors have handled the fallacies (a) accurate and (b) fair?
4. How cogent are Hamblin's own views?

I shall address each of these questions in turn.

1. Did Hamblin miss any important textbooks in his sample?

I don't know exactly how many basic logic textbooks there were when Hamblin was writing this chapter.[5] I do know that there were at least two texts not covered in his survey which might have caused him to tone down the harshness of some of his claims. They are: Beardsley (1950) and Carney and Scheer (1964). Omission of Beardsley's text is significant because both his inventory of fallacies and his treatment of them diverge noticeably from The Standard Treatment – if there is such. Omission of Carney and Scheer is significant because they are particularly careful to avoid the hoary, traditional examples. Both the body of their text and the exercises are well-stocked with examples drawn from contemporary society and refer to such issues as cancer, the stock market, the Peace Corps, etc.

On the other hand, Salmon (1963) seems a strange selection. Salmon devotes no chapter to fallacies, not even a section of a chapter. In all the term "fallacy" occurs no more than seven times. Cohen and Nagel's text, written in 1934, was somewhat dated when Hamblin wrote – not to mention the fact that it was clearly designed as an introduction to scientific method no less than to logic.

Thus, Hamblin's sample is at least peculiar, if not unrepresentative. It includes texts which seem out of place (Salmon, Cohen and Nagel) and fails to include others which ought to have been included (Beardsley, Carney and Scheer).

2. Is his list of fallacies complete?

Certainly most of the important fallacies are listed, but note the following points:

a. Not all fallacies are covered by all authors. Black, for example, doesn't treat amphiboly or accent at all. Cohen and Nagel don't treat amphiboly; nor does Salmon.
b. The classification and arrangements differ from one author to the next. Black, while mentioning the traditional division of fallacies into formal, linguistic and material, also proposes that there are really two basic types – general fallacies and fallacies of circumstance. Carney and Scheer, following Aristotle (though not all the way) subdivide material fallacies of insufficient evidence.[6]
c. Almost every author makes some addition as well as some deletion. For example, Black has a classification "material fallacies" which includes what he calls "tabloid formula"; Salmon is likely included for his having introduced the fallacy of biased statistics; Cohen and Nagel introduce several new fallacies. Carney and Scheer coin the fallacy they call "the fallacy of opposition" (42f.) and later in the second edition introduce the fallacy of straw man.
d. The examples used are a mixture of those taken over from the tradition and new ones invented or reported by the author(s).

These four points seem to me sufficient to raise serious questions about the existence of TST, if that designation suggests uniform and homogeneous treatment of fallacies in the texts consulted.

3. Is his treatment (a) accurate and (b) fair?

In my judgment Hamblin is uneven on these two points. To discuss in detail each of the 19 fallacy subsections would not be possible. I have chosen to report on Hamblin's treatment of just three: (i) accident/*secundum quid*; (ii) "*ignoratio elenchi*"; and (iii) *ad hominem.*

(ia) *Accident*

Hamblin begins by citing the old example from Plato, and then discusses the fallacy, pointing out, and rightly, that Aristotle's fallacy depended upon the doctrine of Essentialism. "Consequently an alternative, slightly different rationale is often provided" (28) – and he cites Copi, according to whom Accident is the fallacy that occurs when one applies a general rule to a particular case whose circumstances render it inapplicable. Our contemporary authors have re-interpreted the fallacy – a move which would seem to be some sign of intellectual vitality and responsibility in TST. Worth mentioning here as well is that Copi points out the barren nature of many examples of the fallacy (1961 2e: 63):

> Some examples of the fallacy of *accident* are no better than jokes, as: "What you bought yesterday, you eat today." . . . Of this example De Morgan wrote: "this piece of meat has remained uncooked, as fresh as ever, a prodigious time. It was raw when Reisch mentioned it in the *Margarita Philosophica* in 1496: and Dr. Whately found it in just the same state in 1826.

Thus, at least one of the modern authors is not insensitive to the problems posed by the traditional examples nor to the danger of passing them along without reflection and critical comment.

Notice that only two authors were mentioned: Oesterle and Copi. What about the others? Are there variations worth nothing in other texts? For example, what do we find in Black on the fallacy of accident? His example is: "Alcohol causes drunkenness. Therefore if you drink this bottle of whiskey, you will be drunk." Oesterle gave this example: "No one should be allowed to drink wine because people get intoxicated by it" (256). Black continues:

> The premises of this argument are true and the conclusion may be so if the bottle is sufficiently large and the resistance of the drinker sufficiently low. Yet the argument is unsound for the assertion "Alcohol causes drunkenness," like most generalizations, is true only *if certain unstated conditions are fulfilled.* Not *any* dose of alcohol will cause *any* person to get drunk; the generalization is true only for a certain (specifiable) amount of alcohol (varying from person to person). The fallacy of accident is committed whenever a general rule is applied to a special case to which the rule is not intended to apply.[7] (233)

Another author has given us a re-interpretation of the fallacy in much the same vein as Copi – again indicating that our authors aren't so hidebound as Hamblin intimates.

(ib) *Secumdum Quid*

Hamblin begins by giving the Greek origin of the phrase and a brief description of the fallacy relating to Accident, and this is followed by his claim that this fallacy has come close to the hasty generalization, a burden it was not designed to bear. Hamblin then does a nice piece of historical detection that points the finger at De Morgan as the modern source of the raw meat example ("Writers of textbooks take their examples from one another"). However, there is no discussion of what actually goes on in these six textbooks under this particular fallacy label.

The conclusion of the section is an attack on "the way in which people invoke these two fallacies in order to seek a logical sanction for their personal prejudices" (30). Only one example is given: Oesterle. I began to have some misgivings when I read Hamblin's critique. This is what Oesterle had written about *secundum quid*:

> In general this fallacy consists of using a proposition, which has a qualified meaning, as though it applied in all circumstances and without restriction. One thus argues fallaciously that the commandment "Thou shalt not kill" forbids fighting for one's country. But the meaning and context of that commandment forbids killing an innocent person unjustly, that is, murdering. (257)

Here is Hamblin's comment:

> Does it? That is much too easy a way out. Let us admit . . . that Ten Commandments are not to be taken literally; but, if someone wants to pay lip service to a principle while making convenient exceptions, at least he should not be allowed to enlist the authority of Logic. (31)

Hamblin's comment is unsettling, for several reasons. First, he implies (in some sense) that Oesterle is paying lip service to a principle and is enlisting the authority of Logic in support. That seems like an awfully strong indictment to base on just this one passage.

Second, Hamblin is implicitly appealing to what has been called The Principle of Logical Neutrality which forbids a critic from passing off substantive philosophical criticism under the guide of logical criticism.[8] To challenge someone's logic is to find a problem in the *reasoning process* – not in that individual's beliefs. A philosophical disagreement does not of itself constitute bad logic.

Third, I have trouble seeing just what Hamblin objects to in Oesterle's *reasoning*. He admits, with Oesterle, that the Commandment is not to be taken literally. It follows that the Commandment must not be interpreted as prohibiting any and all taking of life. Hence there will be exceptions. Why is this exception allowed by Oesterle termed "convenient"? To what principle is Oesterle paying lip service, and how in the world could Hamblin know this? It would seem that if anyone here has violated the Principle of Logical Neutrality, it is Hamblin and not Oesterle.

(ii) *Ignoratio elenchi*
Hamblin writes:

> Aristotle (*Sophicstical Refutations* 167a 21) shows that he means it to refer to cases in which, through lack of logical acumen, an arguer thinks he has proved one thing but has at best proved something else . . . So described, this category can be stretched to cover virtually every kind of fallacy; or it can be restricted to clear cases of misinterpretation of the thesis. (31)

Thus his *complaint* seems to be that this label can be understood in both a broad (rag-bag) and a narrow sense. Schipper and Schuh use it in the broad sense. True enough. But then why not give them credit for making an innovative move rather than merely repeating the tradition in hidebound servitude?

Next Hamblin takes up Copi's point that "an argument may be stated in cold, aseptic, neutral language and still commit the fallacy of irrelevant conclusion" (31). Hamblin complains that he can't find any examples fitting this description, having consulted Copi, Oesterle, and Schipper and Schuh. He claims that "ignoratio elenchi" inadequately characterizes these and "since there are no other modern examples for it to characterize, it has no modern justification" (32).

What do we find in the texts? My examination of them indicates that Hamblin has made good points and has made them fairly and squarely. The one observation I would make is that he might have found the kind of example he was looking for had he consulted Carney and Scheer.[9]

(iii) *Ad hominem*

Hamblin begins with a list of 23 different ad-fallacies, concluding with (of course) *ad nauseum*, without, however, citing any source for, e.g., the *ad ludicrum*. He then notes that the genre was invented by Locke and that most of the "ads" are of the 19th-20th century provenance.

Next he characterizes the fallacy: when a case is argued not on its merits but by analyzing (usually unfavourably) the motives or background of its supporters or opponents. Examples from Cohen and Nagel, and Joseph are adduced. The question of how to classify is dealt with briefly but "the main question is whether arguments *ad hominem* are genuinely fallacious." He mentions Joseph's reservations – having to do with courtroom proceedings – but does not himself take a stand on this issue. Hamblin notes that Copi distinguishes two varieties: the circumstantial and the abusive. Hamblin sees problems with the distinction, but is sketchy on this point. He concludes with a brief comment about Fearnside and Holther's (1959) distinction between *ad hominem* and *ad rem.*

On the whole, Hamblin's analysis of how texts have presented the *ad hominem* is both accurate and fair. He may have misread Copi's position, for Hamblin claims that "circumstantial arguments are not always invalid, though it is not clear when they are and why" (42). In Copi's view, however, this type of argument (referring to the ad hominem circumstantial) "though often persuasive is clearly fallacious" (56). Further, Hamblin gets off track when he says "purely abusive arguments are not arguments at all, though Copi does not say so" (42). Never mind the apparent contradictoriness of his statement that "purely abusive arguments . . . aren't arguments at all." It seems even stranger to claim that the abusive *argumentum ad hominem* is not an argument. Clearly the burden here is on Hamblin to amplify.

Based on this sample of his coverage of TST, my conclusion is that while Hamblin's treatment of the authors is generally accurate, he fails to give credit to textbook authors for innovative moves and is occasionally unfair to some authors. Therefore, while Chapter 1 is useful as a compendium, it ought not to be treated as canonical.

4. Is The Standard Treatment an Invention?

Yes, if by The Standard Treatment one understands the following set of claims: textbooks all deal with pretty much the same fallacies (with only minor variations), using the same examples to illustrate them and understanding them in the same way. Just the brief bit of material we've reviewed indicated that, in this sense, there is no such animal in the zoo. There is too much variation to justify the application of this label.

If, on the other hand, we understand "TST" to mean that presentations of fallacy in texts are *sometimes* guilty of (a) using outdated examples and (b) adopting quite divergent classifications of fallacy and (c) presenting different understandings of them, then there is no denying the truth of that. But then the appellation "TST" is a misleading way of calling out attention to this situation.

5. How Cogent are Hamblin's Own Views?

From time to time throughout the chapter, Hamblin interjects his own views. For example, when commenting on the *ad misericordiam,* he writes:

> . . . more depends on a lawsuit, or a political speech, than assent to a proposition. A proposition is presented primarily as a guide to action and, where action is concerned, it is not so clear that pity and other emotions are irrelevant. (43)

This point seems on the surface to be a good one. When for example the defendant makes a plea to the judge for pity, he is not asking the judge to adopt the proposition that he is innocent because he is pitiable, rather he is asking the judge to consider certain circumstances in passing sentence. It is hard to see how this can be said to be fallacious at all. On the other hand, the dichotomy between a proposition put forward for assent and one put forward to guide action seems slight and certainly in need of development.

Less promising is Hamblin's reconstruction of the appeal to authority, which he casts this way (43):

> X is an authority on facts of type T.
> X said S, which is of type T.
> Therefore, S is true.

There is a problem in this way of representing the *argumentum ad verecundiam*. If we take the conclusion just as it stands, then it would seem that the argument is deductive in character. In turn, we would then suspect that the missing premise is that if X is an authority on such facts, then whatever S says will be true – i.e., X is infallible. But the appeal to authority cannot require that the authority be infallible. One possible solution to this problem would be for Hamblin to modify the conclusion: "S is probably true."

Another problem is that Hamblin fails to produce argumentation of his own to defend the critical points he makes. Recall his critique of Copi on the *ad hominem*, for instance. About the *argumentum ad populum* he writes that it is an "appeal to popular favour, which, to preserve uniformity, must be purely emotional, though it is not clear from its name that it does not consist of the purest valid reasoning, and only an anti-democrat could unhesitatingly assume the contrary" (44). The first half of this claim strikes me as oblique, and the second is in need of argumentation.

Thus, Hamblin's own views about the various fallacies appear to be a mixed bag.

4. Conclusion

I imagine someone saying: "So what? Suppose that Hamblin overstated the case in his critique of The Standard Treatment, suppose that no such thing exists; what follows? It remains true, does it not, that there was then and is now no coherent doctrine of fallacy, no theory of fallacy, no agreed upon classification or list of fallacies, etc. All these points remain true. All you've shown is that Hamblin has been slightly unfair to some textbook authors. That's about it."

The objection has merit. As we have seen, Hamblin scores a number of solid hits against the textbooks he considers. Yet if we are to enter a balanced assessment of that tradition, the following points, *not noted by Hamblin*, deserve to be entered into the ledger.

First, we have some reason to think that the textbook tradition is not nearly so monolithic or dogmatic as Hamblin's coinage might suggest. Certainly the claim that "the tradition described in the previous chapter is so incoherent . . ." (50) is an *exaggeration*.

Second, it must not be forgotten that the textbook tradition kept the interest in fallacy alive at a time when logicians by the score were either abandoning or largely bracketing the traditional approach to logic.

Third, a textbook is thought, by its very nature, to be a distillation of the accumulated wisdom and research gathered in journals and monographs. Yet there were few journal articles and almost no monographs devoted to the serious study of fallacy. Thus, the achievements listed in the first two points above stand out even more.

The problem, then, with the objection is that it masks important defects in Hamblin's treatment. Evocative when it was published and certainly stimulating and insightful, Hamblin's critique has some serious flaws. It is important to notice them so that a critical and balanced appraisal can be made. The high esteem in which this work is held might lead some to think that his critique of fallacies could, with very little supplementary documentation, pass muster today. It is some measure of how things have changed in the last 20 years – partly because of this fine work – that no such inference would be valid, but a proper defence of this claim is beyond the scope of this chapter.

The scholarship and concern evident in *Fallacies* as well as the fertility of Hamblin's thought may have blinded readers to its flaws: the lack of argumentation at crucial junctures, mis-statements of fact, unfairness to some of the authors, and a failure to give textbooks credit for the innovations they made. I hope this chapter is a contribution to a much needed re-evaluation of Hamblin's important work.

Notes

An earlier version of this chapter was a paper read to the 1988 meetings at The Canadian Philosophical Association. I am grateful to those who attended that session for their comments.

1. The most prodigious research project on fallacies – that carried on by Walton and Woods in the 70s – was very evidently influenced by Hamblin. See Woods and Walton 1982. Woods (1987), for example, uses the phrase "The Standard Treatment." Johnson and Blair accept without much reservation Hamblin's claims about The Standard Treatment (see Chapter One above).

   For description of critical reaction of Hamblin, I urge the reader to consult Grootendorst (1987). The one thing missing in Grootendorst's masterful assessment of Hamblin's influence is any criticism of Hamblin himself. Finally, let me just quote Hintikka saying: "The best general discussion of traditional fallacies is . . . Hamblin . . ." (1987: 235)

2. I see influence of Hamblin in, for example, Massey (1981a) and also in Grootendorst (1987). It is interesting that Grootendorst describes three different

reactions to Hamblin but all of them seem premised on the assumption that Hamblin is more or less right in his fundamental claims.

3. See e.g. Johnson and Blair (1983 2e); also Govier (1988 2e).

4. Quite a list! Is anything missing, can anything be deleted, do we need all these, etc., - are the sorts of question that are bound to be raised by a thoughtful individual looking at this list, and further realizing that each textbook author has his or her own way of deciding what to subtract and what (in some cases) to add. For there are fallacies which are not represented here, the most significant of which are: straw man, red herring, and vagueness.

5. In our 1978 bibliography, Blair and Johnson listed 25 logic textbooks published between 1946 and 1969. See Johnson and Blair (1980a: 168f.) Note that this list was restricted to the sort of text which we imagined would be used in the introductory logic course.

6. For the record, here is the catalog:

   The 11 fallacies treated by Black are: (a) formal fallacies: composition, accident, irrelevant conclusion (*ignoratio elenchi*); *non sequitur* (argumentative leap); (b) linguistic fallacies: equivocation; ambiguity; then material fallacies: tabloid formulas; begging the question; *ad hominem*

   The ten fallacies treated by Cohen and Nagel are: (A) formal fallacies; (b) semilogical or verbal fallacies: composition, division, accident, converse fallacy of accident; (c) material fallacies: arguing in a circle, many questions, *ad hominem*. They also have a section on (d) the abuses of scientific method in which they treat: fallacies of reduction, fallacy of simplism (with several species); the generic fallacy.

   The 17 fallacies treated by Copi (1961 2e) are: (a) fallacies of relevance: *ad baculum, ad hominem* (abusive)*; ad hominem* (circumstantial); *ad ignorantiam; ad misericordiam; ad populum; ad verecundiam;* accident; converse accident, false cause, *petition principia,* complex question, *ignoratio elenchi;* (b) fallacies of ambiguity: equivocation, amphiboly, accent, composition and division.

   The 11 fallacies treated by Oesterle are: (a) fallacies of language: equivocation, amphiboly, composition and division, accent, form of expression (in other words, Aristotle's list); and (b) fallacies apart from language: accident, relative to absolute (*secumdum quid*), ignoring the issue (*ignoratio elenchi*), begging the question, consequent, and false cause. Oesterle rigorously adheres to the Aristotelian doctrine. But he is the only one of the six who does.

   Salmon (1963) has no classification but treats the following: formal fallacies, biased statistics, the appeal to authority.

Schipper and Schuh have 28 fallacies: fallacies of definition: incongruous definition, circular definition, negative definition, obscure or figurative definition, extraneous definition; fallacies of relevance: appeal to force, appeal to pity, appeal to ignorance, appeal to or against the man, appeal to the crowd, false cause and irrelevant conclusion; fallacies of authority: sweeping authority, venerable authority, misplaced authority, converse fallacies of authority; fallacies of ambiguity: simple equivocation, composition, division, accent, and amphiboly; fallacies of presumption: complex question, disguised conclusion, question-begging definition, and circular reasoning.

One cannot but be struck by the differences as well as the similarities in (a) the systems of classification and (b) the actual inventory of fallacies. Only Oesterle follows Aristotle to the letter; there is variation both in classification and content among the others.

The 18 fallacies treated by Carney and Scheer are: (a) the material fallacies of relevance: *ad hominem, tu quoque, ad populum, ad verecundiam, ad ignorantiam, petitio principia,* complex question, accident, the generic fallacy, *ignoratio elenchi*; (b) the material fallacies of insufficient evidence: *post hoc,* special pleading, hasty generalization, opposition; and the fallacies of ambiguity: equivocation, amphiboly, division and composition.

7. Why the improper application of a rule should be termed a fallacy, I haven't the slightest notion. This claim is the more puzzling because Black's definition of fallacy is somewhat different than the traditional one: "a fallacy is an argument that *seems* to be sound without in fact being so." For Black, "sound" means "the conclusion is reached by a reliable method and the premises are known to be true." (230)

8. The Principle of Logical Neutrality, first explicitly formulated by Fogelin, was the subject of a sharp exchange in the pages of the *Informal Logic Newsletter* between Schwartz and Fogelin. See *Informal Logic Newsletter,* Vol. IV. No. 3 (July 1982), pp. 2-6.

9. Here is their example:

   The man who said "Miracles don't happen" is as blind as a mole in a tarbarrel. I guess he never heard of penicillin. TV is unknown to him. "Astronauts" is a new word to him. The news about Crest hasn't reached him yet. I tell you this is an age of miracles. I could name a thousand more.

   On another front, I have been wondering for some while just when and where the fallacy of straw man makes its way into the canon. It is commonplace in texts written after 1970 but hardly to be seen before. My conjecture is that Carney and Scheer are responsible for introducing it in their second edition. *Ignoratio elenchi* drops out and is replaced by straw man.

Chapter Nine

Acceptance is Not Enough: A Critique of Hamblin

1. Introduction

In this chapter,[1] I want to look at an equally influential part of Hamblin's *Fallacies* – Chapter 7, "The Concept of Argument." Here, Hamblin develops the position that the proper standards for the evaluation of arguments are dialectical.

Many informal logicians and critical thinking theorists have been persuaded by Hamblin's proposal that instead of truth, the dialectical criterion of acceptance/acceptability should be adopted for the assessment of arguments. Among the first to follow this path were Johnson and Blair (1977). Later we find other informal logicians moving in the same direction, including Govier (2e 1988), Damer (2e 1987), Freeman (1988), and Little, Groarke and Tindale (1989).

Chapter 7 of *Fallacies* has two distinct parts. The first consists of a set of reflections on the nature of argument which, though not without its measure of influence on the later portions, I must pass over here because of the limitations of space. Hamblin then turns to the question: "What are the criteria by which arguments are appraised?" and considers in turn three different types of criteria: alethic (234-36), epistemic (236-41) and finally – his own preference – dialectical (241-46).

In what follows, I review the reasoning by which Hamblin dismisses alethic and epistemic criteria and argues for dialectical criteria. My conclusion is that his arguments against alethic and epistemic criteria are seriously flawed, and that his proposal that dialectical criteria be adopted in lieu of them is itself problematic.

2. Hamblin on Alethic Criteria

Hamblin begins the quest for the criteria of good argument at an apparently noncontroversial starting point:

(A1) The premises must be true.

(This is the criterion that later turns out to be the culprit. I call this *apparently* noncontroversial in view of the considerations Hamblin later adduces.)

The next criterion is also familiar:

(A2) The conclusion must be implied by them (in some suitable sense of the word "implied").

The next requirement is that the conclusion must follow reasonably immediately.

(A3) The conclusion must follow reasonably immediately.

Typically, when we argue, we do not state all of our premises; some are left tacit or unexpressed. This fact leads to the fourth requirement:

(A4) If some of the premises are unstated, they must be of a specifiable kind.

Though he does not mention the term "soundness," anyone familiar with developments in 20th century logic will have no difficulty recognizing (A1)-(A4) as an approximation of that ideal. Having fleshed out these alethic criteria, Hamblin now subjects them to critique. (Parenthetically, it may prove interesting to ask: *How* did Hamblin arrive at these criteria? What sort of process of reflection was used/can be used to elicit these criteria? But I cannot pursue those questions here.)

The essence of Hamblin's position on alethic criteria is that "there is one very important respect in which alethic tests are not sufficient, and another important respect in which they are not necessary." Of course, when Hamblin says this, he is thinking mainly of (A1), against which, Hamblin raises the following objection: Suppose the premises are true, but no one knows them to be true. As Hamblin puts it: "What is the use of an argument with true premises if no one knows them to be true?" (236)

It is difficult to know what to make of this objection which has apparently been quite persuasive.[2] I suspect most are comfortable with the idea that a *statement* may be true yet not known to be true. Some would argue that the statement "The earth is spherical, not flat" was true in the time of Socrates, even though no one then could have known its truth. (Others would dispute this claim, but bracket this debate.)

Let's pursue this objection to see where it leads. For this objection to gain traction, we must suppose that an arguer introduces a premise that is as a matter of fact true but which she does not know to be true. Then, we may imagine a critic responding "Your argument is a bad one because it contains a premise which, though true, is such that you don't know it to be true." Such a move seems entirely implausible to me. I find myself wondering what to say in the face of such a response. As Wittgenstein (1966: 55) once said "my normal techniques of language leave me"; I don't know what to say. Nor are my problems assuaged by Hamblin's examples, to which I turn next. Here is the first:

> If I argue that the Martian canals are not man-made because there has never been organic life on Mars . . . my premises may be true but the arguments will be quite useless in establishing my conclusions so long as no one knows them to be true. (236)

But if no one knows them to be true, then neither do I. So what could lead me to use this statement in constructing my argument? Moreover, to criticize an argument for having this flaw, we need not resort to epistemic standards. If anyone were to assert such a premise, we would simply reject the premise on alethic grounds by saying: "But that premise is just not true." So it is far from clear that this example does establish the inadequacy of alethic standards.

The next example offered by Hamblin fares no better:

> . . . the argument that oranges are no good for orangutans because they contain dietary supplements might or might not carry some weight in the second half of the twentieth century but would rightly carry none at all as between two ancient Romans who had never heard of vitamins. (236)

If it difficult to know what to make of this claim. Let me suggest two problems. First, it seems to me that instead of supporting the claim that alethic criteria are not sufficient, one might just as easily argue that what this example shows is that there are two kinds of criteria: one alethic (are the premises true?) and the other dialectical (are the premises acceptable?). Hence what follows is not the defect (insufficiency) of alethic criteria, since indeed the argument – were it directed at the Romans – would still be sound. Rather what this shows is that we need an additional matrix of evaluation – dialectical. As we shall see later, there is some basis for this reading of Hamblin.

Second, it seems to me the *problem* for the two ancient Romans is not so much whether the premise is *true* or *known to be true* but what sense they could make of it all. The reason the premise would carry no weight is not that they wouldn't know it to be true (they wouldn't) but rather that they would not understand its meaning and *hence not know whether or not it was true*. If that is right, then the problem with such a premise is neither alethic nor epistemic in character but rather semantic, and so the example cannot be used to support the rejection of semantic, and so the example cannot be used to support the rejection of alethic standards in favour of epistemic ones.

Finally, I have a dialectical complaint about these extra examples which are meant to move us from alethic to epistemic criteria. Earlier in the chapter, Hamblin writes:

> When we put up an example of an argument we should imagine someone actually arguing, not merely imagine someone imagining someone arguing. (234)

Certainly the use of the orangutan example flies in the face of this remark, not to mention its seeming inconsistency with the dialectical standpoint. Thus, Hamblin's reasoning for rejecting alethic criteria violates his own strictures about the use of examples. For these several reasons, then, I find Hamblin's case against alethic standards unconvincing, unacceptable.

We need to take account of a second line of argument against alethic criteria. Hamblin argues that truth and validity "are onlookers' concepts and presuppose a God's eye view of the arena" (242). But is this pivotal claim true? Consider validity first. The claim that validity presupposes a God's eye view seems both irrelevant and incorrect. It is *irrelevant* since the issue under discussion is whether alethic and epistemic concepts are too strong, and validity is neither an epistemic nor an alethic concept but rather a logical one – or so I would argue. The claim is *incorrect*, since to judge that one proposition follows necessarily from another does not require an Empyrean vantage point. The job can be done in various earthly ways: the use of Venn diagrams, deduction rules, truth-tables, truth-trees, none of which require any more than human calculating powers.

Hamblin seems on firmer ground in his claim about truth as a standard, though here his argument fails to take into account the fact that there are various ways, philosophically, of defining or understanding truth. At most, Hamblin might argue that certain forms of correspondence theory presuppose omniscience. (Not all forms of correspondence theory

can be said to presuppose that – else one would have to be a theist to hold that theory.) But there are other theories of truth – coherence, idealist, pragmatist, instrumentalist, and, of course, relativist – that do not require omniscience, and hence could be adopted by arguers without presupposing omniscience and forfeiting their posture within the dialogue. So this second line of reasoning against truth (and validity) as criteria for arguments also fails.

Before going on to consider Hamblin's case against epistemic criteria, I want to call attention to a *crucial* point Hamblin makes while challenging the traditional ideal of soundness. Hamblin says that there are often good arguments for a given conclusion and also good arguments against it (232). *The significance of this claim should not be underestimated, for it shows that goodness and soundness are not identical standards of appraisal.* In this way: it cannot be true that there are *sound* arguments for a given conclusion and sound arguments against it. To be sure, there can be *valid* arguments both for and against a certain proposition. A given proposition, P, might be the conclusion of a valid argument, while its contradictory, –P might be the conclusion of a (different) valid argument. What is not possible is that both of these arguments be *sound*. Hence if we admit that there can be good arguments for both a conclusion and its contradictory, we have conceded that the goodness of these arguments cannot be explicated in terms of the ideal of soundness. And that means that either the criterion of truth or the criterion of validity – or both – will have to be modified.

At this point, having argued that truth is not a sufficient condition, one would expect Hamblin to argue that truth is not a necessary condition either. But in fact that discussion is woven into the case against epistemic criteria, to which I now turn.

3. Hamblin on Epistemic Criteria

Epistemic criteria are presumably criteria in which epistemic terms (Such as knowledge) play a central role. These are now introduced as modifications of the alethic ones. Thus, instead of (A1) we would have:

(E1) The premises must be known to be true.

Similar reasoning applies to (2)-(4) – each of which requires a modification. Thus, (2)-(3) are combined into

(E2,3) The conclusion must follow clearly from the premises.

And (4) becomes

(E4) Premises that are not stated must be such that they are taken for granted.

The final epistemic condition applies to the conclusion:

(E5) The conclusion must be such that, in the absence of an argument, it could be in doubt.

What problems does Hamblin find with epistemic criteria? Essentially Hamblin's objection to epistemic criteria – specifically, to (E1) – parallels the second half of his position on alethic criteria – viz., they are too strong; they are not necessary. And if Hamblin can show that epistemic criteria are too strong, then since they are stronger than alethic criteria, it follows that alethic ones are too strong also. How does the reasoning go here?

Hamblin's argument against epistemic concepts and his argument for dialectical pivot about the following considerations. On the one hand, epistemic-alethic criteria presuppose a point of view outside of the practice of argumentation; they presuppose omniscience and hence are inappropriate criteria. At the same time, Hamblin argues that dialectical criteria situated as they are within the practice of argumentation are more appropriate to what Hamblin calls the logic of practice (241, 246).

To be more specific, the problems stem from the strong connotations, at least as perceived by Hamblin, of the word "know." Hamblin supports this point with an appeal to argumentative practice where, he says, we often proceed on less than knowledge. That is, rather than demanding that the premises be known, we are satisfied – Hamblin claims – if they are matters of belief or acceptance:

> (H1) An argument that proceeds from *accepted* premises on the basis of an *accepted* inference process may not be a good one in the full, alethic sense, but it is certainly a good one in some other sense which is much more germane to the practical application of logical principles. (240f.)

Note, first of all, that this passage might be construed as indicating there are different senses of criteria of goodness – alethic, epistemic, and dialectical. In turn such a reading allows for the possibility that an argument might not be good in the alethic sense and yet good in the dialectical sense. Hence we face the question whether alethic and dialectical standards are to be construed as alternative standards, perhaps to be invoked on different occasions or in differing contexts, or as rivals for the mantle of goodness. (This same confusion will arise in later passages.)

Next Hamblin anticipates (accurately) an objection: Logicians will accuse him of having lowered his sights in proposing acceptance, of siding with persuasion as against validity. In his response, Hamblin mentions for the first time the "different possible purposes a practical argument may have":

> (H2) Let us suppose first that A wishes to convince B of T, and discovers that B already accepts S: A can argue "S, therefore T" independently of whether he himself accepts S or T and independently of whether S and T are really true. *Judged by B's standards*, this is a good argument and, if A is arguing with B and has any notion at all of winning, he will have to start from something B will accept . . . One of the purposes of argument, whether we like it or not, is to convince and our criteria would be less than adequate if they had nothing to say about how well an argument may meet this purpose. (241)

This long-overdue reference to purpose is most welcome. Hamblin is no doubt right that argumentation serves more than one purpose and that one is to convince others (and

perhaps also ourselves) of the truth (or other desirable property) of some statement about which we are in doubt.

However, on the surface it seems that an argument might be quite convincing, adequate from the point of view of that particular set of criteria, and yet be a poor argument. In saying this, I am tacitly referring to still another and – I think – more fundamental purpose of argument – *rational persuasion*. Suppose, for example, that the arguer uses tricks he/she knows will move the audience; e.g., deliberately straw manning an opponent's views in order to win assent and acceptance from followers? Aside from the obvious objection that this comes perilously close to demagoguery, if the main reason for discarding epistemic criteria in favour of dialectical ones turns out to be that the latter are more in line with this purpose of winning the audience, then that seems to me a fundamental weakness in Hamblin's position. But does Hamblin mean to sanction this position? And will the real dialectical criterion please stand up?

4. Theses Possibly or Actually Attributable to Hamblin

Just what is Hamblin advocating? I ask because we have already had occasion to note one layer of ambiguity (see (H1) above). And consider this passage:

> (H3) We are in fact talking about a class of arguments that Aristotle called "dialectical" . . . The dialectical merits of an argument are, no doubt, sometimes at variance with its merits judged alethically or otherwise; but we would still do well to set down a set of criteria for them. (241)

Here Hamblin appears to be suggesting that there are different types of criteria that an argument may be judged by, and that dialectical criteria are among them. This passage marks a change of direction. Up to this point, it appeared that Hamblin meant to defend the view that the appropriate sort of criteria for an argument are neither alethic nor epistemic – but dialectical.

The next paragraph appears to alleviate the confusion, and to indicate that Hamblin does indeed have the stronger thesis in mind:

> (H4) However, there is also more to be said against the alethic criteria and in favour of a set based on *acceptability* or *acceptance* rather than truth.
>
> The case in which Smith tries to convince Jones on grounds which Jones will accept but Smith may not is, after all, sometimes less general than will satisfy us: we should consider, also, the case in which someone *with good reason* accepts a given set of premises and a given inference-process and becomes convinced of a consequent conclusion. (241)

Is it that dialectical criteria need to be applied *as well as* alethic and epistemic? Or is Hamblin arguing for dialectical criteria *instead of* alethic and epistemic?

Perhaps the clearest statement is this one:

> (H5) If we are to draw the line anywhere, acceptance by the person the argument is aimed at – the person for whom the argument is an argument – is the appropriate basis of a set of criteria. (242)

Let us try to sort out the possibilities. Suppose that we define *alethic* criteria (or tests or rules) as criteria in which the standard of truth is pivotal; *epistemic* criteria as criteria in which the standard of knowledge (or some relevant epistemic standard) is pivotal; and *dialectical* as criteria in which acceptance (but see below) plays the pivotal role.

There are at least three theses regarding the possible connections among these that Hamblin might be defending:

> (T1) Dialectical criteria are the appropriate criteria to use in evaluating arguments.

I would term this the strong thesis: only dialectical criteria should be used. Some passages – (H4) and (H5) – support this interpretation.

There is a second – moderate – thesis he might mean to defend:

> (T2) In addition to judging arguments by alethic and epistemic criteria, arguments should also be judged by dialectical criteria.

This thesis is conjunctive: an argument should be judged by all three criteria, (H1) would seem to fit this interpretation.

Here is a third (weak) thesis:

> (T3) There are three different types of standards by which an argument may be judged: alethic, epistemic, and dialectical.

This thesis is probably best interpreted disjunctively: an argument should be judged by one of these three types of criteria. (H3) seems to fit this interpretation. (With the moderate and weak thesis, there is still the task of rating the criteria themselves; and (T2) and (T3) leave open the possibility of other criteria; but let these problems pass for the time being.)

Hamblin does say that dialectical criteria have a certain claim to be considered as the fundamental ones (242), since the raw facts of the situation are that the various participants put forward and receive various statements. Notice that here Hamblin's position seems to be weaker than elsewhere. He says that dialectical criteria have a certain claim which suggests (T2) or (T3). Calling dialectical criteria fundamental is not quite the same as calling them the appropriate basis of a set of criteria. The latter suggests that dialectical criteria are the only ones to be applied, whereas dialectical criteria could be fundamental and yet not be the exclusive criteria. One could, for example, hold that there is also a role for alethic criteria but that dialectical criteria should receive pride of place. Just how this would work is not entirely clear to me.

(H4) raises another problem of interpretation; i.e., clarifying just what this pivotal dialectical standard is, for in fact Hamblin has referred to three different criteria:

i. acceptability;

ii. acceptance; and
iii. acceptance for good reason.

Though acceptance is the one that appears in Hamblin's final formulation of dialectical criteria (see below), there is some doubt in my mind that is it really the one he wants. But in any event these seem clearly different standards. A premise might be acceptable without actually being accepted; and a premise might be accepted but not accepted for good reason.

Mindful of these problems of interpretation, I come now to an examination of Hamblin's presentation of dialectical criteria.

5. Hamblin on Dialectical Criteria

Having criticized both alethic and epistemic criteria, Hamblin now introduces the modified criteria he calls "dialectical." They are formulated without the use of the words "true," "valid" and/or "known" (and presumably any other term which would imply truth or knowledge). With that difference, they run parallel to epistemic criteria (245):

(D1) The premises must be accepted.

This criterion is central, and we shall return to it shortly. The remaining dialectical standards are:

(D2,3) The passage from the premises to the conclusion must be of an accepted kind.
(D4) Unstated premises must be of a kind that are accepted as omissible.
(D5) The conclusion must be such that, in the absence of the argument, it would not be accepted.

In reference to (D1): Why, asks Hamblin, "accepted" rather than "believed"? Because, he says, "accepted" is free of the psychological connotations. To see this clearly we would need a much fuller analysis than either concept receives here.

The main argument for these criteria is, once again, that they are more in tune with the dialectical situation than their alethic or epistemic counterparts. Thus, Hamblin asks that we consider the empty or, at best, parenthetical character of "is true" and "is valid" when applied to the speaker/writer's own statements or arguments:

> Broadly, it would seem that the man who says "S is true" or "I accept S" might as well simply say "S" . . .
>
> Although my saying that X accepts S is not at all the same as my saying that S is true, my saying that I accept S seems, on the face of it, to have precisely the same function and practical effect. (243)

But if "I accept S" really means "S is true," then won't the former be open to all of the same objections as the latter? In other words, where is the profit in moving away from truth to acceptance?

The answer is that there is a difference that comes into play when we consider the addressee:

> . . . it makes a difference to the addressee, Jones, which form is used, and either form to some extent restricts the degrees of freedom of his reply. Knowing this, Smith himself will choose to say "S is true" if he seeks acceptance of S by Jones, and "I accept S" if he does not seek or expect this acceptance. (244)

Let's grant what Hamblin says as an accurate description of how people operate (though I have my doubts). It still remains opaque to me how these considerations show that acceptance/acceptability is the appropriate basis for judging the premises of good argumentation. So this is not a good argument for the strong thesis.

At the core of Hamblin's argument is the distinction between the participant in the practice of argumentation and the onlooker, along with the conviction that the use of "is true" and "is valid" require that the onlooker be God. Partly this derives from his view that the logician has no business pronouncing the validity of any argument:

> Logicians are of course allowed to express their sentiments (about the value of any given argument) but there is something repugnant about the idea that Logic is the vehicle for the expression of the logician's own judgements of acceptance and rejection of statements and arguments. The logician does not stand above and outside practical argumentation or, necessarily, pass judgement on it. He is not a judge or a court of appeal, and there is no such judge or court; he is at best a trained advocate. It follows that it is not the logician's particular job to declare the truth of any statement or the validity of any argument. (244)

I find this a peculiar argument. Just who is it that wants to make logic "a vehicle of expression for the logician's own judgement"? Those logicians who advocate the ideal of soundness, and hence embrace alethic standards, explicitly avoid any attempt to make judgments of acceptance or rejection of particular statements within an argument, and indeed judgments of validity of particular arguments, though such judgments would be closer to home for them. If Hamblin is right, it is not clear whom he is right against or how it really promotes his own claim that acceptance rather than truth is the appropriate criterion for a good argument to meet.

Fundamentally, then, Hamblin's argument against epistemic concepts and his argument for dialectical ones hinges on the following points:

1. The use of epistemic-alethic concepts presupposes a point of view outside of the practice of argumentation. Indeed, as we have seen, Hamblin falsely assumes that they presuppose omniscience and hence are inappropriate standards for humans to use in judging one another's attempt at producing conviction. Hamblin's rejection of epistemic-alethic will remind some of denconstructivist critiques, as when he writes:

   > When an onlooker pretends to give an "absolute" or impersonal assessment, the point of view is largely his own. (243)

Not only does his critique rest on a somewhat peculiar understanding of logic, but also on some questionable assumptions about the vantage point from which we engage in logical criticism.

2. The use of dialectical criteria presupposes a standpoint within the practice of argumentation and hence is more appropriate for humans. I am about to raise some questions about the viability of these dialectical criteria.

3. The logic of practice (236, 241) is more in line with dialectical standards.

Each of these points is controversial, of course; but rather than pursue these issues further, I want to consider Hamblin's proposal to substitute dialectical criteria. What about acceptance as a criterion? Is this proposed substitution viable?

(D1) invites the question: what is meant by "accepted"? It seems evident that acceptance is not, for Hamblin, the same as belief. Still we need to know just what is meant by acceptance and how it differs from belief. We know that someone can believe both P and –P. Can someone accept both P and –P? Can someone rationally accept both P and –P?

Hamblin says: "If we are to draw the line anywhere, acceptance by the person the argument is aimed at – the person for whom the argument is an argument – is the appropriate basis of a set of criteria." Does this make anyone besides me nervous? What troubles me is the suggestion that acceptance is not merely a necessary but also a sufficient condition for the worth of an argument's premises.

Whatever the merits of this line of thinking may be, there are difficulties connected with it. I want to mention some, without wishing to suggest that they are necessarily fatal for a dialectical approach, nor yet that Hamblin is totally unwary of them. My purpose is rather to indicate the kinds of question and concern a fully-developed story about dialectical criteria must be able to address.

1. Suppose that, as the arguer, I have no specific person in mind, or more than one. When, for example, one constructs a philosophical argument, one realizes that the audience is anything but homogeneous in what it is prepared to accept. Take this fact too seriously and you will surely be paralyzed. To some degree this concern may perhaps be gotten round by the use of constructs like "ideal audience" [Perelman] or "model interlocutor."[3] But I am not altogether optimistic about this road.

2. Suppose that I have a specific person in mind but I am not entirely sure what set of claims she accepts. Lacking that knowledge, how am I to know what my audience accepts? How can I even hope to formulate my premises?[4]

3. Suppose I discover that my audience accepts a proposition which I know – or strongly believe – to be false, but which would, if accepted, provide strong support for the conclusion. According to the dialectical criteria, it seems that I not only may but should use that proposition. That seems entirely inappropriate, at least where argument is conceived as rational persuasion.

4. Suppose that someone I did not imagine in my original concept of my audience comes along and questions or rejects a premise of mine and is perfectly justified in doing so. Can I ignore this simply because he or she wasn't in the target group as originally conceived? If the answer is yes, then it seems entirely too flabby. If the answer is no, then it is unclear what my options are.

5. Suppose we try to turn the tables on Hamblin here. Suppose I say that I do not accept his claim that alethic standards require omniscience. Then it follows that I do not accept the premise of his argument and hence I do not accept his argument. Can it really be that easy? Do I not need to articulate the reasons for my refusal to accept his premise?

6. What happens to the requirement of consistency? Scriven holds that this notion is imbedded in the very idea of an argument. An argument in effect says that if you assert A and B then (under certain conditions) you must (if you wish to be consistent) also assert C (1976: 8). That explains why inconsistency is felt to be such a serious charge against an argument. But now if we discard the truth-requirement and instead admit acceptance, and if – as seems possible – someone can accept both P and –P, the inconsistency is no longer a vice. An argument can (other things being equal) be quite all right even though it contains both P and –P, provided that the addressee accepts both.

These are some of the questions and concerns I have about "Acceptance" as a criterion. I am not saying that they cannot be handled; only that until I see how they are disposed of, I remain uneasy about acceptance as in effect the fundamental dialectical criterion. What I am saying is that Hamblin's reasoning does not seem adequate to establish the strong thesis (T1). In addition, if either the moderate or weak thesis is intended, then Hamblin owes the reader an account of how the dialectical criteria are to be entered into the process of reckoning the worth of an argument.

Let me reformulate my reservations in a slightly different way. Take argument A (consisting of premises P1-Pn and conclusion C) – formulated by Smart and given to Brilliant and Dull. Brilliant accepts the premises and having no other problem with the argument pronounces it a good one. Dull will not accept, let us say, P2 and P3, and so pronounces the argument a bad one. Are we to say that the argument was good for Brilliant but not good for Dull? Suppose now that we distinguish between Dull-1 and Dull-2. Dull-1 rejects P2 and P3 but is willing to give reasons and can give them. Do we not want to be able to distinguish these two? Does Hamblin's position allow for such differentiation? Should we not require "rational acceptance" rather than mere "Acceptance"? Isn't "accepted" entirely too weak a standard?

Another problem is the possibility – indeed likelihood – that there can be an argument which is logically good yet is not accepted by (at least some of) those to whom it is directed. Let me put my position this way. Suppose we call an argument *effective* if it satisfies criteria (D1)-(D5). The problem is that it is not clear to me that every good argument is effective. Nor yet that every effective argument is good, as we noted before that an argument might be accepted by its audience but contain tricks or cheats. I think

what Hamblin has done – perhaps without knowing it – is replace *the logical criterion of goodness with the rhetorical criterion of effectiveness.*

Let me conclude by summing up my problems with Hamblin's proposal. First, there are hermeneutic problems. What thesis about dialectical criteria does Hamblin mean to argue for? Strong? Moderate? Or weak? Second, there is a problem with identifying the central dialectical concept: is it acceptance? Acceptability? Or acceptance for good reason? Third, if we take him to be advocating acceptance as a replacement for truth – the strong thesis – then there are problems. For it is not clear just what counts as acceptance, which also seems too weak a standard. And there are other difficulties, some of which I have tried to outline above. My suspicion is that what Hamblin's proposal for dialectical criteria captures is not so much logical as rhetorical virtue.

6. Conclusion

Hamblin's critique of the conventional candidates for criteria of good argument has won quite widespread *acceptance*, as I indicated in my opening remarks. Are his arguments good arguments? From a rhetorical point of view, I think we would have to say that his arguments were effective and in that sense were good. However, I have argued that acceptance is not enough, and I have given some reasons to think that Hamblin's own dialectical candidates don't pass muster.

My strong suspicion is that Hamblin's difficulties stem from an inadequate conception of argument/ation. I hinted at this point earlier when I raised the question: Where do the alethic standards come from (above p. 168ff.) and again more recently when I emphasized the notion of argument as *rational persuasion* (above p 158, 163). But investigation of this suspicion must be left to another time and place.

Notes

1. Earlier versions were read as papers at the Ninth National and Seventh International Conference on Critical Thinking, Sonoma State University, August 1989, and at the University of Windsor, Department of Philosophy Dry-Run series, October 1989. I am most grateful to members of those various audiences. In particular, I wish to thank my colleagues J. A. Blair and R. C. Pinto for their forceful criticisms; likewise Mark Weinstein and Jerry Cederblom, and finally Robert Binkley, who commented on a version read to the Ontario Philosophical Society, October 1989. Lastly, I wish to think an anonymous referee of *Philosophy and Rhetoric* for some trenchant criticisms of an earlier draft.

2. The impact of Hamblin's case has been enormous. See for example Govier (2e 1987). Govier adopts without comment or criticism the arguments Hamblin advances here.

3. The term “model interlocutor” comes from Blair and Johnson (1987: 50-53); see above, Chapter Five p. 96ff.

4. How do we as a matter of fact hit upon premises? In my own case, I almost never explicitly attend to what I think my audience accepts, or what I can get by with, but rather what is needed to get the job done, what is strong enough and true enough.

Chapter Ten

Massey on Fallacy and Informal Logic: A Reply

1. Introduction

In his "The Fallacy Behind Fallacies," Massey (1981a) offers a critique of current accounts of fallacy. His critique appears to have been prompted by the treatments of fallacy in informal logic textbooks. Some of the ground Massey turns over here has been plowed before. The claim that there cannot be a theory of fallacy because there cannot be a theory of invalidity (Massey 1975) has been criticized by others (George 1983; McKay 1984). In this chapter, I concentrate on what is new here: Massey's case against informal logic.[1] In Part 2 of what follows, I will examine Massey's critique of informal logic and fallacy theory. Since it turns out that his critique depends on no small measure on how "Fallacy" is defined, I address that issue in Part 3. In Part 4, using Massey's article as a springboard, I reflect on some of the deeper issues involved in the tension between formal and informal logicians. Part 5 is a brief conclusion.

2. Massey on Fallacies

In Section I of his article (entitled "State of the Subject") Massey criticizes the treatments of fallacy found in introductory textbooks, "especially those that propound so-called informal-logic" (1981: 480). His basic claim (to be examined in the next section) is that "there is no theory of fallacy whatsoever!" (490). For the present, I wish to examine the case Massey presents against informal logicians.

Massey begins by citing a "distributional fact" about treatments of fallacy: these are typically found, he says, in introductory textbooks rather than in journals, scholarly treatises or advanced textbooks. Since textbooks are parasitic on journals and scholarly tomes, it would seem to follow that the treatments of fallacy found in textbooks will, bereft of proper nourishment, display all the symptoms of conceptual malnutrition. These are: first, aimless or directionless thinking; second, exaggerated fascination with taxonomy and classification; and third, shoddy reasoning. What is Massey's basis for these allegations?

Regarding the first charge, he writes:

> Chapter or units on fallacy contrast markedly with those on sentential logic or quantifiers or even syllogistic . . . There is no theory to underpin or give structure to treatments of fallacy. Consequently these treatments appear as a hodgepodge or miscellany of "fallacies" individuated by historical accent and sometimes related only by possession of a common pejorative label. (489)

The complaint appears not to be so much aimless or directionless thinking as lack of systematic organization stemming from lack of adequate theory. However, Massey produces no instances of this phenomenon. There were several informal logic textbooks on the market when Massey wrote whose presentations of fallacy could hardly be convicted of aimless or directionless thinking. In addition to Kahane (1971), the list would include Munson (1976), Fogelin (1978), and Carney and Scheer (1964).

The second charge of exaggerated fascination with taxonomy is not substantiated by any reference to texts exhibiting this trait. Nor is it clear to me how a textbook could exhibit this feature, since any text simply displays a certain classification. (It may well be that fallacy theorists have thus far failed to agree upon a unified classificatory scheme but that is a different matter.)

Massey does provide examples and discussion of texts which he finds guilty of the third charge – shoddy reasoning: Kahane (1971) and Copi (1972 4e). We will look at his treatment of both.

A. Massey on Kahane

Massey charged Kahane's text with shoddy thinking. The basis for this charge is as follows. Kahane divides fallacy into two categories – fallacious even if valid and fallacious because invalid. It is the presence of the former category that Massey takes as evidence of shoddy reasoning. One species of this type of fallacy is what Kahane calls suppressed evidence. Massey writes:

> Kahane's presentation (not Kahane – he knows better) suggests that there is something wrong with deriving a conclusion from premises that encapsulate some of your evidence when other evidence at your disposal renders the conclusion improbable. But as everyone knows, valid arguments remain valid no matter what other premises are added. That is, if some of it implies the conclusion, then so does your total evidence. It is impossible therefore for a valid argument to instantiate the *fallacy* of suppressed evidence. (490)

But this conclusion does not follow. *Grant* the point that a valid argument remains valid no matter what other premises are added. *That* is not the issue. The issue raised by Kahane is whether an argument that has suppressed or ignored evidence unfavourable to its conclusion is fallacious (even if valid). By "fallacious" Kahane means "an argument that should not persuade a rational person to accept its conclusion" (1971: 1). Kahane's view is that an argument which has suppressed or ignored unfavourable evidence should not persuade a rational person to accept its conclusion and hence is (in Kahane's sense of the term) fallacious. Massey has every right to adopt the conventional definition. But then he has no basis to accuse Kahane of shoddy reasoning since the difference between them is a conceptual one.[2] Since this is the entire basis of Massey's case, I conclude that Massey has not made good on the charge of shoddy reasoning against Kahane.

B. Massey on Copi

Massey charges Copi with shoddy reasoning in his "treatment" of an argument from Scotus, which Copi includes in an exercise. Unfortunately for Massey, Copi provides no analysis whatsoever of this argument, hence *in the absence of any specimen of Copi's reasoning whatsoever by Copi* it is difficult to see how Massey can charge him with shoddy reasoning. Massey *conjectures* that only two of the fallacies discussed by Copi would appear to be appropriate choices and argues that both would be inappropriate. Under the *assumption* that Copi wants Scotus' argument evaluated as *ignoratio elenchi,* Massey argues that such an evaluation would not be correct. To evaluate anyone's argument, Massey reminds us, we must first allow what that argument was, which means we must evaluate Scotus' argument in context. He proceeds to reconstruct that argument, filling in the background assumptions from the wider context of Scotistic thought. He writes:

> To evaluate Scotus' argument as shoddy thinking is itself shoddy thinking. To wrench a passage from context and then damn it as a case of *ignoratio elenchi* reflects poorly on the evaluator, not the argument. (491)

Massey is right, though the *ignoratio* appears to be his. Recall that he is supposed to be showing that Copi is guilty of shoddy reasoning (to illustrate his point about informal logic texts generally). Yet Copi himself made no evaluation at all of Scotus' argument. The most that can be said is that if anyone were to evaluate the argument as an *ignoratio* in the way that Massey projects onto Copi, that person would have been guilty of shoddy reasoning – a conclusion that lies some distance from the one advertised.

Having said this let us take note of how Massey arrives at his (faulty) verdict: he reconstructed Scotus' argument within its wider background so as to present the most plausible formulation of the argument against that background. Precisely this kind of sensitivity to context in argument reconstruction is what informal logic textbooks counsel when they enjoin the Principle of Charity. (E.g. Hitchcock 1983: 107f; Cederblom and Paulsen 1982 2e: 12-17; Nolt 1984: 101-03).

And so there is irony here. Massey charges Copi with shoddy reasoning. But no reasoning of Copi's was ever placed under the microscope. Massey's own reasoning leaves much to be desired; and his practice in reconstructing Scotus' argument testifies to the importance of the Principle of Charity – a semantic principle whose first application in logic is to be found in informal logic textbooks. (See Johnson 1981a). It is a principle of criticism about which, for all of their precision and rigor and directed thinking, formal logic texts have nothing whatever to say. Perhaps informal logic texts are conceptually malnourished. But the practice they prescribe in dealing with arguments is precisely that which Massey has followed. Though he has practiced it on reasoning which he, rather than Copi, provided.

In sum, then, Massey's three charges against informal logic textbooks are not substantiated. In support of the first two charges, no real evidence was produced; and the critiques of both Kahane and Copi leave much to be desired.

Before concluding I should like to comment briefly on three points Massey makes.

1. *The distributional fact.* As we have seen, Massey claims that the natural habitat of treatments of fallacy is textbooks; and that, with rare exception, such treatments are not found in scholarly treatises or journals or advanced textbooks. This may have been true

when Massey wrote his article, although – as Johnson and Blair (1980) documented – there had been considerable attention devoted to some of the fallacies – e.g. begging the question, *ad hominem,* and the appeal to ignorance – in reputable philosophical journals like *Review of Metaphysics, Dialogue,* and *Synthese*.[3] Would it surprise anyone to discover that more articles have been written on, say, justified true belief than on fallacies? What this fact means requires interpretation. After all there are patterns in philosophical and logical research – as in any other discipline, and I would not want to pin the case for merit on trends or frequency charts. Further, there is accumulating evidence of interest in fallacy theory.[4]

2. *The relation between theory and text.* Massey takes a somewhat rigid position on this topic. His exact words are: "Textbooks are parasitic on journals and scholarly tomes, *and properly so*" (189). This view is based on one particular paradigm of intellectual inquiry: i.e., science. The tradition Massey represents takes logic to be a science, so it is natural enough that his view would reflect this paradigm. But it does not strike me as a necessary truth. There does not seem to be any reason why the development of informal logic as an intellectual inquiry must follow the path of formal logic. The need for better and more adequate theory can grow out of practice – which is what has happened in informal logic. Let me illustrate. Those who have attempted to work with the inductive-deductive dichotomy in the classroom have, in some cases, been led by that experience to question either the validity or the teachability of the distinction.[5] The problem of how to identify missing premises or assumptions in argument is naturally fed by the attempt to teach students how to do this and the consequent realization that many intriguing theoretical problems must be addressed. In short, the absence of theory in informal logic is perhaps an indication of the current state of the discipline. It may not emerge as a science in the manner of formal logic. But I disagree with Massey's implicit belief that it must.

3. *Finally, again on the theory-text point.* There are at least two informal logic textbooks that have made a contribution to the theoretical development of the subject. For example, on the matter of displaying argument structure: the innovative work done on this appears first, so far as I am aware, in Beardsley (1950) and later in Thomas (1973) and Scriven (1976). A second instance of this important topic is to be found in a journal (Johnson 1981a).

That informal logic is in a far less satisfactory state that formal logic as regards solid theory is a point that cannot be denied. Those of us doing research in this area are keenly aware of this point. It must be kept in mind that for most of this century informal logic has been the subject of benign neglect by logicians.

Let me sum up what I have said in this section. I have argued that Massey's claims about the state of informal logic are compromised by lack of evidence. What evidence is provided is far from compelling. While I do have sympathy for his complaint about the lack of theoretical development in informal logic, it would be unfair to judge future possibilities by what has, or has not, occurred thus far. The one substantive point that Massey makes against informal logic depends on the claim that there is no theory of fallacy. As we shall see, the strength of this claim depends on Massey's conception of fallacy, to an examination of which we shall now turn.

3. The Nature of Fallacy

Following Hamblin (1970: 12), Massey (1981a: 494) adopts the conventional definition of fallacy in his critique of Kahane: "A fallacy is an argument which appears to be valid but is not." There are at least three problems with this way of conceiving fallacy.[6]

First, this definition makes fallaciousness too subjective. Consider argument A and suppose that this argument is invalid (no matter how that question is settled). Suppose further that to X (a trained logician) A appears to be invalid while to Y (a student in X's logic class) A appears to be valid. Then on this account of fallacy it will follow that for X the argument A is not fallacious, whereas for Y it is fallacious. But that is not all. Consider Z, who is neither logic teacher nor logic student but simply the ordinary reasoner. What will "valid" mean to Z? Is there enough comprehension of the convention logical sense that Z will be able to say "A appears to be valid."

My suspicion is that the answer to this latter question is "No," which means that a fallacy can occur only in quite restricted demographic circumstances. Hence if we accept this definition of fallacy, we shall find that neither ordinary reasoners nor trained logicians will pronounce A fallacious (because to neither will it appear to be valid); and that A is in fact fallacious (because to neither will it appear to be valid); and that A is in fact fallacious for the student but not for the professor. I suspect that this feature of the conventional definition makes it too wobbly to be much of an analytic tool.

Second, how are we to take the crucial term "valid" in this definition? If valid means "the conclusion follows necessarily from the premises," then a fallacious argument would be one in which it *appears* that the conclusion follows necessarily from the premises but in which it does not. This is a problem because if we unpack it in the standard way, one of two conclusions will follow: either the term *fallacy* will be applicable only to deductive arguments (which seems unduly restrictive) or else even "good" inductive arguments turn out to be fallacious (because not valid). Now if the concept of a fallacy is meant to capture the idea of a logical flaw in an argument, then an important issue is begged: namely whether there cannot also be both fallacious and non-fallacious inductive arguments. My second point then is that the conventional definition of fallacy is restrictive and depends on a controversial and undefended thesis in the theory of argumentation. (See Govier 1982)

Third, let us take an example supplied by Massey and see what happens when we apply this definition to it. Massey stops short of claiming that the inference below is fallacious, yet seems to regard it as such.

(A) It has not been proved that X did Y, so X did not do Y.

If it is fallacious then it follows that (A) must seem valid and it must be invalid. Are these conditions satisfied? I think not.

I suspect that Massey himself does not think that (A) seems valid. No doubt some will think that (A) is valid, but that problem takes us back to the first point about the subjectivity of this way of conceptualizing fallacy.

Consider the other condition. Is (A) invalid? That is, does the conclusion follow necessarily from the premise? No, it does not. A person may not have been proven to have done Y (perhaps because the necessary evidence was destroyed) and yet have done Y. So

the conclusion doesn't follow; the inference is invalid; and if it seems valid, then it is fallacious.

But there is another way of looking at (A), viz., as an elliptical or truncated inference in which the reasoner has made an assumption: *If a person has not been proven to have done something, then that person did not do it.* Suppose now we revise (A) to incorporate this assumption:

> (RA) It has not been proven that X did Y; (Assumption: If a person has not been proven to have done something, then that person did not do that something) so X did not do Y.

Now (RA) is clearly a valid argument. Hence (RA) cannot be fallacious even though it is essentially the same argument as (A). However, (RA) is not a good (i.e., sound) argument, because the assumption is unacceptable. To defend this verdict, note that we will make exactly the same point that we made above, viz. a person may not have been proven to have done Y (perhaps because the necessary evidence was destroyed) and yet have done Y.

In the end, both ways of viewing the matter seem to come to the same; the criticism which reveals the logical problem is the same. However, taking (A) as our target we say that the inference is invalid and hence fallacious; if we look to (RA) we cannot say that it is fallacious because the reconstructed inference is valid. If one wants to claim that (A) and (RA) are essentially the same argument, then either both are fallacious or neither is. But the Hamblin-Massey conception does not accommodate this view.

The moral that I draw from these three points is that the Hamblin-Massey definition of fallacy is inadequate.

What about Kahane's conception? Can we get the necessary mileage out of Kahane's definition of a fallacy as an argument which should not compel acceptance by a rational person? Notice, by the way, that this definition avoids the restrictiveness of the Hamblin-Massey conception. Still, I am unhappy with this conception for three reasons.

First, no argument with a blatantly false premise should compel acceptance. Still I don't know that I want to call every such argument fallacious. Second, the *definiens* contains a term, "rational person," which is at least as difficult to define as the term it purports to define. Third, Kahane's definition doesn't really get to the core of the matter, as to why the argument should be rejected.

Is there a better definition of fallacy these days? The problem of defining fallacy has become the focus of scrutiny recently, for in the last few years we have several important attempts to redefine fallacy. These efforts are relevant to our concerns because of Massey's claim that there is no theory of fallacy because there is no theory of invalidity. But if the concept of fallacy is disentangled from the concept of validity, Massey's claim doesn't follow; and if the fate of informal logic is, as I believe it is, tied to the concept of fallacy, there may yet be hope for it.

Herewith then a brief review of recent attempts to define "fallacy."

In 1980, Finocchiaro put forth the idea of fallacy as "a type of common but logically incorrect argument" which led him to the conclusion that there probably are no fallacies because "the various disputed practices usually referred to as fallacies are either not common or not logically incorrect or not arguments." (Finocchiaro 1980) My own

conception of fallacy comes closest to his, though we disagree about whether fallacies exist. (See Johnson 1987: esp. 244.)

In 1984, van Eemeren and Grootendorst began to develop their conception (Eemeren and Grootendorst 1984; 1987). This is an important initiative because the pragma-dialectical school believes that it will be able to imbed fallacy within the context of solid theory. But it is too early to judge whether those hopes are warranted.

Walton reviewed the traditional definitions, and drew some lessons from them; i.e., that what are often called fallacies – *ad hominem* – are not always fallacious; and proposed a new conception in which a fallacy is distinguished from a criticism:

> A fallacy could be defined as a type of weakness, deficiency or breach of reasonable procedures in an argument or move of argument, which is open to criticism to the extent that the argument can be judged to be strongly refuted. (1987b: 329)

This proposal is an interesting one, though we will not be able to judge its real strength until Walton has provided greater guidance about the *definiens*. Furthermore, this proposal pins fallacy to areas of intellectual endeavour where the idea of strong refutation makes sense, thereby severely restricting its application.

Finally, in 1987, Hintikka argues that we should conceive fallacy as ruptures (mistakes or breaches) in the questioning games which were practiced in the Academy and the Lyceum. We note first of all the proximity – at least on the surface – of Hintikka's approach to both Walton and the pragma-dialectical approach. All three appear to favour the view that there are rules governing rational exchange and that a fallacy is a violation of those rules.

In a passage in which he is critical of the contemporary tradition, Hintikka writes:

> What I shall do instead is to show that these so-called fallacies originally were not fallacies at all in our twentieth-century sense of the term, that is in the sense of being mistaken inferences. They are not mistaken inferences, not because they are not mistaken, but because they need not be inferences, not even purported ones. The error of thinking the traditional fallacies are faulty inferences is what I propose to dub "the fallacy of fallacies." It is the fallacy whose recognition will, I hope, put a stop to the traditional literature on so-called fallacies. (1987: 211)

I have three points to make about Hintikka's views. First, the 20th century sense of the term is wider than the category of mistaken inference. Generally, a fallacy is defined as a logical mistake in an argument. One may wish to hold that the difference between these two categories is thin, but that takes me to my second point: that argument and inference are not the same thing. (See Chapter Four and Chapter Five.) Third, Hintikka seems committed to the assumption that since fallacies were originally mistakes in dialogue games, then that alone is their real nature. This comes close to, dare I say it, a genetic fallacy of some description.

My own view is that it is sometimes useful to extend a concept, which is why the concept of fallacy has undergone an evolution. That is the position I advocate. My preference, explored at greater length elsewhere, would be to purge the concept of fallacy of the nuances deriving from its Aristotelian etymology, retain enough of its history to

connect it with the idea of a logically incorrect argument and introduce the notion of frequency. Thus I would propose the following definition: a fallacy is a pattern of argument which occurs frequently and violated the requirements of good argumentation. Elsewhere I have defended this position and also articulated policies which, if adhered to, would obviate many of the standard objections to fallacy theory as an instrument of criticism. (Johnson 1987b: esp. 245f.)

However, the purpose of this review was to show that the definition of fallacy adopted by Massey is open to criticism, and that there are conceptions which at least render problematic his claim that "we have no theory of fallacy because we have no theory of invalidity," although they weren't in circulation at the time Massey wrote his article.

Thus far I have argued that Massey's indictment of informal logic, though not without its merits, was poorly argued and also that the conception of fallacy implicit in the position that we have no theory of fallacy is flawed. In the next section, I would like now to address myself to what may be the deeper issues that divide formal and informal logic.

4. Logic: Formal and Informal

Informal logic may be viewed as the latest in a long line of reforming logics.[7] Since formal logic is the dominant form of logic, we may expect some tension between the two. The debate has so far been civilized (*pace* Massey's unkind reference to "so-called informal logic" [489]), though it carries with it already the earmarks of traditional philosophical disputes: neither party quite understands the other, and each questions the legitimacy of the other. Rapprochement seems desirable, but before that can occur, each "side" needs to understand what its own interests and values are, what its motivating goals and pursuits are. Let me attempt such an articulation, taking Massey to be representative of the formalist approach – with all the customary *caveats*.

In another article, I have discussed the pedagogical differences between the two logics. (Johnson 1987: 248ff.) Further differences become evident when we consider that formal, deductive logic begins with the repudiation of psychologism – that view that psychology provides at least part of the basis for the constitutive understanding of the mental (Cussins 1987). How ill at ease the formal logician is with anything that smacks of psychologism is evident in this passage from Massey's article:

> Fallacy is rather a matter of the generative limitation of accepted rules which are in turn a matter of theoretical explanation of inferential practice. Fallacies, therefore, are perhaps of more interest to psychologists and psychiatrists than to logicians and philosophers. (1981a: 499)

The rigid demarcation between logic and psychology which lies at the core of formal logic is evident here. From the point of view of those interested in proof and implication, any reference to the actual psychological processes of individuals must be considered utterly irrelevant. Either P implies Q or it does not; it does not matter particularly what you or I think, not does it matter what your frame of reference or world view is. To the degree that the term "psychologism" suggests a decisive role for reference to the actual mental process

in deciding normative issues about what follows from what, to that same degree psychologism must be repudiated.

When the scene shifts from implication to argumentation, the situation becomes more complicated. By "argumentation" here I mean to refer to that social practice by which a rational individual seeks to persuade other rational individuals (or himself) of the truth of some controversial or doubtful proposition by using reasoning and evidence, or by which the individual inquires into the truth of some proposition. In this realm of reasoning, frames of reference become important and may even become themselves the question at issue. If the purpose is to introduce the student to the practice of constructing arguments and of avoiding bad arguments, then reference to context, circumstances and even the psyche of the individuals who participate in the practice will be impossible to avoid.

An analogy may be helpful: whether D is a good definition of W will be a function of what users of W think it means. On the other hand, whether P follows from Q has nothing to do with what users of P and Q think. The question whether A is a good argument is a complicated question with resemblance to both of the above. From the point of view of formal, deductive logic, a good argument is a sound argument. One component of this – validity – is held to be a matter of fact, not a matter of what you or I or anyone else thinks. The other component is true premises. Whether a premise is true or not is almost always a debatable issue, like the issue of definition and unlike the matter of validity. In other words, argumentation belongs to the realm of pragmatics, which means that reference to the users of language and to the context cannot be avoided. By contrast, implication belongs to the realm of syntax. Hence it is possible in principle to avoid reference to context and the individual.

Thus far I have dealt with the origins of formal and informal logic and the differences they appear to make in the shape they have taken. It is time now to change the focus of discussion to some of the other differences: i.e., the competing values at work in each. That discussion will function as a prelude to a brief consideration of how these different values, once identified, might be brought together and unified in a comprehensive theory of reasoning. Finally on the basis of that brief attempt I would like to suggest how the tension between these two logics might be resolved.

1. Different Values

It is tempting to think that the proper diagnosis of the tensions between formal and informal logic is that they represent different values. Though I shall myself flirt with that temptation below, I believe that the tension between these two logics has a better explanation, which I shall turn to in the next sub-section. For the moment, let us see what mileage we may be able to get from the notion that these two logics emphasize different values. Two values which seem to stand front and center for the formal logician are rigor and theory. Thus, Massey writes:

> . . . far from being antithetical to the humanities, rigor, clarity and precision of thought ought to be their hallmark . . . Modern logic provides the natural and most congenial route to these mental attributes for contemporary students of the humanities.

> . . . logic inculcates the portable skills and strategies that students can bring to bear on all their other subjects at great profit. The result is a degree of intellectual sophistication otherwise unattainable. (1981a: 304)

Some confirmation of this point may be seen in the fact that in his *Symbolic Logic* when he discusses logistic systems, Copi uses the term "rigor" some ten times in the course of the first two pages.[8]

On the value of theory, Alvin Goldman writes:

> There are no established truths of informal logic; indeed it is quite unclear what the content of informal logic is, or should be. By contrast, formal logic has a well-defined content and set of truths. (1985: 65)

From the perspective of a formalist, the story goes like this:

> Formal logic is a science; its validity is that of any science, whether or not that science can be applied. But as a matter of fact formal logic can be used to evaluate arguments; and the student who studies formal logic will learn to appreciate rigor and clarity.
> Informal logic on the other hand is nothing but a set of loosely devised procedures with no science and no theory to back them up, hence not deserving of the name logic.

There is something right and something wrong with this story. What is right about it? In some sense of these terms, it would be true to say that the student who learns formal logic is learning theory and rigor.[9] The student who masters propositional logic, say by working in a natural deduction system, is learning something about one kind of rigor. Similarly, the student who learns how to translate sentences from ordinary English into canonical notation is learning about one kind of clarity and precision – the sort closely associated with mathematical proof. Such precision and rigor may well be helpful training for life and for dealing with ordinary rhetoric.

But this particular story about rigor and precision is wrong in two important respects. First, told in this simplistic way, it runs the risk of overlooking an important lesson from Aristotle. As he tells us early on in the *Nichomachean Ethics*, it is the mark of the educated man not to expect more precision than the subject matter affords (1094b25). The cash value of Aristotle's observation here might be that precision and rigor vary with context. What counts as rigorous proof in the context of a mathematical logic course is one thing; a rigorous investigation of a murder by the local police force is another.[10] In the former, rigor is achieved when all of the rules are spelled out and each step is performed in accordance with the rules. But that could hardly be adopted as the ideal for a police investigation, where rigor means rather that all important leads are carefully followed up; no slipshod moves, no corners cut. This leads to a second problem with the story.

The attribution of the value of rigor to formal logic might be construed so as to have the misleading implication that informal logicians do not also value rigor, and trailing behind it is the innuendo that informal logicians tolerate sloppiness. Any such implication is unfair to the practice and goals of informal logicians who wish to teach their students how to question the premises of arguments, how to detect and to challenge hidden assumptions, and how to adjudicate reasoning where uncertainty is rife.

I know of no solid evidence which shows that the study of formal logic will make a student more sophisticated than would the study of informal logic. If we look at the way in which each typically evaluates its product, just the reverse may actually be the case, when it comes to the appraisal of arguments. A typical assignment in a formal logic course requires a student to decide whether a particular argument is sound. The critical vocabulary of the formal deductive logic course is minimal, containing essentially three terms: "sound," "true" and "valid." The student may face a decision as to which of several possible procedures he might employ to reach a verdict regarding validity, and there are pitfalls along the way, as Massey has pointed out. (1981a 495f.) But ultimately, if he applies the machinery of formal deductive logic to a specific argument, the formal logician must return one of two verdicts: either the argument is sound or it is unsound.

Contrast with this the situation encountered by the student taking informal logic, where the focus will be on argumentation in natural language. Perhaps the argument will contain a vague term which must be clarified before the analysis can proceed. Here the student may have to reflect on what is required of him by the Principle of Charity. Next the student must understand the overall structure (I do not say form) of the argument. Next he must decide which of the branches of the argument carry most weight and these must be inspected for potential flaws – fallacies. It may be that the argument contains a number of flaws. Here the critic will have to abide by the Principle of Discrimination, which requires that he be judicious in deciding which of several possible lines of attack to pursue. Finally comes the written critique, in which the student must construct an argument in defense of his claims and criticisms. A student who has undergone such training would also be "sophisticated" in some important sense of that term.

Consider now another possible avenue for highlighting the differences between formal and informal logic: the value of theory. It is tempting to see formal logic as much more dependent on and desirous of theory, whereas informal logic seems less theory-dependent and more practically oriented. No doubt there is some truth to this contrast. Informal logic is thin on theory, whereas formal deductive logic is over-developed in that department. There seems to be more theory than can ever be put to use. But *caveats* are necessary here, too: for informal logic's lack of development with respect to theory can at least in part be ascribed to its brief (recent) history. Many, if not most, formal logicians would staunchly defend the practical value of their discipline. (Massey 1981b and Belnap 1981)

However, one suspects that what is really at work here is not accurately represented as a theory/practice split. My suspicion is that underneath this apparent difference lies another: for after all, there is theory and there is theory (Weddle 1985). It is rather that formal deductive logic models itself after science; or rather that it sees itself as primarily science – and very hard science at that (Goldman and Wittgenstein). Informal logic, on the other hand, sees itself rather as techne, a craft or practice. Thus, if one may put the matter this way, they differ in their respective self-conceptions.

The foregoing remarks perhaps serve to raise doubts about simplistic forms of storytelling. To complete this exercise, it would be necessary to look in some detail at the informal logicians' table of values, and then see how informal logic fares in comparison. But rather than that, I shall bring this set of reflections to and end by saying that I doubt that any reasonable articulation of the tension between formal and informal logic will reveal that it is fundamentally a matter of different values. For, as we have seen, the apparent

differences in value may well turn out to be different ways of interpreting a set of common values. I believe that if we wish to understand the division between these two logics, we get limited mileage stressing different values, a little more from understanding their different self-conceptions. We are better off looking elsewhere for the explanation.

2. The Need for a Theory of Reasoning

I have claimed that formal logic has for its main focus the concept of implication or entailment, whereas informal logic (whether pursued by fallacy theory or not) has as its main focus the practice of argumentation.[11] I suggest that the tension between formal and informal logic can best be viewed as one in which different types of reasoning are studied. If this diagnosis is more appropriate, then these remarks, brief though they must be, will bring to the fore the need for an adequate theory of reasoning which will show the different mandates for both formal and informal logic.

In my view, formal logic is the study of one important logical relationship: implication – a relationship which holds (or does not) between statements (or propositions). The development of systems of strict implication out of the sense of dissatisfaction with material implication is some evidence of the truth of this claim. Informal logic, on the other hand, deals with argumentation as it is found in real-life settings. This means, as we have seen, that the informal logician faces a series of tasks which have no counterpart in the realm of formal logic. Is there an argument? How can the argument best be extracted from its context and prepared for evaluation? What standards or range of them should be applied in the evaluation of the argument once it has been readied? Is fallacy theory adequate? These and a host of other questions are the sort which the informal logician must face. (In marking the difference between the two in this way I realize that I presuppose that implication and argumentation are different.)[12]

A comprehensive theory of reasoning would indicate clearly the differences between and the respective roles of implication and argumentation, as well as a host of other types of reasoning involved in the enterprise of being rational. However, to my knowledge, no such theory at present exists. But if this way of distinguishing the two logics is acceptable, even if only provisionally, then I think we may hope for a resolution of the tension.

3. Possible Resolution

Are there fallacies? Does a theory of fallacy require a theory of invalidity? Can the suggestion introduced in the last section about a way to demarcate between the provinces of formal and informal logic be incorporated into an answer to the question? Let us see how this might work.

Formal logic studies implication and hence is committed to discovering and perfecting methods for selecting valid and invalid implications. Informal logic studies argumentation with a view to developing methods and standards for demarcating between good and bad arguments. The term “fallacy” may be thus construed as belonging to the meta-language of argument criticism. Which of these logics to use is a pragmatic matter. Hence, it might be urged, when one is studying implication, then the formal logical

approach is advisable. On the other hand when one is dealing with argumentation in natural language, then informal loic would be the better choice (See Johnson 1987b: 248ff.)

5. Conclusion

What then are the fallacies in "The Fallacy Behind Fallacies"? Well, there are several. I have purposely refrained from tossing fallacy labels around in this chapter. Still in all, I think there are grounds for charging Massey with several. In Part 1, Massey's claims about informal logic textbooks are hasty generalizations based on an inadequate sample and his conclusions are based on problematic premises. I have also argued that he is guilty of straw manning Copi and that his charge of shoddy reasoning against Kahane makes use of an equivocation on the concept of fallacy. More recently I have argued that there is a way of making room for both formal and informal logic (a point which by the way Massey concedes elsewhere) and that claims like the following are therefore premised on a false dilemma: "Fallacies, therefore, are perhaps of more interest to psychologists and psychiatrists than to logicians and philosophers." Finally, when Massey asserts (496) that "all of us try to advance good arguments. Validity, *of course*, is one element of the goodness sought (emphasis added)," I would claim that he begs an important question.

In summary, I have argued that Massey is guilty of attacking Kahane and Copi (and by implication) informal logicians on the basis of insufficient evidence; I have argued further that the conception of fallacy which underlies his critique is problematic and I have tried in Part 3 to do better by examining various current concepts. Lastly, I have reflected on the deeper issues involved in this confrontation between formal and informal logic. I have proposed a way of resolving that tension based on distinguishing between inference/implication (the province of formal logic) and argumentation (the province of informal logic).

Notes

I am grateful to two anonymous referees of *Synthese* for their comments and criticisms. An earlier version of this chapter was read at the Department of Philosophy at Wayne State University in January 1985. I am grateful to those who attended for their vigorous response to my paper. Finally I would like to thank Hans Hansen for his helpful comments and suggestions.

1. It is not entirely clear to me what Massey understands by "informal logic." It seems that he identifies this terms with a fallacy approach to the teaching of logic. As examples of informal logic texts, he cites Kahane (1971), Copi (1972 4e), and Fogelin (1978). But all three texts contain some amount of formal logic, and only one – Kahane's – might be said to be a fallacy approach. There were informal logic texts on the market when Massey wrote this which were not fallacy oriented: Thomas (1973) and Scriven (1976). Truth to tell, the term "informal logic" did not then have

and does not yet have sufficient regularity of usage to allow anyone to state its meaning with precision. In other words, attempts to state its meaning are stipulative rather than reportive.

2. Kahane 1971: 12, n. 16. One would have thought that the very fact that Kahane introduced this category (fallacious even if valid) would have cued Massey that he (Kahane) did not mean by "fallacy" an argument which "appears valid though it is invalid." And surely the fact that Kahane goes on to illustrate this category with the fallacy of inconsistency should have clued Massey in about what was happening. For an argument with inconsistent premises may well be valid, and yet (on Kahane's account) be fallacious because a rational person should not accept it.

3. See Chapter One above pp 15-18.

4. Johnson and Blair 1985. Worth looking at in this connection is Woods and Walton 1982.

5. A long debate about the nature and the adequacy of the inductive-deductive distinction can be found in *Informal Logic Newsletter,* beginning with Weddle (1979). Even Copi, who is convinced that the distinction is legitimate, now says that for a course in informal logic "in which the student is helped to acquire useful logical skills, the deductive-inductive distinction is not important and need not be drawn" (In 1985 *CT News* 3:3).

6. My first two considerations here parallel problems raised also by Walton (1987b). The reader interested in recent theoretical work on fallacy theory should also consult Grootendorst (1987) and also Hintikka (1987). Vol 1 No. 3 (1987) of the journal *Argumentation* is devoted to the subject of fallacies. Finally, there is the fine study by Walton (1987a).

7. I am grateful to my colleague, Professor J. A. Blair, for pointing this out to me, and indeed for his help in seeing more clearly the issues I address in this part of the chapter.

8. It is interesting to note that there is no one term available to complete the contrast: rigor vs. …? Perhaps the best that can be done is to say that informal logicians want their students to learn how to make what cognitive psychologists Kahneman, Slovic and Tversky (1982) call "judgment under uncertainty."

9. Wittgenstein (1953) urges us not to be blinded by one particular ideal of "simplicity." "Simple" and "complex" are terms which vary with context, as do the terms which Massey here associated with formal logic: clarity, precision, and rigor.

10. I defend this position in Chapter Four above.

11. A proper defense of this point cannot be offered here. See Johnson Chapter Four above.

12. See Johnson 1987b: 248-50

Chapter Eleven

McPeck's Misconceptions

1. Introduction

John E. McPeck made a reputation as the gadfly of the informal logic and critical thinking movements with his monograph *Critical Thinking and Education* (1981) and several subsequent papers (collected in McPeck 1990). Whether his project has on balance been salutary we leave to others' judgment (see Scriven 1990 and Adler 1991, for a favourable verdict). We will only say that if his most recent article in *Teaching Philosophy* is at all typical (we will not here argue that it is), one should be wary of serious misconceptions about informal logic, and some fallacious arguments, in McPeck's criticisms.

In "What is Learned in Informal Logic Courses?" (1991), McPeck essays to sort out the good news for the teaching of informal logic from the bad. We question whether he appreciates the significance we see in the difference between informal logic and critical thinking.[1] Nor does his title help – "What is Learned in Informal Logic Courses?" – for it raises a question that his paper doesn't answer, except by dubious extrapolation. The question he explicitly addresses is different, namely, "What is taught when informal logic is taught" His answer: "Significantly less than is frequently claimed." Invoking a distinction between *learning to, learning how* and *learning what*, McPeck argues that informal logic cannot teach students the "how to" that it promises. Though he concedes that some small headway in that direction may be made – informal logic can teach what the structure of arguments is, a sensitivity to language and a disposition to analyze – he insists that it cannot teach students how to analyze arguments.

In what follows, our main contentions are that McPeck's arguments do not support their conclusions, that their conclusions are false, and that they rely on a faulty conception of informal logic. We also argue that McPeck fails to show in some cases that anyone holds the positions he attacks, that his reliance on philosophical authorities is ill-advised, and that his articulation of fallacy theory, in general and in particulars, is problematic in the extreme.

We begin where McPeck's paper ends, with his examples. By going through specific and concrete cases, we hope to clarify our disagreements with him. In the third and fourth sections of our response, we state and appraise the two general lines of argument he sets out.

2. McPeck's Discussion of Examples

McPeck examines some "typical examples from informal logic" in order to show "the plausibility of [his] criticism in greater detail." His guiding question is "whether it is the

form of an argument or its specific content which renders arguments 'strong *vs* weak' or 'fallacious *vs* non-fallacious." And the key issue is whether "the resolution of such questions rest[s] on *logic* (of any kind) or on epistemic (sic) *beliefs*." Due to time and space constraints he restricts his examination to only one of "several different approaches to informal logic," namely, "the fallacies approach," because it is "the most common approach to informal logic" (1991: 30). That's inaccurate, by the way. Many identify informal logic with the study of informal fallacies (McPeck quotes us correctly as making the point), but that is not to say that *most* do, nor that the fallacies approach *to argument criticism* (which is what it is) is the most common approach to argument criticism.

McPeck introduces his discussion of examples with the argument which he intends it to instantiate. He argues that "the fallacies approach" (falsely implying that there is only one[2]) defines fallacies as mistaken abstract forms of arguments (a definition he says is "provided in most textbooks" – a claim we dispute[3]), so that an argument with that form is *a priori* fallacious. Hence, the key evaluative question is whether an argument has a fallacious argument form. But, McPeck continues, at the same time each fallacious argument form "*must* have a contrasting non-fallacious form" – the form which the fallacious instance violates or misappropriates. Hence, the key evaluative question is whether an argument has a fallacious form or a non-fallacious form. "The sad truth," he contends, is that that question cannot be answered on the basis of the forms of the fallacies, but only by appeal to facts and beliefs about the world. (30f.)

This argument reveals a misconception between the following two propositions:

(A) "a fallacy will instantiate a particular pattern of argument";
(B) "a fallacy is defined as an argument instantiating a particular pattern."[4]

We think (A) is true, but (B) is false. We define fallacies as arguments in which certain conditions are satisfied – only one of which is (or implies) that the argument instantiates a particular pattern or form (Johnson and Blair 1983 2e: Ch. 2). The *defining conditions of a fallacy* include reference to, but are distinct from, the *form or pattern of argument* that a particular fallacious argument instantiates.

Now it is, and has all along been, our view that the determination that an argument is fallacious will require judgments about the facts of the situation.[5] In criticizing a certain theory of fallacy – one associated with ours – for failing to appreciate that assessments of facts about the world are necessary to decide if a fallacy has been committed, McPeck attributed the position he attacks to proponents of that theory, and by association, falsely, to us. Had he accused us of not emphasizing in an explicit way the importance of factual knowledge for the assessment of arguments – of failing to give the point explicit prominence – we would have to plead guilty. We welcome McPeck's insistence on its importance and we agree that it is a point worth emphasizing by an explicit discussion in informal logic texts. But that informal logic texts deny, implicitly or explicitly, the relevance of facts, or background knowledge, of beliefs about the subject matter, to the evaluation of arguments – that allegation needs to be supported by evidence, and we don't think any evidence for it exists (certainly not in anything we have written).

McPeck might think he has a rejoinder even if he grants the point just made. He might try to argue that since we've agreed with him that reference to facts or beliefs about the world is essential to fallacy identification, we have conceded the key point in his

criticism, namely "that informal reasoning is really not a matter of logic after all – no matter how loosely one defines 'logic.'" (31) The distinction implicit in this comment and explicit elsewhere in his article, between matters of logic (or form) and matters of fact (or substance), brings us to another misconception of McPeck's, one which may not be his alone either.

We suspect many people have a misconception about the subject matter of logic, narrowly conceived, namely that "the study of (formal deductive logic) . . . is the study of the methods and principles used to distinguish correct (good) from incorrect (bad) arguments."[6] Our view, which we can only state here, is that the subject of formal deductive logic is not forms of argument – insofar as arguments are natural language events and products. Formal deductive logic's subject matter is rather the formal properties of implication relationships holding between and among statements (or propositions); (for further discussion, see Chapters Four and Five above). We do not deny that there can be arguments in natural languages in which the relation between premises and a conclusion is intended to be, or is, cogent because the propositions so used may be interpreted as instantiations of forms of deductively valid implication relationships. But we also think there are many cogent arguments whose premise-conclusion connections instantiate no such forms.

Informal logic makes or requires no assumption that these standards will be matters of argument form, not substance. The "form/matter" dichotomy has its origins in Aristotle's pioneering work in what was to become formal deductive logic – logic narrowly conceived. McPeck's repeated invocation of it reveals that he is still thinking of logic in that sense. We would have to agree that if "informal logic" is logic in the sense of formal deductive logic, it must be about form, not substance; and if it is informal (buying into that dichotomy) it would be about substance, not form; and so (on that assumption) it would have to be seen as a thoroughly confused enterprise. But if one goes beyond terms and looks carefully with an open mind at how they have been used in many of the texts (e.g., Freeman 1988; Little et al. 1989; Govier 1988 2e; Damer 1987 2e; Johnson and Blair 1983 2e), in much of the journal literature (e.g., in the journal *Informal Logic*, and in our own articles) and in monographs (e.g., Walton 1989b), one will see that informal logic has a different project from that of formal logic – and the two (properly understood) are not at all incompatible. Informal logic is not formal logic without the symbolic apparatus, nor is it applied formal logic. It is the "logic" – i.e., the criteria of probity – of arguments and argumentation. McPeck recognizes that argument evaluation (the subject of informal logic) is not a matter of logic (i.e., formal deductive logic). But he treats this perception as a criticism of informal logic, thereby revealing his thoroughgoing misunderstanding of that enterprise.

We now proceed to show how McPeck's conflation of the conditions of a fallacy and the forms or patterns of argument referred to therein, and his misconception of informal logic, vitiate his discussion of particular examples of fallacies and undermine his criticisms.

McPeck chooses the fallacy termed "faulty analogy" as his first example, and targets Johnson and Blair's (1983 2e) treatment of it for extensive discussion. He chides us for having built the "mistake" of "faulty analogy" into our definition of the fallacy. We plead guilty: in defining what we consider to be a type of mistake in arguments, we offered a definition in terms of which what we alleged to be a mistake got defined as a mistake. We are unrepentant; but according to McPeck things get worse for us. It turns out that on our

account "the mere *form* of 'faulty analogy' does not determine whether an analogy is faulty or not," for the second condition of our definition is that "the two things being compared are not similar in the respect required to support the conclusion," and (as if we had denied it) this judgment requires reference to beliefs about the facts of the matter. The determination of whether a fallacy is present "will rest upon *many substantive considerations*" and "such facts are quite beyond the *form* or *definition* of 'faulty analogy.'" (31-33)

McPeck's discussion of our treatment of "faulty analogy" illustrates how he is muddled about form and definition. The *fallacy* we label "faulty analogy" does not, in our opinion, have a "form." It does, however, have *defining conditions*. Among those conditions is the requirement that the allegedly fallacious *argument* must be reconstructible (fairly) as having the *form or pattern* of an argument from analogy. The particular pattern of argument from analogy we discuss has been labelled by Govier "*a priori* analogy" (1987: 58f.). An argument construable as having the *form* of an argument from *a priori* analogy is neither cogent nor fallacious by definition. It is an argument with a particular type of premise-conclusion pattern. To be probative, an argument with this pattern must have true or acceptable premises. On the other hand, an argument which satisfies the *definition* of the fallacy of "faulty analogy" will of course be fallacious – according to the definition: that is the objective of the definition.

So there are two tasks required to establish an instance of "faulty analogy." First, one must show that the argument can fairly be interpreted as having the form of an argument from *a priori* analogy. This will be a judgment (sometimes straightforward, sometimes controversial, always in principle contestable) about the semantics and pragmatics of the situation. Second, one must establish that the other conditions of the fallacy are met – specifically, that the argument's premises are all true or acceptable. This will be a judgment (sometimes straightforward, sometimes controversial, always in principle contestable) about the facts of the situations being compared – essentially, about whether the one case is in fact similar to the other in the precise respects required to support the conclusion.

We take the theoretical business of informal logic to include (among many other things) the task of formulating the conditions of informal fallacies. We take one appropriate item for the pedagogical agenda of courses in informal logic which are billed as practical or applied, and not as purely theoretical, to include training students in applying the conditions of the fallacies – in other words, in identifying fallacious arguments. We believe we do this in our classes, hence we do not agree that it cannot be done. Some of our students become highly proficient in recognizing and making the case for the occurrence of fallacious arguments, which led us to believe a measure of skill is involved. Thus we believe we are teaching our students "how to" do something.

McPeck's claim that the substantive considerations appealed to in determining the presence of a fallacy are "quite beyond" the form or definition of the fallacy is misleading and confused. It is confused for it mistakenly (as we have just seen) identifies form and definition. It is misleading because it might not unreasonably be taken to suggest something that is false, namely that there is no connection between either the definition of a fallacy or the form of an argument and the substantive considerations relevant to deciding whether a fallacy occurs. Certainly the truth conditions of the facts of the case which settle whether some of the fallacy conditions are met will be independent of the

form of the argument in question. That is the truth which gives plausibility to McPeck's claim – although no one to our knowledge has ever denied it. However, it is only by including a condition specifying the requisite pattern of argument, among other things, that the definition of the fallacy directs attention to just those facts which are relevant. So the facts are in that sense not at all "quite beyond" the definition of the fallacy or the form of the argument.

McPeck's specific objection to our example as a case of "faulty analogy" has no bearing on the theoretical questions at issue. Still, we want to record that his substantive discussion of the example has persuaded us that the analogy is less clearly faulty than we thought it was. We would note, though, that in our text we gave two other reasons for objecting to the analogy besides the one McPeck responds to – a fact not mentioned in his critique – so readers interested in the specifics will have to check our text for a complete assessment (See Johnson and Blair 1983 2e: 100)

We would only add that there is nothing in principle wrong with using in a textbook as examples arguments the fallaciousness of which is open to dispute. On the contrary, we recommend introducing at some point examples about which there is likely to be factual disagreement, precisely so students can see how the conditions of the fallacy give focus to the question whether the argument is cogent or fallacious, and supply criteria of relevance for the facts in dispute. On pedagogical grounds, however – and here is where McPeck's objection to our using the fire-arms-alcohol analogy in our text applies – it is preferable to save controversial examples for the back of the chapter, and not introduce them at the outset as paradigms.

Following his discussion of "faulty analogy," McPeck mentions "false cause" and "hasty generalization" as "blatant cases . . . of forms of argument whose 'fallaciousness' is largely a function of one's *substantive beliefs* about causes and generalizations." (33)

Here is a nice example of a weasel word working to mislead. Look at the role "largely" plays in the sentence just quoted. Assuredly McPeck may argue that if a factor in deciding the occurrence of a fallacy is a necessary condition, it may be classified as a "large" factor in that determination. However, if there are other necessary conditions, then on the same grounds they must be counted as "large" factors too. The fact that a given argument may be classified as a causal argument of a particular sort (there are many different kinds of causal argument) or as a generalization, is also a necessary condition of the occurrence of one or the other of these fallacies. So, following McPeck's precedent, one could equally (and equally misleadingly) say that "faulty analogy" and "hasty generalization" are blatant cases of "forms" or patterns of argument whose fallaciousness is "largely" a function of their form. Either argument is misleading since it assumes that the form/content dichotomy applies in a telling way against informal fallacy definitions and identifications.

In passing, McPeck asks rhetorically "are people who attribute the wrong cause to something committing a 'fallacy,' as such, or just making a mistake?" (33) First, we wonder, who has asserted the position that McPeck rejects as if he is recording an objection against informal logic or fallacy theory? Certainly we have not. Second, the issue will depend on one's theory of fallacy. For example, on the Johnson and Blair theory fallacies are mistakes in *arguments*, not mistaken attributions, so if someone, without arguing or reasoning at all, simply holds a mistaken belief about a causal connection, then according to our conception they could not be said to commit a fallacy. On the other hand, if a person's *reasoning* about causal matters were mistaken in some respect (e.g., they inferred solely from the spatio-

temporal proximity and temporal succession of a pair of events, X and Y, that X caused Y), then by yet other plausible conceptions of fallacy they could quite properly be held to have committed a fallacy (*post hoc*), even though they offer no argument incorporating that reasoning. Finally, there is a perfectly normal non-theoretical use of "fallacy" according to which it means a "commonly-held mistaken *belief*," and according to that use some attributions of wrong cause could well count as fallacies. In short, McPeck's rhetorical question does not have such an obvious answer as he seems to have thought it has.

McPeck ends his discussion of examples with an account of begging the question, a fallacy he sees as "a slightly more awkward nut to crack." We find this account of begging the question objectionably eccentric, unresponsive to the literature on the fallacy whose existence he explicitly acknowledges, and just wrong.

McPeck makes the novel claim that in a question-begging argument the reason we object when we perceive the conclusion to be "contained in" one of the premises is that we are dubious as to its truth, and we doubt its truth because it does not square with our previously-held beliefs. (33) The literature on begging the question distinguishes between epistemic and dialectical objections to such arguments (e.g., Walton 1980), but on neither ground is suspicion that the proposition in question does not square with our other beliefs seen as the key to the fallacy – and rightly so.

The epistemic objection is that, if we need grounds to be justified in believing a proposition, then that proposition itself cannot supply the needed grounds, lacking as it does the very grounds required. The fact that the proposition does not square with our previously-held beliefs is what makes the conclusion problematic and justifies the demand for an argument in its support, but it isn't what makes the premise suspect.

Moreover, there are ready counter-examples to McPeck's claim, along the lines of the following:

(C) P: (1) From spring until fall in the New England area's climate the total possible volume
of offspring from a pair of houseflies, including the multiplication by offspring, is 191,010,00,000,000,000,000.
C: From spring until fall in the New England area's climate the total possible volume of offspring from a pair of houseflies, including the multiplication by offspring, is 191,010,000,000,000,000,000.

(D) P: (2) Australia is in the Southern Hemisphere.
C: Australia is in the Southern Hemisphere.

We believe most readers have no idea whether (1) is true. Few will have previously-held beliefs about the volume of offspring from a pair of houseflies in one season. On the other hand, we believe virtually all readers would have no doubt whatever about (2). Anyone with a rudimentary knowledge of geography knows it is true. Yet the epistemological question-begging character of both arguments, (C) and (D), is evident to all.

The dialectical objection to question-begging arguments is that, abstract dialectical games aside, no rational opponent in a dialectical exchange can accept a premise from the proponent which is equivalent to or entailed by a proposition which the opponent has challenged (and which has not been established in earlier turns). The point is not that the

opponent does not have the proposition in his/her commitment store; the point is that the proposition is under challenge, and as such is unavailable for use in its own defense. The truth or falsehood of the proposition in question is irrelevant so far as the dialectical objection to begging the question goes.

McPeck accepts uncritically the view attributed to Mill that every deductive argument is question-begging, but that contention is false – and is based on a misunderstanding of begging the question. "*All* deductively valid arguments," says McPeck, "contain their conclusions in their premises." (33) The notion of a conclusion being "contained" in the premises of an argument is too vague to illuminate begging the question. In the sense in which the claim seems true, it is true also for strong inductive arguments – and indeed for any cogent argument. That is, any argument whose premises adequately establish its conclusion will have premises which, taken together, "amount to," or "point to," or "give," or "contain," the conclusion. This property does not make such arguments question-begging. What makes an argument question begging is the fact that *a single premise* is identical or equivalent to, or entailed by, the conclusion. Hence, contrary to Mill and McPeck, not all deductively valid arguments are question begging.

With these remarks we end our response to McPeck's discussion of examples. We have argued with respect to particulars, that (1) McPeck's critique of fallacy criticism conflates the defining conditions of a fallacy with the form or pattern of arguments which fallacious arguments instantiate; (2) McPeck's allegation that proponents of fallacy critique overlook the relevance of facts to argument criticism is false; (3) McPeck misunderstands informal logic in taking it to require a formal deductive logic-like assessment of an argument's form and to preclude judgments about its subject matter; (4) McPeck's argument that the fallacies of false cause and hasty generalization are largely a matter of a person's substantive beliefs fails to establish that argument patterns are not also pertinent; and (5) McPeck's analysis of begging the question makes no contact with the issues as argued in the literature, and is mistaken. McPeck offered his discussion of examples in order to demonstrate the plausibility of the criticisms of informal logic contained in the two lines of argument presented in the first part of his paper. If our objections are sound, his discussion of examples provides cool comfort to the general arguments, but to be sure those arguments might still be independently cogent. As we shall see next, they are not.

Before considering each general line of argument in detail, though, we must state a reservation about his use of Wittgenstein and Toulmin as authorities in these arguments. Our objection is not to the views of these two philosophers, McPeck's admiration for whom we profoundly share. But in the circumstances such appeals are inappropriate. Challenges to Wittgenstein's views on the philosophy of language and to Toulmin's conception of an argument field are too numerous and well known to list here, though we will note that one of us has taken detailed and explicit objection to Toulmin's position on field dependence (see above, p. 139f.). Since these philosophers' doctrines upon which McPeck relies are contested – and by one of the authors McPeck is criticizing – they may not be used as authorities to lend credibility to McPeck's arguments.

3. McPeck's First General Line of Argument

The first general line of argument is that informal logic comes up against certain difficulties which must be resolved even before argument analysis can begin. These difficulties have to do with the meaning and the interpretation of the assertions which make up the argument. McPeck stops short of claiming that these difficulties are insuperable, but his prose certainly hints in that direction. What, then, are these difficulties?

McPeck leans on the Wittgensteinian claim that meaning is use (a point to which we return), which he takes to imply that informal logic is confronted with the task of teaching a skill of hitting a linguistic moving target. But what is this moving target? Apparently McPeck thinks it must be the meanings of the assertions included in the argument. They are "moving" because "meanings can and do vary from case to case or context to context, and will not stand still, as it were, in the ways required by general argument analysis." (28)

We readily agree that there is often a difficulty in appreciating the context-imbedded meanings of the assertions constituting arguments. Assuredly, to assess an argument requires grasping its meaning, or providing an interpretation of its text, which in turn requires an appreciation of the rich interfolding and imbedding of contexts. These tasks can be arduous and are fraught with opportunities for misunderstanding. Yet it is not impossible to hit a moving target. Although it is sometimes hard to grasp the meaning of a word, a sentence, a longer fragment of text, or an entire text, it can be done. McPeck himself tries to do it in his article, so presumably he would agree. We believe, moreover, that one can be taught how to do it with increasing degrees of skills – by practice, having mistakes corrected, following the models of experts: in short, by coaching. We try to do it in our informal logic classes, and believe we succeed, in varying degrees, without students.

What we don't understand is why McPeck believes the difficulties of textual interpretation are lethal for informal logic as argument analysis. If they are bad news for informal logicians, then they are also bad news for others. For the same problems confront the formal logician seeking to formalize any argument or inference, not to mention the applied epistemologist seeking to decide whether a given claim or argument measures up to the standards of the discipline. While we take McPeck's point about language and moving targets, we cannot see that it presses any harder against the informal logic project than against any other analytic enterprise – including the one he alleges to be superior – nor has McPeck given any reason why we should.

Moreover, we think McPeck has overstated his case – and we cite his own practice to prove it. Consider his analysis of our faulty analogy example in Johnson and Blair (1983 2e). McPeck has no difficulty in getting that moving target to stay still long enough to analyze it. Without ceremony he (a) disputes our analysis of the prohibition-gun control argument from analogy, and (b) makes several observations about the issues. Both moves require that he have grasped the meanings of the statements which compose the original argument, as well as of those which enter into our argument supporting our analysis. Perhaps heroic hermeneutic skills on McPeck's part were required for such interpretive marksmanship, but the fact remains that he did it. Our students have shown themselves capable of similar interpretive feats, and of improving that capability over a semester. We conclude that, whatever difficulties there may be in ascertaining the meanings of

assertions, these do not provide a basis for the conclusion that informal logic skills are not teachable.

We want to say just a bit about McPeck's position on language and meaning. As we have seen, his first general line of argument leans heavily on his reading of Wittgenstein's views of the matter. The trouble is that when Wittgenstein said, "ask for use, not meaning," he was confronting views about meaning found in philosophers as disparate as Augustine and Frege, not to mention his own earlier views. In the context of the *Philosophical Investigations,* he was dealing centrally with meaning in connection with words – words like "mind," of the sort that typically give philosophers difficulty. He was opposed to the way certain philosophers (Russel, Frege, himself in the *Tractatus*) had sublimed the logic of our language; his opposition was to the formalization and mathematization of the "logic" of natural language:

> 81 . . . (L)ogic does not treat of language – or of thought – in the sense in which a natural science treats of a natural phenomenon, and the most that can be said is that we *construct* ideal languages. *But here the word "ideal" is liable to mislead, for it sounds as if these languages were better, more perfect, than our everyday language; and as if it took the logician to show people at last what a correct sentence looked like.* (Wittgenstein 1953; emphasis is ours)

So we believe that Wittgenstein would not have been opposed to informal logic, understood as the attempt to develop and refine criteria and standards and procedures which do not rely on the concept of logical form, directed at improving reasoning in ordinary language.

We are convinced that McPeck does not understand this point about the role of logical form. He says, for instance (referring to the hazards of interpretation) that, "while such considerations might not undermine the logical form(s) of arguments as ideal types, they do cast doubt on how readily these forms can be applied." (28) But this remark is relevant only on the assumption that informal logic is premised on the notion of applying logical forms as ideal types – a point we deny, and for which we defy McPeck to find a supporting text in the literature. Moreover, what he should be concluding, according to his own announced agenda, is that such considerations show that informal logic cannot be taught. Yet that is not how his conclusion reads. At the most what he establishes (and the quote from Perelman and Olbrechts-Tyteca 1969: 187 is to the same effect) is the need to take context into account when attempting to understand meaning. Not only do most informal logicians agree; they trumpet the point, and attempt to give it life in their treatments of argument analysis, in textbooks and in classrooms.

We draw the following conclusions from our discussion of McPeck's first general line of argument. (1) There are two separate objections housed under the label, "first line": one having to do with McPeck's views about meaning, and the other having to do with logical forms as ideal types. Neither is adequately developed, and neither offers support for his claim that informal logic is not teachable. (2) McPeck's views about meaning strike us as out of focus. He cites Wittgenstein, Davidson and Quine, but who he should be citing, we suspect, is Derrida. The fact that interpretation is a difficult hermeneutical enterprise that must rely on context is, for the authors McPeck cites, no bar to analysis; whereas for Derrida, it might be. It is not only no news to informal logic, it's a point of emphasis in the

field. Moreover, McPeck's own practice belies the conclusion he would draw from it. In sum, we reject both McPeck's first line of argument, and the conclusion it is supposed to support.

4. McPeck's Second General Line of Argument

We now turn to McPeck's second general line of argument. As he has organized and expressed it, we take the argument to run as follows. (1) Some arguments are analytic and some arguments are substantial; (possibly also intended: [1a] no argument is both, with respect to any given inference; [1b] no argument is neither, with respect to any given inference). (2) An analytic argument is one in which the criteria for evaluating the adequacy of the inference are analytic and field-invariant; a substantial argument is one in which the criteria for evaluating the adequacy of the inference are substantive – i.e., a function of standards peculiar to each field. (2) These points apply equally to substantive arguments which do not belong to established "fields" such as the academic or professional disciplines. Hence (3a): There are no field-invariant, abstract-logical – yet also substantive – criteria for the evaluation of the inferences of substantial arguments. Hence also (3b): It is a mistake to evaluate arguments of either type using the criteria for evaluation proper to the other type. Moreover (4): The determination of the correct substantive criteria is a function of our beliefs about what the facts are, and so is a branch of epistemology. (5) Informal logic, *qua* "informal" is not interested in deductive or analytic considerations (hence its name). (6) At the same time, informal logic, *qua* "logic" must rely on non-substantive criteria of evaluation (matters of logic or of "quasi-formal schemata"). But, given (3), (7): Informal logic's logical pretensions are misplaced. And given (4) and (5), (8): Whatever is right about informal logic collapses into epistemology. (29f.)

Putting the argument into our own terms we take its gist to be the following:

> There are arguments of two kinds: those with analytic inferences and those with substantial inferences. The adequacy criteria for analytic inferences, and so for analytic arguments, are purely formal and abstract, and their determination belongs to the field of logic. The adequacy criteria for substantial inferences, and so for substantial arguments, are a function of the factual beliefs about the fields (or the topics) in which the arguments using the inferences are employed, and their determination belongs to the field of epistemology – more precisely, to the fields of the epistemology of the disciplines. It follows that only the criteria for analytic inferences (and arguments) are general; there are no field- (or topic-) invariant criteria of adequacy for substantial inferences (and arguments).
>
> Informal logic is the name of the project of specifying inference criteria that are general or field- (or topic-) invariant and at the same time non-formal. From the above considerations it follows that informal logic is a fundamentally misconceived enterprise: there can be no such thing as a general, field- (topic-) invariant non-formal argument evaluation. *A fortiori* it follows that informal logic cannot teach a general skill in argument evaluation.

We have two clusters of objections to this argument. We begin with the key initial premises that inferences, and so arguments, are either analytic or substantial, and that

evaluation of the latter are subject only to field-relative substantive considerations. We think these premises employ a false dichotomy that has two misleading implications. First, it overlooks the fact that non-deductive arguments can be intended to instantiate argument patterns, or "schemes" are they have been called (Perelman and Olbrechts-Tyteca 1969; Eemeren and Kruiger 1987), and so can be evaluated in terms of their success in such instantiations. Such criteria of evaluation are neither exclusively "analytic" nor exclusively "substantial" in the McPeck-Toulmin senses. Argument schemes make reference to such substantive relations as analogy and causality, which are not definable in formal terms. At the same time, the requirement that such arguments exemplify these forms is essential for assessing their cogency.

Second, the connotations of "field-dependent" or "topic-dependent" substantive considerations invites one to infer that insofar as non-analytic inference evaluation is concerned, highly specialized knowledge is required to assess any argument. (It would be natural to conclude, then, that an informal logic course, which is not a course in the specialized knowledge of different fields, cannot teach the field-dependent inference criteria needed to assess non-analytic arguments.) On this second point we have two comments.

First, although some of the persuasiveness of McPeck's argument, we think, relies on this invited inference, he himself explicitly eschews a narrow reference to "fields." He contends that substantive considerations not restricted to "academic or professional disciplines" are needed to assess inferences even in "so-called 'natural argument' or 'everyday argument.'" (30) Yet that extension undermines his own thesis. For to the extent that deployment of the general knowledge-base available to the average undergraduate student is all that is needed to assess many of the arguments which students (and citizens in general) typically encounter in daily life, so far can informal logic instruct students in ways of accessing and applying that knowledge for the purpose of evaluating such arguments. It is our hypothesis that a significant number of "every-day" arguments do have this feature, and that precisely one of the things a good informal logic course will do is provide students with strategies for bringing their knowledge to bear on the assessment of such arguments. In other words, in (correctly) allowing non-specialized substantive considerations to be relevant to argument analysis, McPeck allows a role for informal logic in teaching skills in argument analysis.

Second, the claim that field-dependent substantive considerations are required to evaluate many sorts of arguments invites the inference that these can be taught only in courses in special fields or disciplines, and are not accessible to students in informal logic courses. We don't think that conclusion follows. Informal logic students can learn useful rudiments of, for example, the following fields. (a) Survey research – especially as it used for political and consumer opinion gathering. (b) Experimental design in areas such as drug and product safety testing (including such methods as double-blind testing). (c) The general features of the explanation of casual generalizations common to many fields, and of the causal explanation of particular events of public interest. (d) The criteria of expertise in fields in which *ad verecundiam* appeals are more common in daily life – and indeed the general issues related to the establishment of epistemic authority and challenges to it. (e) General norms applying to arguments supporting action and policy recommendations. (Cederblom and Paulsen 1991 3e is a good example of a text doing all these things well; there are others.) While inter-field differences pertinent to inference appraisal should not

be minimized, neither should similarly relevant intra-field commonalities. And while highly specialized esoteric knowledge will be essential for assessing inferences in advanced theoretical reasoning in a field, knowledge available (or teachable) to students with a good general education can suffice for assessing inferences in many applications (or in areas belonging to the common knowledge and conventional wisdom of fields.

In sum, McPeck uses, or is himself misled by, the analytic *vs.* substantive dichotomy, to overlook the possibility of teaching the recognition and appraisal of argument schemes, to undervalue the extent to which informal logic courses can help students marshal their general knowledge to help them critique everyday arguments, and to ignore the fact that a significant amount of intra-field common ground as well as field-specific information, useful for argument appraisal in practical affairs, can be (and typically is) taught in an informal logic practice.

If McPeck's crucial initial premises fail to sustain the conclusion he draws from them, his later premises attempting to skewer informal logic on the analytic/substantive (false) dichotomy lend no weight to his case either. The latter argument seems to us *a prioristic* and semantic. McPeck thinks that *qua* "logic," informal logic must teach only analytic properties of arguments, and *qua* "informal" it must teach the substantive epistemology of the disciplines. The union of the two is a contradiction, the enterprise is incoherent, *ergo* informal logic courses cannot teach any general, substance-deploying skills.

First, while we think that the insistence on restricting the denotation of "logic" to formal deductive logic is unhistorical semantic imperialism, it does not matter for the theoretical or applied success of the enterprise we call "informal logic" whether it is classified as a type of logic, applied epistemology (Battersby 1989), argumentation study, or anything else.

Second, McPeck's argument reminds us of the joke from *Punch* that Toulmin (1958) quotes at the head of his first chapter:

> *Steward of Cross-Channel Packet: "You can't be sick here, Sir."*
> *Afflicted Passenger: "Can't I?" (Is)*

McPeck argues that informal logic cannot teach any skills because there are no non-formal general argument assessment skills, and this is so because there are no non-analytic non-substantial inference criteria in the application of which to be skilled. We contend that informal logic does teach argument assessment skills, so there must be something that can be taught, regardless of McPeck's *a priori* argument to the contrary. What informal logic courses can and do teach, among other things, are the following: (a) skill in argument recognition, (b) skill in argument pattern or scheme identification, including the recognition of argument patterns used in special fields (e.g. statistical arguments, various kinds of causal arguments, arguments replying on authority, arguments supporting policy proposals), (c) skill in context-sensitivity in the identification of arguments and their schemes, (d) skill in identifying problematic premises and inferences in such arguments, (e) skill in drawing on general knowledge in assessing arguments, (f) skill in recognizing the sorts of additional information needed to settle questions about the premises and inferences of arguments. We don't suggest that most students acquire these skills *de novo*; but we do know that many students at least improve these skills over the period of an

informal logic course. We know this because we have seen it happen in class after class over many years of teaching informal logic, and have heard it reported by reliable colleagues time and again. (By the way, we aren't claiming that these skills cannot be improved in any other way; nor are we suggesting that, as with any other learning, there is no risk of bad habits being acquired at the same time.) These are exactly the sorts of skills that informal logic courses have been designed to enhance, and in fact the informal logic enterprise is plausibly defined in terms of the theory needed the better to understand how to enhance such skills, and of the teaching methodology best suited to translate that theoretical understanding into their improvement in students.

McPeck's belief that informal logic cannot teach skills in argument analysis, we can now see, is due on the one hand, to his mistaken conception of informal logic, and on the other hand, to his mistaken embrace of the analytic-substantive dichotomy.

5. Conclusion

We have tried to show that McPeck's arguments do not support his thesis that skills in argument analysis cannot be taught. We have argued that such skills can be taught. We have argued that McPeck fundamentally misunderstands the informal logic enterprise – apparently because he is hung up on the semantics of "informal logic" and fixated on the false dichotomy of analytic *vs.* substantial argument criticism. We have shown that McPeck's attacks on fallacy theory involve serious confusions and straw man criticisms. Certainly not everything McPeck claims is false, but what he is right about does not in any way show that the analysis of arguments cannot be taught as a skill.

Notes

1. For example, discussing the "good news" about informal logic courses, McPeck (1991) confesses he was almost ready to recommend that his daughter take a critical thinking course – i.e., an informal logic course.

   "Informal logic" denotes a loosely defined *field of inquiry*, centered on developing adequate theory for the interpretation and assessment of arguments. In our view an undergraduate informal logic course should teach students the current theory and help them improve their skills in its application. "Critical thinking" denotes a *moral/intellectual virtue* – the intellectual activity of thinking critically and the moral disposition to engage in it. Critical thinking courses should teach students the theory and skills, and inculcate the attitude, required to exercise this virtue. One candidate for inclusion in the critical thinking syllabus – among many – is the theory and skills set of informal logic

2. See the writings of Eemeren and Grootendorst (1984, 1987) for a theory of fallacy quite at odds with that of Woods and Walton (1982, 1989). Johnson and Blair's

(1983 2e) theory of fallacy is different from both. See also Fearnside and Holther (1959), Kahane (1980), Schmidt (1986) – for further differences and variations.

3. McPeck is about to criticize the alleged definition. But does the plurality of informal logic textbooks ("the most common approach") define fallacies in this way? Does anyone? McPeck owes his readers evidence that he is not attacking a straw man. Moreover, we are not able to recall any text that gives this definition.

4. For convenience we will speak of fallacies in connection with arguments. Others might want to extend the concept to inferences as well. We believe our remarks would apply, with appropriate modifications, to fallacious inferences as well as to fallacious arguments.

5. We have difficulty finding anywhere that we have explicitly emphasized this point – perhaps because we take it to be so obvious and uncontroversial. Our belief that reference must be made to the relevant facts for purposes of argument evaluation is, however, to be found implicit throughout our textbook (Johnson and Blair, 1983 2e). See, for a typical example, p. 41:

   > Where does the $12 per hour figure come from? We need to be sure that his facts are plausible, since his argument that doctors are not overpaid depends heavily on them.

   See also our discussion of the jogging example on p. 42f. and our point about checking variable premises on p. 49; in fact, see *passim*.

6. The quotation is from Copi (1954: 1), but he is not alone. See also, e.g.: Carney and Scheer (1980 3e:3); Georgacaracos and Smith (1979: 2); Yanal (1988: 3). We are not at all alleging that this erroneous conception is universal. Many formal logic texts take good reasoning or good inference or valid implication as the subject matter of formal deductive logic, and in doing so are not subject to our criticism. See for example, Myro et al. (1987: 5); Lambert and Ulrich (1980: 4); Jeffrey (1981: 1); Angell (1964: 1).

IV. Informal Logic and Reasoning

Chapter Twelve

The Problem of Defining Critical Thinking

1. Introduction

In this chapter I shall be concerned primarily with the task of defining critical thinking. In the next section, I state the various definitions. Then in Part 3 I review them and point out some problems, using this critique as the basis for introducing my own account of critical thinking in Part 4. Part 5 is my conclusion.

2. The Problem Stated

It is my impression that, after lying untouched for many years, the issue of defining critical thinking has suddenly become such a hot topic that almost no one can keep clear of it. In recent years, Ennis (1985, 1987, 1989), Lipman (1988) and Paul (1989) have all proposed new and apparently distinct accounts of critical thinking. This flurry of activity is a good sign, for it indicates heightened awareness of the problem. In my view, the time has come to purchase some much-needed dialectical clarity regarding the problem of defining critical thinking, and this chapter is meant as a contribution to that end.

Let's start by acknowledging the obvious: there are myriad definitions of critical thinking. Each textbook author has a definition, and one is implicit in every test of critical thinking. Educational directives such as Executive Order No. 338 (which requires a course in critical thinking as a condition of graduation from the California State University system) also contain at least the elements of a definition. However, I shall not consider those. For strategic reasons, I have limited my review to those accounts of critical thinking which are theoretically funded. These definitions are not free-standing definitions, but rather are imbedded in a fuller, if not entirely developed, theory of critical thinking. There are five such definitions:

1. Ennis's definition of critical thinking as "reasonable, reflective thinking that is focused on deciding what to believe or do" (1987: 1);

2. Richard Paul's notion of strong sense critical thinking as essentially dialogical and distinguished from weak sense (1982); more recently, Paul has offered a definition of critical thinking in terms of a list of perfections of thought and traits of thought, "critical thinking is disciplined, self-directed thinking which exemplifies the perfections of thinking appropriate to a particular mode or domain of thinking" (1989: 214);

3. McPeck's definition of critical thinking as "the skill and propensity to engage in an activity with reflective skepticism" (1981: 8);

4. Siegel's definition of the critical thinker as the individual who is appropriately moved by reasons (1988);

5. Lipman's account of critical thinking as "skillful, responsible thinking that facilitates good judgment because it (1) relies upon criteria, (2) is self-correcting and (3) is sensitive to context" (1988: 39).

For ease of reference I shall refer to this collectivity as the Group of Five. Not only is each a distinguished voice within the critical thinking movement, but each may be said to possess a theory of critical thinking of which the definition is an outgrowth. By a "theory of critical thinking," I mean not only a definition but also the concepts, principles, arguments and assumptions which support that definition, as well as the interests which fuel the theory and the broader agenda. Thus, differences in definitions may be viewed as indications of deeper differences at the level of the theory of critical thinking.

To indicate where I am heading, let me say that I believe two factors have impeded progress. First, two important facets of critical thinking have either been underemphasized, left implicit, or omitted in all extant accounts. Second, insufficient attention has been given to what I refer to as *the network problem*, discussed shortly.

The next step is to review the definitions offered by The Group of Five, because perhaps the differences between them are more apparent and more verbal than real. Only if it is determined that there are significant, precisely defined differences would we be in a position to say how these differences might be resolved.

3. Defining Critical Thinking: A review of the Group of Five

In (1988), Siegel reviews the accounts given by Ennis, McPeck and Paul. I agree with most of his comments and rather than repeat them here, I simply offer the reader to do that work. Thus, my own review will spend proportionately more time focusing on Seigel and Lipman.

1. Ennis's Definition

Ennis has done extensive work itemizing the skills and dispositions involved in critical thinking. Perhaps that list can be improved on but there is no denying its importance, not to mention his prodigious efforts to develop better tests of critical thinking. Further, though it is not part of his definition and supporting theory, the distinction Ennis (1989) has drawn between three types of subject-specificity is an important contribution to clarification of the issues.

However, there are problems with his position. First, Ennis's definition virtually equates critical thinking with rational thinking, and indeed makes a very tight connection

between critical thinking, creative thinking and problem solving. He writes: "Note that this definition does not exclude creative thinking" (1987: 10) and that critical thinking is related to problem solving (1987: 23). Thus does his definition bring to the fore what I shall call *the network problem*. Let me explain.

"Critical thinking" belongs to a network of terms including problem solving, decision making, metacognition, rationality, rational thinking, reasoning, knowledge, intelligence. Sorting out the lines of relationship among the members of this network is, in my view, one of the principal tasks which must be dispatched before we can expect an adequate account of critical thinking.

Second, in extending critical thinking to the sphere of action, Ennis takes his stand on what I call *the scope problem*: What is the scope of critical thinking? Does it extend to the realm of action no less than belief? Reflective thinking about what one is to do sounds very like a description of problem solving, decision making, or of moral thinking. Does critical thinking contain moral thinking and morality as a proper subset? This question will come to the fore once again when we consider Paul's views.

Third, we need to ask where Ennis's list of proficiencies and tendencies come from. Does his list cover all the needed proficiencies and skills? How does one get from his definition of critical thinking to this list? Unless we are prepared to maintain the view that a critical thinker must have proficiency in all cognitive operations, which seems much too stringent, then we need to know how we index some and not others. These are but a few problems raised by Ennis's definition of critical thinking.

2. Paul's Definition

The great strength of Paul's account (1989) is that it forces us to think about the extent to which critical thinking depends on the capacity of the individual to become aware of egocentric and ethnocentric thinking, the tendency to self-deception, and hence the moral character required for critical thinking. Paul's theory has a strongly Platonic character: critical thinking is dialogical and heavily dependent on moral character. In a different way, the scope problem arises here as well: What is the relationship between critical thinking and character? In order to think critically, must one have a certain moral character or set of traits? If so, which ones? If so, where are the borderlines between critical thinking and morality, and between critical thinking and moral theory?

In building into his definition the idea of being self-directed, Paul is liable to encounter the following sort of objection: Your account places too much emphasis on the capacities of the *individual* thinker and does not give sufficient attention to the intersubjective character of critical thought. This tendency is not found in Paul alone. Many theorists call for self-criticism as part of the profile of the critical thinker, without making it sufficiently clear just what this means and to what degree it is possible for an individual thinker to satisfy this demand. This criticism will reemerge when we consider Lipman's account.

3. McPeck's Definition

McPeck's contribution is, first of all, to remind us that we must not, in our enthusiasm for critical thinking, overlook the importance of the disciplinary knowledge and information which can only be gotten through immersion in the disciplines. Further, McPeck's definition might be seen as proceeding from the perspective of someone interested in the shape of the overall curriculum rather than (as with Paul) the teaching of particular courses. Put another way, though there are admittedly differences between Paul and McPeck, it is not clear that their views are irreconcilable. McPeck writes from the perspective of the philosophy of education and has his own agenda for curricular reform – the broader view. Paul writes as a philosopher concerned with how to teach critical thinking to students in a classroom. Clearly, they disagree about some basic issues: for example, whether there should be a free-standing critical thinking course. However, presumably Paul would agree with McPeck's summons to teachers within the various disciplines to do a better job of instilling in students a sense of the epistemology of those disciplines. Presumably, McPeck would agree with Paul's view about the importance of devising strategies to ward off sophistry.

What are the problems with McPeck's account? First, like Ennis, McPeck includes actions as well as beliefs in the scope of critical thinking. Let's raise the following line of objection. Suppose that Robert Parker is very knowledgeable about wine and brings that knowledge and the appropriate standards to bear when tasting a particular wine. I agree that this activity makes him a connoisseur but why call him a critical thinker? A thinker (critical or not) is, in my view, someone essentially engaged in thinking. A wine-taster, no doubt, must use his wits and judgment in addition to his taste buds, but she is not for all that a thinker, hence not a critical thinker. The term "connoisseur" says it all. Extending the scope of the term "critical thinking" to include such activity seems gratuitous and confusing.

A second problem with McPeck's definition concerns reflective skepticism. Why not reflective enthusiasm? It seems to me that this definition is unnecessarily negative and contributes to the connotation currently surrounding the term "critical" – a person who is always picking away at the faults of others, never praising, etc. This connotation, I submit, can only interfere with the advancement of critical thinking as an educational and pedagogical ideal.

Third, for McPeck, the connection between critical thinking and problem solving appears to be very tight (1981: 16f.): "Similarly, logic texts often 'play at critical thinking' by avoiding the main work, which is solving problems in the context of discovery." For McPeck, rational thinking is the broader category:

> While critical thinking is perfectly compatible with rationality and with reasoning generally, we should not regard the terms as equivalent . . . All of this does not make critical thinking distinct from, much less incompatible with, rationality; rather, rationality includes critical thinking as a particular aspect (or subset) of itself (1981: 12)

This passage suggests where McPeck stands on the network problem, and as we shall see, his position contrasts significantly with Siegel's theory according to which critical thinking is coextensive with rationality. Let us look at Siegel's view next.

4. Siegel's Definition

Siegel's definition emerges out of a lengthy, informal critical commentary on the definitions given by Ennis, McPeck and Paul which are too lengthy to review in detail here. The core of the matter is reached where Siegel comments on McPeck: "This is the defining characteristic of critical thinking: the focus on reasons and the power of reasons to warrant or justify beliefs, claims and actions" (1988: 23). Thus, Siegel, too, includes actions within the scope of critical thinking. He continues: "A critical thinker is one who is appropriately moved by reasons: she has a propensity and disposition to believe and act in accordance with reasons; she has the ability properly to assess the force of reasons in the many contexts in which reasons play a role" (1988: 23).

No doubt, Siegel's succinct definition captures much of the essential thrust of critical thinking (though not the full force of the term "critical"). But I would argue that there are two weaknesses. First, there is no mention of articulation – the critical thinker's ability properly to assess is characteristically revealed in an articulation. A critic is someone who criticizes, that is, produces critical commentary. We know that someone is thinking critically just to the degree that the person's articulation of judgment displays appreciation of and respect for reasons. And I would argue that we, the community, are the ones who decide whether or not the person is a critical thinker. No individual can certify himself or herself as a critical thinker. In this sense, critical thinking is more like authority than it is like knowledge. I return to this theme later.

Second, on Siegel's account, there is no distinction between critical thinking and rationality. Critical thinking is coextensive with rationality; critical thinking is "the educational cognate of rationality." It is not clear to me just what this means, nor what it entails. Siegel denies, and I believe him, that it entails that critical thinking is restricted to educational contexts. Furthermore, for Siegel there is no essential difference between critical thinking and problem solving. Commenting on McPeck, Siegel notes:

> On McPeck's construal of critical thinking as a subset of rational thinking, a person who properly utilized available evidence in order to solve some problem or come to some belief, e.g. one who planned a trip route by carefully examining maps, noting terrain, balancing time demands against the goals of the trip – in short one who planned the trip rationally – would not count as having engaged in critical thinking while planning it. This not only seems absurd on its face, it is incompatible with McPeck's epistemological approach. (1988: 29f.)

My intuitions are closer to McPeck's than Siegel's. I see nothing absurd in the claim that the individual in question did not engage in critical thinking. There is no absurdity in holding that that individual did engage in problem solving, and that is a kind of rational thinking. However, I would argue that there is more to rational thinking than critical thinking: for example, devising a hypothesis to explain a phenomenon or fleshing out the plot line of a novel would both be instances of rational thinking: for example, devising a hypothesis to explain a phenomenon or fleshing out the plot line of a novel would both be instances of rational thinking but would not necessarily be critical thinking. I admit that I am operating here on my intuitive sense of what comprises critical thinking. My intuitions conflict with Siegel's. What must happen is that we see where each of these positions leads, assess their

pluses and minuses – in other words, subject them to critical scrutiny. In sum, respective theories of critical thinking must themselves be evaluated. That leads to that inquiry which I call "the theory of reasoning," but I cannot here take this line of thinking further. See Chapter Fourteen for more on this point.

Siegel's theory forges a tight connection between critical thinking, rationality and problem solving. The tightness of this connection is a function of his conception of rationality, which some would criticize as based on a sexist account of rationality and knowledge (Martin 1989). In his defense, it must be noted that Siegel does have a theory of rationality, and so of all the accounts given by the Group of Five, Siegel's is the most theoretically developed. But his position on the network problem and the scope problem remain problematic.

5. Lipman's Definition

Because of his emphasis on criteria, Lipman's account comes perhaps the closest to bringing out the sense in which critical thinking is "critical." However, even if we grant that Lipman has specified three properties of critical thinking, it is not clear that they define it. A thinker might be engaged in self-corrective thinking, be sensitive to context and guided by criteria and still fail to be critical, as Paul (1989) also points out. Suppose a scientist is engaged in the process of testing a hypothesis. We may suppose that the scientist is sensitive to context and guided by criteria. But does this mean that the scientist is a critical thinker? Suppose the scientist is absolutely intolerant of any objections of criticisms? In my view, that would disqualify him or her as a critical thinker, at least in this instance. But the scientist seems to satisfy Lipman's criteria.

I now want to argue that the idea of critical thinking as self-corrective (an idea that Lipman seems to share with Richard Paul) is problematic in two ways. First, it runs the risk of placing too much emphasis on the individual and not enough on the community within which that individual practices reflection.

A second problem arises because it is evident that the model for critical thinking in Lipman's view is scientific and logical thinking:

> What has come to be known as scientific method is a distillation of exploratory and self-corrective procedures employed by ordinary persons in everyday life. These same self-corrective procedures are responsible for the emergence of logic. In turn science and logic provide us with models we can attempt to emulate and internalize in our thinking. (1988: 5)

What does it mean to say that science is self-corrective inquiry? It does not mean that science is free from error, but rather that the scientific method has built into it features that will allow for detecting and correcting of error. Lipman says very little about these self-corrective procedures, but we may read between the lines and suggest that they consist in the realization that results must be submitted to the scientific community for validation and corroboration that, to quote William James, "We have to live today by what truth we can get today, and be ready tomorrow to call it falsehood,"[1]

But herein lies a difficulty with Lipman's suggestion. It can be argued that the property of being self-corrective is a property possessed by the scientific community in its

totality rather than by individual scientists (Johnson 1972). Although people can to some degree monitor their own processes and occasionally discover and correct their own errors, it makes little sense to think of the individual thinker as self-correcting. Hence, if critical thinking is supposed to be a characteristic of the individual and if self-correction is a community property, Lipman's criterion runs into trouble.

Lipman claims that only a small portion of our everyday thought is subjected to scrupulous self-criticism. (Lipman seems to vacillate between critical thinking as self-corrective and critical thinking as self-critical.) The requirement that the critical thinker must be self-critical does not shed much light on the nature of critical thinking, as it comes close to being circular.

To be sure, much depends on what is built into the notion of self-criticism. But suppose self-criticism refers to that process whereby one looks critically at one's own products: beliefs, theories, and so forth. That is not, however, enough, since it might be that an individual is quite good at this and yet would be highly resistant to criticism from others. If the capacity to take criticism from others is an essential feature of the critical thinker, then being self-critical may not be enough. For it is equally important to be able to take criticism of his or her ideas from others, realizing that good criticism is invaluable to the growth and development of any intellectual product.

A further problem occurs with Lipman's second feature – critical thinking as thinking with criteria. Lipman provides a detailed account of criteria which we cannot outline in detail, in which he distinguishes between criteria and standards, and then adds levels of criteria: meta-criteria and mega-criteria. Lipman writes:

> It is generally agreed that critical thinking entails the development and orchestration of cognitive skills and dispositions. Now a skill is a performance that is measured against a standard or criterion. Thus reasoners are adjudged skillful or not by assessing their performances by means of principles of logical validity. To measure, we need standards of measurement; to classify, we need classificatory criteria; to be judicious, we need standards of judgment. (Lipman 1988: 5)

The point Lipman makes is crucial: if critical thinking does involve – as I would argue it does – evaluation of an intellectual product, then reference to criteria will necessarily be involved. I do not share Lipman's view that the skills of a critical thinker necessarily must be gauged by reference to the principles of logical validity, as this criterion is much too restrictive.

There is one final problem which surfaces most clearly in the chart that Lipman provides (1988); the inference is that for Lipman, critical thinking is, necessarily, good thinking. For Siegel and Paul, it seems evident that critical thinking is by definition a good thing. However, for McPeck, critical thinking is a task and achievement concept (1981: 9) and so it appears that there could be such a thing as bad critical thinking. Is critical thinking by definition something good? Can there be bad critical thinking? Is critical thinking like virtue (necessarily good) or rather like luck (possibly good, possibly bad)?

6. Summary

Our review of the definitions of the Group of Five has revealed some important differences, particularly as this involves not merely the definition of critical thinking but broader issues within the theory of critical thinking. Let me restate them here:

1. What is the scope of critical thinking? Does it extend to the realm of action no less than belief? (The Scope Problem)

2. What is the relationship between critical thinking and character? In order to think critically must one have a certain moral character or set of traits? If so, which ones? If so, where is the borderline between critical thinking and morality and between critical thinking and moral theory?

3. What is the best account of the relationship between critical thinking, problem solving, rationality, rational thinking and metacognition? (The Network Problem)

4. Is critical thinking by definition something good? Or can there be bad critical thinking? Is critical thinking like virtue (necessarily good) or rather like luck (possibly good, possibly bad)?

An adequate theory of critical thinking will have to contain answers to these, and other, questions.

4. Defining Critical Thinking: A Second Look

Assume that we have the elements necessary to generate a satisfactory definition of critical thinking. These remarks are intended as a further contribution to that development by reflecting further on the definitions and implicit theories presented by the Group of Five in light of the previous section. In the first section, I deal with omissions. In the second section, similarities and differences.

1. Omissions

In my critique of the accounts given by the Group of Five, I have signaled points at which I have difficulties. I want to collect those individual points together now under two main criticisms. First, none of these definitions adequately captures the force of the term "critical"; none makes it sufficiently clear why critical thinking is critical and not just plain thinking or some other form of thinking like rational thinking or higher-order thinking. (Indeed, as we have seen, both Ennis and Siegel seem prepared to equate critical and rational thinking.) Second, none of them give adequate emphasis to what I take to be a defining characteristic of a critical person – the ability to take criticism.

As to the first point, the term "critical" has historically a number of connotations. Suggested synonyms are indicative of the first and most popular understanding of the word – fault finding, captious, caviling, carping and censorious. The *Oxford English Dictionary*

traces the changing nuances from the first use – notably by Shakespeare's Othello: "I am nothing if not critical," meaning "given to judging in an especially adverse or unfavourable way"; to Sir Thomas Browne's use in the 17th century, meaning "involving or exercising careful judgment or observation on the basis of which right decisions might be made"; to the use by Thomas Jefferson as "a turning point of decisive importance in relation to an issue." I assume that the Group of Five would identify Browne's use as the appropriate one.[2]

My own account of critical thinking works under four constraints. First, I want to capture most, though not all, of what is encompassed in the current use of the term. Second, for reasons I will make clear, I favour an extension of the term in line with what I take to be present practice in evaluating arguments, because that too must be reflected in the definition. Third, I want my account to honour the etymology of "critical." Fourth, I want my account to allow for differentiation between the critical thinker and the creative thinker, on the one hand; and the critical thinker and the uncritical (or dogmatic) thinker, on the other.

Begin with etymology: the word *krinein* – from which we get out word "critic" and "critical" – means to estimate the value of something. A critic is a person who judges, appreciates, estimates the value of something. Similarly, I propose that a critical thinker is a critic of thought in much the way that a film critic is a critic of film.

To develop this point, consider the role of a good critic. He or she must have certain skills (know what to look for in a film), must have the appropriate background (knowledge of the history of the genre and the appropriate standards and criteria to invoke), and must have traits like fair-mindedness, honesty, and so forth. He or she applies certain standards or criteria (herein Lipman) and insights to the particular product – a film – in order to estimate its worth, taking into account both its strengths and its weaknesses and coming thereby to an overall appreciation of the film.

In my view, the focus of the critical thinker's scrutiny is *thought*, and I take the word "thought" here in its widest sense of being an intellectual/rational product of some sort, including such various items as beliefs, theories, hypotheses, news stories, and arguments, whether they are someone else's or one's own. The task of the critical thinker is to apply the appropriate norms and standards to that product and judge its value – and to articulate that judgment. (Here I part company with those who wish to take actions also to the focus of critical thought.)

If this is true, then critical thinking may be characterized as *thought evaluating thought.* More specifically, critical thinking is the articulated judgment of an intellectual product arrived at on the basis of plus-minus considerations of the product in terms of appropriate standards (or criteria). With this gloss on "critical" in mind, we can look back to the definitions from the Group of Five and see that none of them gives adequate emphasis to this feature. (Parenthetically, in his criticisms of Paul's account, Siegel models *the very practice of critical thinking* in the expanded sense; that is, not only has he been appropriately moved by reasons – Siegel's own definition – but in addition, he has applied appropriate standards to intellectual products – the proposed definitions of Ennis, McPeck and Paul – weighed strengths and weaknesses, and articulated that judgment based on an overall plus-minus assessment.)

Take the heart of Siegel's definition: the critical thinker as someone who is appropriately moved by reasons. One can be appropriately moved by reasons in myriad

ways. A would-be mugger sticks his gun in your back and demands your wallet. You would be appropriately moved by reason if – thinking that your life is worth more than your wallet – you give the mugger your wallet. But that movement of thought doesn't make you a critical thinker. In this situation, there simply is no time for plus-minus reckoning in terms of principles and criteria. You have certainly engaged in rational thinking, however; and that indicates to me the difference between rational thinking and critical thinking.

Siegel might counter that the need for consideration of the merits in plus-minus (or in strength and weaknesses) is implicit in his conception. Perhaps it is, but this feature of critical thinking is too central, too important, to be left implicit. Why? To answer this question, I shall refer to current practice. In his treatment of argument analysis, Scriven (1976) includes the need for discrimination, for assessing both the strengths and the weaknesses in an argument and arriving at a judgment which reflects that. In this moment, the critical thinker displays his differences from the uncritical thinker, the dogmatist who can see only the strengths in the products he likes, only the weaknesses in those he does not approve.

But I'm arguing that we must broaden our account of what is essential to the critical thinker so as to include not only the moment of discrimination but the moment of articulation as well. A critical thinker is not only appropriately moved by reasons but must as well be able to evidence that movement, including the moment of discrimination, in articulated judgment. One defect in extant accounts is that they mislocate the geography of the term "critical thinking"; mapping it much too closely to "knowledge" when it should rather be located closer to "authority."

A second omission – following closely on the one just identified – is that extant accounts do not give sufficient prominence to what is either an important property or defining characteristic of the critical thinker: the capacity to take criticism. The author of the popular book *The Road Less Traveled,* M. Scott Peck, writes: "The tendency to avoid challenge is so omnipresent in human beings that it can properly be considered a characteristic of human nature." The critical thinker must be wary of this tendency and have to some degree mastered it, and whether we take this to be a property or defining feature, it should be mentioned prominently.

Granted, both Paul and Siegel refer in their accounts to the necessity of considering alternative views and being able to criticize one's own fundamental beliefs. In Paul's case, the basis of this realization is found in commentary on the limitations of egocentric thinking and the need for reciprocity. Likewise, implicit in Siegel's reference to the critical spirit is that the critical thinker will certainly be prepared to take criticisms of his or her own views, and will sometimes be persuaded by such criticisms.

Still, these capacities are not identical with the capacity to take real (not imagined) criticism from other directions; that is, to take hostile, not just friendly, fire. It is one thing to imagine a criticism of your theory and to respond to it; something else again to have to confront real and forceful (and sometimes pungent) criticism. That is an acid test for a critical thinker. And I might add: any critical thinking theorist who cannot and will not concede any criticism of his own theory of critical thinking is at loggerheads with the very ideal he seeks to elucidate. Indeed, any critical thinking theorist must be prepared to face the falsifiability challenge: What would count against your theory of critical thinking?

2. Similarities and Differences

Substantial agreement exists on three points. All of the Group of Five agree that critical thinking requires many cognitive skills. Second, all agree that critical thinking requires information and knowledge. Third, all include a dispositional or affective dimension, though they describe and weight it differently. Thus we can say that there is general agreement that critical thinking is a form of reasoning which requires a combination of skills, attitudes, and information/knowledge.

The most apparent differences among our theorists converge around the issue of whether the skills involved in critical thinking are general/generalizable. All seem to grant that the attitudinal factor is general/generalizable. None deny the importance of information/knowledge, though they accord it different amounts of emphasis.

5. Conclusion

Throughout this chapter, I have been concerned to point out the problems we face in attempting to reach consensus on a definition of critical thinking.

1. As we have seen, there are essential areas of disagreement among principal definers. Therefore,

    1.1 All current definitions are stipulative, there cannot be an essential, real, or lexical definition in the midst of such cognitive dissonance; and

    1.2 Each current definition is imbedded in a more or less well developed theory of critical thinking, which means that evaluating the definitions will require us to evaluate as well the theory in which each is contained.

2. These areas of disagreement are amenable to rational intervention.

For rational intervention to occur, I have argued elsewhere that we need to develop a higher order theory of reasoning, within which to situate and adjudicate the various theories of critical thinking. But pending that development, we need at the very least some criteria for evaluating various definitions of critical thinking

3. The following are criteria for evaluating a stipulative definition of critical thinking:
    3.1 The definition should satisfy conventional criteria for stipulative definition:
        3.1.1 It should be broadly reflective of current practice;
        3.1.2 It should not be idiosyncratic.

Any good definition of critical thinking must be able to display its connection with the educational objectives and with the history of the term “critical thinking.” But a completely idiosyncratic and a historical account of critical thinking, no matter how enlightened in other respects, would not be acceptable.

3.2 The definition should be imbedded in a theory of critical thinking. No definition can really hope to stand entirely on its own; and criticisms of definitions are often best seen as criticisms of the broader theory.
3.3 The definition should yield assessment tools. One of the major reasons we define critical thinking is to be able to test for it, or to assess our students' capacities.
3.4 The definition should not assume an *a priori* identity between critical thinking and problem solving, or any other cognitive operation.

Finally, I propose a moratorium: Given that the field is already dialectically crowded, any further attempts must deal with the issue of burden of proof. No new conception of critical thinking should be advanced without its proponent having shown important defects in the extant definitions.

Notes

1. "Pragmatism's Conception of Truth" in *Pragmatism: The Classic Writings*, ed. by H.S. Thayer, P. 238. New York: New American Library, 1970.
2. I am grateful to Margaret Lee of Oakton Community College for this account.

Chapter Thirteen

The Place of Argumentation in the Theory of Reasoning

1. The Thesis

My thesis is that argumentation plays a pivotal role in the theory of reasoning. Hence without an adequate account of argumentation, it will not be possible to develop a complete theory of reasoning. In order to defend this thesis, I shall begin with a brief account of the nature of argumentation. Next, I give a brief account of the theory of reasoning. Finally, I shall state the reasons that support my thesis.

2. Argumentation and Inference

By the term "argumentation," I mean to refer to the social practice of presenting and critiquing arguments. In my view, an argument (whether taken as product or as process) must be distinguished from that which it has customarily been identified with: inference and implication.[1]

Argument and argumentation[2] are essentially distinct from and not reducible to inference or entailment – or any other monolectical logical relationship. I argued for this point (p. 75f. above) and give only a thumbnail sketch here.

The practice of argumentation cannot be adequately grasped unless and until its purpose is clearly understood. As I see it, one basic purpose of argument is rational persuasion – whether the person one seeks to persuade is someone else or oneself. Because the arguer is rational, he or she realizes that it is necessary to provide evidence in support of those claims with which other rational individuals might disagree. This support takes the form of the premises and constitutes what I call the first tier of the argument. Because the participants in the practice of argumentation are presumed rational, it will also be necessary for the argument to have a second tier in which consideration is given alternative points of view (arguments) as well as some range of objections. The second tier will be necessary whether one is constructing or evaluating argumentation.

This concept of argumentation as having two tiers has some important consequences. First, any definition of argument – and this would include definitions found in most logic textbooks in North America – which omits any reference to the second tier is incomplete. For example, in Nickerson (1986: 63), we read:

> In the context of deductive logic, however, an *argument* is a sequence of assertions, some of which are *premises* and one of which is called the *conclusion* . . . Here the term *argument* will be given a somewhat broader connotation than its strictly deductive one. It will be used to

> connote any set of assertions that is intended to support some conclusion or influence a person's belief.[3]

True, this presentation does not exclude what I have called the second tier. However, when one inspects the examples of arguments produced, one finds that they are all of the one-tier variety. A second consequence of this view is that argumentation is seen as an artifact whose purpose creates its structure. Arguments have the two-tier structure because each tier is necessary if the reasoning is to achieve its purpose of rational persuasion.

A third consequence is that argument is seen as a *cultural artifact*. Argumentation and argument are, to use that much-used and much-abused phrase, "dialectical" (see Chapter Five above). That is to say, argumentation presupposes the possibility of rational exchange with another, whether that other is an actual other person, an imagined opponent, or oneself. In this respect, it is important to contrast argumentation with inference.

Inference is a cognitive activity (often automatic) in which the mind moves from one idea (thought, statement) to another. To take an obvious example, if I know that the last person in the room was either Smith or Jones, and if I learn that it wasn't Smith, I will infer that it was Jones. To illustrate another species of inference: when I see smoke coming from the front hood of my car, I will infer that something is wrong under the hood. Inference, then, is "monoletical" in the sense that it presupposes only the individual. No otherness is necessary. An inference can be what it is while remaining within the mind of the individual.[4]

For most of this century, the custom has been to identify argument and inference – the result being the received view that what formal logic studies is argument. That will not do. Specifically, recall that formal logic is founded on the assumption that one can properly distinguish the form of argument from its content and that the essential logical property – validity – is a function of the *form alone* in abstraction from the content. This was Aristotle's insight in *Prior Analytics.*

The received view blurs the line between inference and argument. To see this, consider Peirce's law:

$$((p \supset q) \supset p) \supset p$$

It strikes me as highly doubtful that anyone has ever performed inference with this structure or – to invoke the distinction I am here pressing for – constructed an argument with this form.

To approach the doctrine of logical form from the other end: what is the logical form of argument which attempts to defuse an objection raised against it? Generally, what will be the logical form of two-tiered arguments? Though these considerations about logical form are not fully developed here, they still may be taken as providing some indication that the notion of logical form and argument need to part company.

Once we distinguish between argument and inference, we realize that an adequate theory of reasoning must embrace and illuminate both. The claim I wish to advance is that the theory of reasoning will rightly accord a higher place to argumentation than to inference. Before turning to my defense of that claim, however, I need to say what I understand by the theory of reasoning.

3. The Theory of Reasoning

Let me start by acknowledging my indebtedness to the work of Maurice Finocchiaro, especially his paper, "Informal Logic and the Theory of Reasoning," from which I have benefitted greatly. He writes:

> By a theory of reasoning I mean the attempt to formulate, to test, to clarify, and to systematize concepts and principles for the interpretation, the evaluation and the sound practice of reasoning. (Finocchiaro 1984: 3)

Although I agree with Finocchiaro that a theory of reasoning must accomplish this much, I believe that his characterization is too narrow, as I shall soon indicate.[5]

What, then, is the theory of reasoning? By this, I mean an investigation into reasoning as such taken in its broadest and most wide-ranging sense. Such an inquiry must address a variety of questions such as: What is the nature of reasoning and how does it differ from other forms of cognitive activity? What is the precise relationship between reasoning and rationality? What are the various *classes* and/or *types* and/or *levels* and/or *contexts* of reasoning? What is an appropriate categorical scheme for investigating reasoning?

Such a theory requires at least five components:

A. A conceptual component, addressing itself to the nature of reasoning;
B. An historical component, dealing with various conceptions of reason and also previous theories of reasoning;
C. A linguistic component, addressing itself to the issue of the relationship between language and reasoning;
D. An empirical component, taking account of the accumulating research from psychology and sociology; and lastly,
E. A normative component, addressing itself to questions such as whether universal principles of reasoning are possible or not.

Such a theory, in my view, must be *comprehensive* in that it seems to investigate all forms of reasoning in so far as they are such. It will also be comprehensive because it must incorporate insights from all the disciplines and enterprises such as psychology, sociology rhetoric, etc.

Such a theory must be *unified* in that its various components (normative, empirical, conceptual, linguistic and historical) must be brought together into an integrated and mutually reinforcing whole rather than presented as a loose collection.

That then is what I understand to be involved in the theory of reasoning.

4. Why Argumentation is Central

I shall now present the reasons which I believe support my thesis that argumentation is pivotal for the theory of reasoning.

The first and basic reason is that argumentation ranks as one of the highest forms of reasoning. To show this, I shall briefly develop the idea that there is a hierarchy of reasoning, and that argumentation stands at, or very near, the top.

There are undoubtedly many ways to classify reasoning. I believe that the Scholastics had a theory according to which there are three basic levels of intellectual activity, distinguished according to the complexity of the "object." I favour a modified form of this theory, as follows:

The first level of reasoning may be called *simple apprehension* in which the concept (term, word) is the target or focus. At this level the mind is concerned with grasping or articulating or presenting the meaning of a concept (term, word).

The second level is that of the *statement* in which the mind either affirms or denies a predicate of a subject – or makes a relationship attribution. Thus the unit of reasoning at this second level is the statement. There are various operations or roles for statements in reasoning. They may be used to make assertions, frame hypotheses, report facts, suggest implications, etc.

The third level is what the Scholastics called *syllogism* – the Greek term for which could also be translated "reasoning." This level is characterized by the fact that here several statements are combined into a larger whole. Again there are various forms which these larger units may assume: an argument, an explanation, a scientific or philosophical theory, etc.

The centrality of argumentation can now be seen by noting that the second level in some sense presupposes the first and the third presupposes the second. One cannot engage in the practice of argumentation until and unless one is capable of using statements to make assertions; one cannot master the practice of making assertions unless and until one has grasped concepts. Thus since argumentation presupposes and builds on the other levels, one might argue that argumentation is a higher form of reasoning.

Let me not be misunderstood here. I realize that three levels are rarely separated in practice. For example, sometimes we will argue about the meaning of a term, and sometimes an argument will involve an inference. Still my claim is that argumentation ranks as a higher form of reasoning and as such deserves a central place in our theory.

A second reason for the centrality of argumentation is its recent emergence as an explicit focus of logical theory and as a fruitful and exciting areas of interdisciplinary inquiry. To give some evidence for this claim, I will only refer briefly to a number of initiatives:

A. The recent development of informal logic;[6]
B. The role assigned to argument in Habermas (1984);[7]
C. The development of dialogue logics of various types;[8]
D. The work of the pragma-dialectical school of argumentation (Eemeren and Grootendorst 1987; 1987a);

E. The tremendous interest in argumentation stimulated by the work of Perelman (1969).

Not only these developments, but also the emergence of critical thinking as a focus of educational reform in North America must be included here.[9] In this movement, argumentation has played an important role. It seems to me that these initiatives, and many others which could have been mentioned, indicate that the study of argumentation is central to the theory of reasoning as an important and unfinished piece of business.

Let me here offer some reflections on why argumentation has become a focus of inquiry. The emergence of argumentation as a distinct focus of investigation can be seen as paralleling the historical development undergone in semantics – at least this development as understood by Quine. Briefly, the story about semantics goes like this: For the Greeks (Aristotle, Plato), the term stood at the center of the semantic universe. It was displaced by the proposition some centuries later in the semantic revolution brought about by Frege and Russell in which the statement/proposition takes center stage. Quine himself argues for yet another change in which "the unit of empirical significance is the whole empirical science" (Quine 1963).

This same narrative structure might also be used to highlight the development of logic, with its successive shifts from the term logic of Aristotle to the propositional logic of Frege and through to the current focus on argumentation exemplified in the works of Toulmin (1958), Perelman (1969) and Rescher (1977). In the scheme of things, it turns out that although we already possess well-developed logics of the term (i.e., syllogistic logic) and the proposition (propositional or sentential logic), the same is not true for argumentation. Informal logic – which I would argue is the logic of argumentation – has only recently begun to develop.[10]

A third reason for the importance of argument: if, as I believe is the case, argumentation is the primary rational strategy for arriving at the truth (or the most warranted view), then it surely deserves a place of prominence in any theory of reasoning.

A fourth and final reason: it is tempting to hypothesize that the survival of mankind has been at least in part the result of our inferential capacities.[11] If we are to continue to survive and develop as a species in the nuclear era, we shall simply have to learn to manage our geopolitical tensions and disputes without recourse to force and violence. It seems only natural to think that the practice or argumentation will play an increasingly important role. For this reason, it is a subject most worthy of intense study.

5. Conclusion

It now becomes possible to pinpoint the crucial problem with most traditional theories of reasoning. They have accorded inference or implication the place that ought to be occupied by argumentation. By exposing this mistake, I hope to clear the way for studies of argumentation from all perspectives as important contributions, not only to the study of argumentation, but also thereby to the development of the theory of reasoning.

Notes

1. I shall speak here of inference rather than implication – a relationship which holds, or does not, between statements – regardless of whether any individual draws the inference indicated by the implication. I believe that the distinction I am drawing holds for implication no less than inference. That is, argument or argumentation cannot be identified with implication either.

2. I shall use the terms "argument" and "argumentation" as if they were interchangeable. I know that they are not. My instinct would be to define argumentation as a practice and an argument as one of the products of that practice.

3. I use this example not because Nickerson's conceptualization is better or worse than others, but because it is typical.

4. A perfect solipsist would need to draw inferences in order to survive. What role, if any, she would have for argumentation is entirely unclear to me.

5. Even if this is true of his definition, it does not apply to his fine study of reasoning – Finocchiaro (1980a)

6. See Chapters One and Two above, as well as Johnson and Blair (1985).

7. See especially pp 8-42 where Habermas explores the connection between rationality and argumentation.

8. A key figure in the emergence of dialogue logic is Hamblin, whose work, *Fallacies* (1970), is perhaps the point of departure for recent interest in dialogue logic in the Anglo-Saxon world. Also important in Rescher (1977). For the European angle, the reader should consult Barth and Krabbe (1982). For other developments, see the special issue of *Synthese* (1984) devoted to dialogue logic edited by Douglas Walton.

9. For an account of the critical thinking movement by one of its leaders and founding members see Paul (1985). The Winter 1985 issue of *National Forum* is devoted to critical thinking and is an excellent resource.

10. See above note 6.

11. For a rich account of human inferential capacity which looks at both sides of the coin, see Nisbett and Ross (1980).

Chapter Fourteen

Reasoning, Critical Thinking and The Network Problem

1. Introduction

In Chapter Twelve, "The Problem of Defining Critical Thinking," I discussed various theories of critical thinking. In the course of that discussion, the network problem emerged. In this chapter, I will first of all re-introduce the network problem along with a second form of it. Next I will discuss the theory of reasoning as a possible avenue for dealing with both problems. My intent is to persuade you that a theory of reasoning is needed in order to gain reflective clarity about the relationship between informal logic and critical thinking. Finally, I show how some of the issues in the network problem (first form) can be dealt with.

2. The Network Problem

There are many different definitions of critical thinking, most of them having been devised in the process of attempting to reform the way in which thinking skills are (more accurately, are not) being taught in schools across North America. Critical thinking is one response to that situation. Resnick (1987: 1) has written:

> Philosophers promote critical thinking and logical reasoning skills, developmental psychologists point to metacognition, and cognitive scientists study cognitive strategies and heuristics. Educators advocate training in study skills and problem solving. How should we make sense of these many labels? Do critical thinking, metacognition, cognitive strategies and study skills refer to the same kind of capabilities? And how are they related to problem-solving abilities that mathematicians, scientists and engineers try to teach their students?

Such questions as these, right-minded in my view, form part of what I call the network problem. How are the various constructs that have been introduced to improve thinking skills related to one another? How is critical thinking related to problem solving? To metacognition? To informal logic? To reasoning *überhaupt*? The network problem then is the task of providing a clear understanding of these constructs and their various inter-relationships.

The Network Problem – First Form

Critical Thinking

Problem Solving — Higher Order Thinking

Metacognition — Logic

Reasoning

The questions raised above strike me as being as interesting as they are reasonable. But what kind of questions are we dealing with here? The answer appears to be: These questions are matters of definition. What kind of definition? There is too much divergence, too much apparent difference for any definition to be lexical. Hence at this point, any definition must be stipulative. But a stipulative definition without supporting argumentation and theory is not going to satisfy. That is why we need a theory of reasoning in which these terms are all given appropriate identity and location with respect to one another. That theory will contain recommendations about how to understand critical thinking and its relationship to problem solving. I will say more about the shape and contours of such a theory in Part 3.

Before that I want to raise another form of the network problem. For it is obvious that once we focus attention on reasoning, we open up another vista: namely, how does reasoning relate to rationality? To intelligence? To knowledge? To thinking? These terms as well form a network in the sense that clarity about any one of them appears to some degree to be dependent on the others. How can you hope to understand reasoning without relating it to rationality? To knowledge? To thinking?

The Network Problem – Second Form

Reasoning

Knowledge — Rationality

Intelligence — Thinking

Further, as I have posed the issue, it is clear that the major player here is the term "reasoning," which figures in both problems. And yet when one looks at the terms in the second form of the network problem, one realizes that the situation is anomalous: there is much work done on the theory of knowledge, the theory of rationality, the theory of intelligence, but there is next to nothing that can be looked to as a theory of reasoning! Recently there have been indications of its emergence, and I want to look now in more detail at what this inquiry is.

3. The Theory of Reasoning

A. Introduction

Perhaps the key issue for the theory of reasoning is to get clear on the nature of reasoning itself. Since that is one of the key tasks in the construction of such a theory, I want to begin by discussing in greater detail the nature of the theory of reasoning, and then say something about the nature of reasoning.

B. Finocchiaro on the Theory of Reasoning

I begin by rehearsing elements of Finocchiaro's account and then move on to my own.

Finocchiaro (1984) offers one of the first careful descriptions of the theory of reasoning. He understands it to be "the attempt to formulate, to test, to clarify, and to systematize concepts and principles for the interpretation, the evaluation and the sound practice of reasoning." Though I might quibble about this or that detail (the apparent prejudice in favour of system, a slight over-emphasis on the normative component), I find myself in essential agreement with this description. Finocchiaro (1984: 3) continues:

> I claim that the theory of reasoning so defined is a legitimate philosophical enterprise which is both viable and important.

If he is right, then an obvious question to be asked is: Why has not more attention been given by philosophers (and others) to this enterprise? If you were to go to any of the standard indices of philosophy – *The Philosopher's Index,* for example – and look up "theory of reasoning," and were given a nickel for every reference, you would not have enough change to make a phone call. *The Encyclopedia of Philosophy* contains no entry for the theory of reasoning. Later I will have some suggestions about why this is so.

Finocchiaro now adds a series of clarifications to his definition by making five points about the theory of reasoning. Detailed examination of these points deserves more space than I can give to it here. I restrict commentary to those most important for my purposes.

The first point of clarification is that the focus of the theory will be reasoning rather than argumentation. This is a deliberate move, made so as to include "besides the study of arguments, such activities as problem solving, decision-making, persuasion and explaining, which cannot be equated with argumentation, but which may involve reasoning in an essential way." From my point of view, what Finocchiaro (1984: 3) has done here is forge the connection between the network problem and the theory of reasoning. The emphasis on reasoning is also intended, he says, to signify that what is studied is a mental activity which occurs in the world and that therefore the theory of reasoning "has an empirical orientation and is not a purely formal or abstract discipline." This point also has enormous repercussions, for it means that the theory of reasoning is an inter-disciplinary undertaking.

Next Finocchiaro (1984: 4) anticipates and responds to four objections, each of which challenges the philosophical legitimacy of the theory of reasoning. The first objection – the one he calls "the most fundamental" – is that no such subject matter really exists. This objection is based on the view that reasoning is "an epiphenomenal illusion deriving from using a general label to refer to a number of disparate activities." From such a conception, it would seem to follow that "a theory of reasoning per se, as distinct from theorizing about particular instances or types or fields of reasoning, makes no more sense than a theory of success in general."

Finocchiaro responds to this objection with a counter-charge and a constructive suggestion. First, his counter-charge:

> The criticism confuses the interpretation and the evaluation of reasoning, and . . . in effect over-stresses the latter . . . these critics ignore the fact that "reasoning" is both a task and an achievement word . . . and [this] means that, at worst, what's impossible is a general theory of correct reasoning and not necessarily a general interpretative theory of the structure of reasoning. (1984: 4)

The point is an interesting one, even though it is not entirely clear to me why the same criticism cannot be lodged against any claim for universal principles of interpretation as would be pressed against the idea of universal principles of reasoning or criticism.

Finocchiaro also claims that the notion of a field is problematic. This point is crucial, because the objector presumable holds that principles of reasoning are field-dependent. Turning the tables on the objector, Finocchiaro argues that since fields themselves (to the degree that we make any sense of this notion) are composed of sub-fields, the same reasoning used to argue against general principles of reasoning can be used with "the field." It would then follow where there are sub-fields; for the principles would be principles of the sub-fields. Hence it would follow that there are no principles of physics, only principles of atomic physics, molecular physics, dynamics, etc. – a conclusion which, one presumes, is not palatable to those like McPeck (1981) and Toulmin (1958) who seem to want to argue for the field-dependency of principles of reasoning. This novel line of argumentation strikes me as worthy of more attention than Finocchiaro gives to it here.

Finocchiaro's counter-suggestion is that "the essential feature of all reasoning is the inter-relating of individual thoughts in such a way that some follow from others . . ." I have reservations about this way of conceiving reasoning, but shall postpone commenting on it until later when I discuss the nature of reasoning.

Finocchiaro's handling brings out nicely the way that some of these objections (e.g. the objection about field-dependency) are themselves based on a particular conceptualization of reasoning as "epiphenomenal." In its turn, this realization illustrates the importance attached to the issue of defending or conceptualizing reasoning, and why it is such a fundamental component of the theory of reasoning.

A second objection is that there already exists a branch of cognitive psychology – the psychology of reasoning – which theorizes about reasoning *a posteriori*: what then is the difference between the psychology of reasoning and a philosophical theory of reasoning?

This objection – and Finocchiaro's response to it – raises the question whether Finocchiaro's earlier articulation of the theory of reasoning was entirely free of ambiguity. In other words, did he mean to define the theory of reasoning (*tout court*), or a

philosophico-logical theory of reasoning, or the philosophico-logical component of the theory of reasoning? I am not at all clear on how he would answer this question. In any event, Finocchiaro proceeds to differentiate between the philosophical and psychological approaches to reasoning. The details need not concern us here.

Let us take stock: where do matters stand at this point? What about Finocchiaro's views on the theory of reasoning? Although it will be plain that my own views about the theory of reasoning differ in some important respects from his, there is no denying that his reflections form an extremely useful and fertile point of departure. Let me mention two difficulties.

First, as to the nature of the theory of reasoning: We just discovered what appears to be an ambiguity in Finocchiaro's own articulation of the theory of reasoning as to its nature and identity. Does he see it as a purely philosophical theory? It is an inter-disciplinary one? If the latter, how is the theory rendered coherent, unified? These are difficult questions.

Second, though I am a staunch supporter of the importance of informal logic, I have difficulty accepting Finocchiaro's evocative position that "there is considerable overlap between informal logic and the theory of reasoning." In my view, the theory of reasoning is a much broader undertaking.[1] A theory of reasoning would, of course, have to take stock of logic, but as well, it would have to deal with the other elements of the network discussed above.

Hoping that I have done rough justice to Finocchiaro's treatment, I now move on to my own.

C. Johnson on the Theory of Reasoning

I see the theory of reasoning as a wide-ranging and inter-disciplinary undertaking, based on a philosophical core. That philosophical core is what I now wish to discuss and will do so in terms of a series of questions which must be addressed by such a theory. They are:

1. What is reasoning? Is reasoning either identical to, essentially the same as, or else reducible to inference, implication, or entailment? (I know there are differences among these three, but they do not matter at the moment.) Does reasoning differ from thinking? If so, how?

2. To move to a different level question: What is the relationship between reasoning and rationality? Are they the same concept under different guises? What about reasoning and intelligence? Knowledge? What is the relationship between critical thinking and problem solving? In other words, the theory of reasoning must come to grips with the network problem – both forms.

3. At a different level still: Is there a discernible pattern in the historical development of the various exemplifications of reasoning? What can we learn from various historical theories of reasoning?

4. Again: Are there universal principles of reasoning? Or are substantive principles of reasoning always field-dependent, as Toulmin (1958) and McPeck (1981) and others hold?

5. At a different level still, we must face questions such as: What is an appropriate conceptual scheme (framework) for the theory of reasoning? How can reasoning be most perspicuously categorized?

6. And at a still different level: What are the criteria of adequacy that a theory of reasoning must satisfy?

In sum, the philosophical component of the theory of reasoning involves sustained reflection on such questions as these with a view to developing adequate answers.

It may be asked: Why refer such questions to the theory of reasoning? Why do the problems raised about defining critical thinking fall to the theory of reasoning rather than to some other area of philosophical inquiry?

I give three reasons. First, whatever else might be said about the terms in the network, like critical thinking and problem solving, it seems clear that all of them are *types of reasoning*.[2] And that suggests the following strategy for dealing with the network problem. If all of these are types of reasoning, then let's first of all get clear on the nature of reasoning, how it is that each of these qualifies as reasoning; and then look for differentiating characteristics. Thus it might be hypothesized that greater clarity about reasoning will pay dividends in the pursuit of clarity about these matters.

Second, the questions that emerged in considering the various definitions of critical thinking inevitably point out that what we are confronted with is not just a set of different definitions but as well different theories of critical thinking. How to adjudicate between and among these theories? Once again it seems fruitful to hypothesize that a theory of reasoning might provide a standpoint from which such adjudication might take place.

Third, we might think of turning matters over to, for example, the theory of rationality since that particular inquiry is quite well developed. But there is at least one good reason for not doing this: the concept of rationality is a contested one in ways that the concept of reasoning is not yet. (See MacIntyre 1988).

With that much said about the theory of reasoning, I would like to explore some possible moves within the theory that will have a bearing on the issues discussed earlier.

4. Conjectures about a Solution to the Network Problem

What contribution can the theory of reasoning make to the resolution of the problems we have encountered in thinking about critical thinking? I provide three examples.

A. On the Relationship between Reasoning and Critical Thinking

It is evident that a fundamental step in solving the network problems will be to develop an adequate account of reasoning. As so often happens in philosophy, this matter proves more difficult than might, at first glance, be thought.

An assumption I have adopted is that whatever else may be true of them, the terms in the network are all instances (in some sense or the other) of reasoning. Hence, if we can grasp clearly the nature of reasoning, this may shed refractory light which would allow us to see more clearly their interdependencies – to use Richard Paul's term.

A second assumption I have adopted is that it is helpful to distinguish between thinking and reasoning.[3] I propose to define "thinking" as "the cognitive processing of mental representations." Thinking is thus the genus under which reasoning falls. Given the opportunity for further unpacking, I would want my account to reap the benefits of the Peircian/pragmatist turn toward purpose and action as characteristic of thinking, and likewise the benefits of the Wittgensteinian turn toward intersubjectivity and publicity as features of thinking. In my view, many theories of critical thinking have bought into Cartesian views about the nature of thought – though I cannot defend that view here.

Then what, on my account, differentiates reasoning from thinking? In my opinion, it is the particular way in which purpose is involved. Thinking is the simple having or processing of mental contents or representations. What distinguishes the mere having of representations (daydreaming) from reasoning (investigating the role of daydreaming in our emotional lives) is that in the latter case the sequence of representations is controlled by purpose that *reasoning be conceived of as thinking shaped by the presence of purpose.*

I am well aware that this formulation is very rough and needs a lot of work. Still it seems clear that critical thinking, creative thinking, rational thinking, problem solving, and metacognition can all qualify as instances of reasoning so defined (which is as it should be). Furthermore, it is clear that there is no one way to align these wide-ranging concepts. This entire network is constituted by terms each of which possesses some amount of indeterminacy, which is why we are having some of the problems we are having. But when that indeterminacy becomes problematic and threatens to impede further progress, then reason must intervene. And it might well be argued that this is precisely what is happening in the thinking skills movement. People talk about critical thinking without realizing that there are radically different ways of understanding this construct. People talk about critical thinking and problem solving as though it were just obvious how these were related, when it is not. Others are demanding tests of critical thinking, and that will require real clarity at the conceptual level. For all of these reasons, it seems to me imperative that we undertake the conceptual work of sorting these issues out, locating the constructs within the context of the theories in which they are imbedded, examining those theories, and looking for the signal similarities and differences. Thus, another door opens onto the theory of reasoning.

Let me return for a moment to the question: what is reasoning? Even though all reasoning is thinking under the governance of purpose, yet in my view there is no one activity of mind which can be said just to be reasoning. To express this point, I will say that "reasoning" is, semantically, a generic. By that I mean that it may refer to *any* cognitive activity governed by purpose. Thus it would follow that explaining is reasoning, arguing is reasoning, inferring is reasoning, defining is reasoning, proving is reasoning, and so on. In my view, then, there is no one activity which is reasoning.

Furthermore, as we saw recently, critical thinking and problem solving are also reasoning – though not, it seems to me, on the same level as inferring and the like. Judging

and interpreting are also reasoning, but they seem to exist at a different level still. We need to see whether we cannot construct some sort of categorical scheme which will bring these matters into clear relief – again a summons to the theory of reasoning.

If this recommendation about the nature of reasoning makes sense, then it is a mistake to identify reasoning with any of its species. That would be a mistake comparable to identifying fruits with apples. It may be that apples are the most common fruit and the one that immediately comes to mind whenever we speak of fruits. And just as there is nothing which is fruit, full-stop, over and above its various species, so too there is nothing that is reasoning, full-stop, over and above its various instantiations.

The implications of this result are important. In our reflections on critical thinking, we must avoid falling into the assumptions which have marked much research on reasoning. For instance, it has been widely assumed that reasoning is equivalent to inferring. Perhaps it is now apparent why I am not happy with Finocchiaro's conception, for – as I see it – it binds reasoning too closely to inferring. At least that is what I would take from his phraseology: "inter-relating of thoughts in such a way that some follow from others."[4]

Evidence of the widespread nature of this view of reasoning is plentiful. Here I mention the conclusion drawn by one well-known researcher – Johnathan Evans (1978: 108):

> Any honest appraisal of research into human reasoning must acknowledge one very penetrating criticism, namely that the experiments to date have been very artificial . . .It is now generally acknowledged that the attempts to investigate human memory via meaningless nonsense syllables were misguided and largely unproductive . . . Researchers of deductive reasoning may have been equally misguided. Like the memory men, reasoning researchers must now be prepared to grapple with the complexities of semantics and natural language, leaving far behind the comparative simplicity of formal logic.

Evans is referring to what I call *the fixation on (deductive) inference,* and the point would be that the underlying assumption must not be allowed uncritical acceptance in the theory of reasoning. Likewise dangerous is the assumption that inferring is equivalent to arguing; for one result would be that students in critical thinking courses are given the impression that in mastering the rules which govern the practice of inferring, they have in effect also mastered those for arguing.

I can only flag these assumptions here and indicate that they are discussed in greater detail in the next chapter.

What are the implications of this conceptualization for our present inquiry? My answer is that an adequate account of reasoning will help us to gain overall conceptual clarity about the network problem and also help generate *the necessary conceptual architecture* which would allow us to make clearer these relationships.

B. Differentiating between Critical Thinking and Problem Solving

From the point of view of many observers, critical thinking and problem solving are identical, interchangeable. We have already seen some sign of this in Ennis's theory.

> Critical thinking, frequently compared with problem solving, is an important part of the process of problem solving, a part that is often neglected by cognitive psychologists. (1987: 2)

Here is McPeck's view:

> Similarly, logic texts often "play at critical thinking" by avoiding the main work which is solving problems in the context of discovery. (1981: 16f.)

From the point of view of the theory of reasoning, the relationship between these two members of the network is complicated. Critical thinking and problem solving are alike in that they are higher level cognitive operations involving a number of lower level skills, and dispositions (perhaps tenacity is common to both), and knowledge and information. How then are they different?

I suspect that one difference is the role of inferring, which will certainly prove crucial in problem-solving, as will also the capacity to use statistical methods, while the role of arguing in problem solving will be strictly secondary. (There is a tradition in problem solving where the problems are ill-structured and here argumentation will, it seems, have a more prominent role to play.)

In the matter of dispositions, fair-mindedness will be necessary in critical thinking, but it would not appear to have a large role to play in problem solving. Here it would seem tenacity and endurance and indeed cleverness will take precedence.

In a great many problems, the information needed is presented with or as part of the problem; and although one may have to go outside the frame to solve the problem, this is not typically the case. In critical thinking going outside is often required; and indeed the role of information and knowledge is contested in some critical thinking situations.

There are other ways of differentiating these two members. For one thing, they reflect different intellectual disciplines. To validate this point, compare a classic problem-solving textbook with a classic critical thinking text. Rubenstein (1975) makes much greater use of mathematical and statistical methods than do Barry and Rudinow (1991) or Moore and Parker (1989 2e). Furthermore, the historical record would show that problem solving and critical thinking have different traditions. (Here we could benefit from a good history of the term "problem solving" no less than a good history of the term "critical thinking.")

Thus from the standpoint of the theory of reasoning, critical thinking and problem solving are alike in that they involve a combination of reasoning skills, dispositions, and information/knowledge. What distinguishes them is the particular mix. Thus, if any definition of "critical thinking" renders it identical with "problem solving," then that is a mark against it.

C. Critical Thinking and Informal Logic

Even if we wish to claim that argumentation is absolutely crucial for critical thinking and that informal logic holds the key as regards the study of argumentation, still we must recognize that informal logic and critical thinking are different. Many people continue to

think of informal logic and critical thinking as closely related, perhaps even identical enterprises. No doubt, the formation of the Association for Informal Logic and Critical Thinking (AILACT) at the end of the Second International Symposium on Informal Logic[5] is partly responsible for this view – as is the fact that we have published many articles about critical thinking in *Informal Logic,* and will continue to do so.

Yet we would make the following distinction. Critical thinking, as a habit or style of thinking or reflection, is both a practice and an educational ideal. Informal logic, however, is that branch of logic which focuses on the evaluation of argumentation in ordinary language using non-formal means. There is an area where the two overlap, but critical thinking requires both logical competences that go beyond informal, plus a variety of intellectual virtues beyond the logical. (See above, p. 48f., for further development of this distinction.)

That is how I propose to relate these two members of the network.

Let me now comment briefly on Finocchiaro's intriguing suggestion about the relationship between informal logic and the theory of reasoning. I think that at most one can claim that informal logic plays an indispensable role in the theory of reasoning. One can make this claim under the following two assumptions:

1. Informal logic is that branch of logic especially concerned with argumentation.
2. Argumentation is central to reasoning.

I believe both claims are true. However, given the scope of reasoning, it follows also that informal logic and the theory of reasoning cannot be identified. The theory of reasoning is a broader theory.

5. Conclusion

I hope that in this chapter I have been able to achieve three things. First, I attempted to define more clearly two forms of what I call the network problem. Second, I have attempted to clarify what I mean by the theory of reasoning. Third, I have tried to show how the theory of reasoning can aid in the solution to the network problem. The theory of reasoning thus emerges as an important area of logico-philosophical inquiry.

Notes

1. There is some confusion in my mind about how Finocchiaro would differentiate the theory of reasoning, informal logic, and what he elsewhere calls "empirical logic." See his (1987) where he defines "empirical logic" with the very words used in (1984) to define the theory of reasoning.

2. I say "types" of reasoning; but one might also say *modes* of reasoning or *species* of reasoning or *forms* of reasoning. Part of the work of the theory would be to address the issue of what sort of vocabulary to use, what our categories should be.

3. See Black (1952: 3f.) who makes this same distinction but in a slightly different way.

4. In private conversation, Finocchiaro has said that he would now change the definition and replace “follow from” to “depend upon.” So formulated, my objection to his definition dissolves.

5. Held at the University of Windsor, Windsor Ontario, June 20-23, 1983.

Chapter Fifteen

The Contribution of Informal Logic to the Theory of Reasoning

1. Introduction

These are exciting times for anyone interested in logic and reasoning. Not only has logic been able to break free of some old constraints, i.e., the idea that logic is necessarily formal; but as well, the topic of reasoning has (almost suddenly it seems) come front and center. The work of Harman (1987), Govier (1987), Finocchiaro (1989) and Walton (1990b) has been influential in this regard, so that it no longer can be assumed either that:

(A1) Logic is equivalent to formal, deductive logic,

Or that:

(A2) Logic is equivalent to the theory of reasoning.

Hence the issue, just what is reasoning, is alive, and so also is the theory of reasoning as an area of philosophical inquiry. The purpose of this chapter is first of all to state why I think the emergence of the theory of reasoning is an important philosophical development, and then to indicate what contribution informal logic can make to this emergent area of inquiry.

2. The Theory of Reasoning

The topic of reasoning came to life philosophically because of recent work by authors mentioned above. But there are other reasons. One additional impetus is found in events in the wider educational culture. Here I am referring to the thinking skills movement in higher education which has been underway for some years now.

This educational interest has been sparked by concerns for what is sometimes called "the fourth R" – the notion that while education has prepared Johnny and Janey for the three R's, it has not done an adequate job with the fourth R – reasoning. This interest has manifested itself in a variety of programs and initiatives devoted to the teaching of thinking. (See for details Nickerson, Perkins and Smith 1985)

Various constructs have been proposed as the focal point for such reform: strategic reasoning, lateral thinking (de Bono), critical thinking (Paul, Siegel, Lipman, Ennis) problem solving (Rubenstein), informal logic (Johnson and Blair) and so on. I argued in Chapter Fourteen that although these constructs do not all refer to the same thing, they are interrelated in a network. Just how they are related is the first form of the network problem, and the beginning of my solution is that they are all related as forms of reasoning. My strategy to further differentiate them is to generate an account of reasoning which will

embrace them all, and then figure how to individuate them, in terms of their role in the network. The second form of the network problem is to specify how reasoning relates to rationality, knowledge, thinking, and intelligence.

Now since reasoning figures prominently in both forms of the network problem, the theory of reasoning will play a significant role in solving both forms of the network problem.

When one reflects then on the importance of the theory of reasoning, one cannot help but notice that the theory of reasoning has been underdeveloped. And it is natural enough to ask: Why is that? My answer is that we are up against deeply rooted and powerful assumptions which go right to the heart of the nature of logic. One is that

(A3) Reasoning is just inferring; (Inferentialism)

and the other is that:

(A4) Inferring is just deductive inferring. (Deductive Chauvinism)

Someone once formulated it this way: "All inference s either deductive or defective." With these assumptions articulated, the situation becomes clearer: Because we have a perfectly adequate theory of inference (formal deductive logic), and because reasoning is inferring (A3), we *ipso facto* have a theory of reasoning. That is how we get to (A2).

(A2) Logic is the theory of reasoning.

I take the emergence of reasoning as a topic of inquiry as a sign that the situation is changing. And certainly one of the very first issues that needs to be thought through is the very nature of reasoning.

Since Chapters Thirteen and Fourteen have both dealt with what the theory of reasoning is, I will not repeat those remarks here. Instead I will first offer a few comments about reasoning; and then take account of some objections to the theory of reasoning.

I am going to proceed undialectically here but at least I need to acknowledge that in the philosophical literature there appear to be two types of account of reasoning. The Received View takes it that reasoning is essentially inferring; and so it will describe reasoning as, for instance, the process of deriving a conclusion from premises. (See Walton 1990b for a lucid account.) The alternative appears to be Harman-type views, according to which reasoning is construed as a change in view (belief, intent). (See Harman 1987.)

I would need more space than I can take to say what I think is wrong (and right) about each of these views. While thinking is the mere having and processing of mental representations, in reasoning the sequence of representations is controlled by purpose. But reasoning is generic in that there is no one mental activity that is just reasoning. So reasoning should not be identified with any of its species.

Before we leave the topics of reasoning and the theory of reasoning, there are some objections that need to be voiced and taken into account.

Objection #1: It will be objected that the theory of reasoning is an ill-defined enterprise.

My response is to admit that it is a hybrid – an interweaving of empirical, conceptual and normative considerations. For instance, it is an empirical question how reasoning has changed over the centuries by the addition of new forms (e.g. probability calculus, sampling); and of course the question how well people reason involves both empirical and normative considerations. Consider the work of Nisbett and Ross, particularly *Human Inference* (1980), which raised questions about human rationality, and in turn led to an extensive debate with both normative and conceptual elements (Cohen 1981). However, the crucial questions on the list are conceptual and hence this part of the theory of reasoning is philosophical in nature.

Objection #2: There is an objection based on a worry about the word "theory" here. An acquaintance of mine who came to philosophy from physics told me that one of the things he found hardest to get used to was the freedom with which philosophers toss around the word "theory." He said: "It seemed to me that in philosophy to have a theory is nothing more than to have a few ideas which one forthwith designates as a theory." Is that all there is to it? And am I not just doing more of the same in asking for a theory of reasoning?

My response is to share the concern of those who believe that philosophers and others often are guilty of playing fast and loose with the word "theory." But here as elsewhere it is helpful to let ourselves be guided by the realization that a word like "theory" has a multiplicity of meanings. Its use in science is paramount; and its use by philosophers in many cases derives from that usage. It is an accepted fact that "theory of knowledge" designates a legitimate philosophical enterprise; whatever sense of the term is operative there is certainly appropriate here, in the inquiry called "theory of reasoning."

Objection #3: There is the redundancy objection, which probably comes from those who shave regularly with Occam's Razor (that theories ought not to be multiplied beyond necessity). The challenge here: Is a theory of reasoning really necessary? Won't a theory of rationality or a theory of justification handle these questions?

My response is to point out that while of course it would be possible to broaden any extant theory to handle these questions, still it remains to be acknowledged that to embrace such questions would broaden the focus of either the theory of knowledge or the theory of rationality. Hence it seems perfectly legitimate to see these questions and concerns as constitutive of a new area of philosophical inquiry with clear historical connections to these others.

Having spoken to those objections, and quite aware that there may well be others, I now turn to the subject of informal logic.

3. Informal Logic Described

A. Introduction

Before I can speak about the contribution of informal logic to the theory of reasoning, I have to say something about what informal logic is. This is difficult because there are quite different conceptions and perceptions of informal logic. The implication here (which I resist) is that informal logic is the first step down a slippery slope at the

bottom of which lies the abandonment of all standards in favour of a hang-loose state of mind.

B. What Informal Logic is Not

Some readers are no doubt familiar with Ryle's use of the term (1954: Chapter VIII, "Formal and Informal Logic"). Ryle does not offer an explicit definition of informal logic, instead developing it in contrast with formal logic. This he sees as tied up with the study of certain topic-neutral expressions. He writes:

> . . . there remains a very important way in which the adjective "logical" is properly used to characterize both the inquiries which belong to formal logic and the inquiries which belong to (Author's note: we expect Ryle to say "informal logic" . . . but what he in fact writes is) philosophy. The Formal Logician really is working out the logic of '*and,' 'not,' 'all,' 'some,'* etc., and the philosopher really is exploring the logic of the concepts of *pleasure, seeing, chance,* etc. even though the work of one is greatly unlike the work of the other in procedure and objective. (1954: 119)

Thus, for Ryle, informal logic is the logic of concepts. It is informal because of Ryle's belief that only nonformal procedures will reveal this logic. In other words, while formal logic can handle the entailment relationships that surround conjunction and implication it cannot handle those for *time* and *pleasure.*[1] (In this usage, "informal logic" becomes roughly equivalent to conceptual analysis, to what Wittgenstein (1951: 664) would call the "depth grammar" of an expression.)[2]

For others, informal logic is a branch of epistemology which discusses good reasoning as good cognitive state transitions. Goldman writes:

> Logic is often characterized as the art of reasoning. Unfortunately such a good billing is a bit of a sham. It isn't that logic courses are not useful for good reasoning, it's just that there are no well-established principles of good reasoning (good cognitive state transitions), and no satisfactory theory of how good reasoning is related to formal logic. In short, there is not really a well-established discipline of informal logic. If there is to be such a discipline, I think it must be a branch of epistemology. (1986: 82)

For yet others, it stands for something of an oxymoron – a contradiction in terms. Jaakko Hintikka argues for a revision in the conception of logic, essentially claiming that the rules of traditional logic are "definitory rules" which, if logic is to provide guidance for actual reasoning, must be supplemented by "strategic rules." Such a fortified logic might well provide us with a theory of reasoning; Hintikka certainly regards it as a more promising candidate than so called theories of informal reasoning, about which he says:

> This problem is an especially burning one on the pedagogical level. Philosophers assigned to teach introductory courses in formal logic have often been dissatisfied with the educational value of what they have conveyed to their students. As a consequence not only has a plethora of courses in "reasoning and critical thinking" or "argumentation theory" sprung up, and there even exists an organized "informal logic" movement dedicated to developing a theory and practice of informal argumentation.

> Unfortunately, there exists by any reasonable standard no respectable theory of informal argumentation. It serves no constructive purpose to argue in detail for such a judgment here. If your intellectual tastes are such that you are satisfied with the theoretical level of traditional rhetorical theories or of so-called theories of informal reasoning, I am not going to be able to re-educate you in a half-an-hour. (1989: 4)

Having said what informal logic is not, let me say now what I think it is.

C. The Nature of Informal Logic

In a sense, informal logic is a new enterprise, and in another sense it is an old one. Its roots can be traced back to Aristotle's non-formal logical works, such as *Topics* and *De Sophistiis Elenchis*. Here Aristotle is still engaged in a project related to what takes place in the *Prior Analytics* but with a different focus, closer to what we might call everyday reasoning and argumentation, as opposed to the more scientific sort discussed in *Prior* and *Posterior Analytics.*

By informal logic, I mean to designate a branch of logic whose task it is to develop non-formal standards, criteria, procedures for the analysis, interpretation, evaluation, criticism and construction of argumentation in everyday discourse. This understanding closely coheres with views of Govier (1987) and Walton (1990b) which I now briefly examine.

For Govier (1987), for example, informal logic denotes the art of argument evaluation, a task which Govier insists is nonformal in character:

> Logic is supposed to be both scientific and practical . . . There is a tension in these views of logic. We cannot have it both ways – that logic is entirely formal and yet applies to real argumentation. Either logic is nonformal or it tells us only a small amount of what we need to know and understand and evaluate arguments. (1987: 201)

Here informal logic is seen as the logic of real arguments. Govier says:

> To speak of informal logic is not to contradict oneself but to acknowledge what should be obvious: that the understanding of natural arguments requires substantive knowledge and insights not captured in the axiomatized rules of formal logic. The informal fallacies, historically a central topic for informal logic, involve mistakes in reasoning which are relatively common, but neither formal nor informally characterizable in any useful way. The fact that an account of informal logic makes it out to be just that does not show that it is imprecise or lacking in rigor. (1987: 204)

Informal logic is seen as the logic which helps evaluate natural arguments – a process requiring substantive knowledge and insights not provided by formal logic. Noteworthy as well is Govier's connection of informal logic with the informal fallacies, and her insistence that the qualities of rigor and precision need not be forfeited when one does informal logic.

> We have several nonformal theories of argument in the philosophical world . . . The notion of a nonformal theory of argument is certainly not absurd. . . The theories discussed here were chosen either because of their apparent wide appeal to philosophers in general or because of their appeal to prominent students of informal logic. (1987: 34)

The theories she rejects are, first, deductivism (all good arguments are deductive) and what she calls (strangely, I think) positivism (all arguments are either inductive or deductive).

Walton's (1990b) paper is of interest for many reasons, not the least of which is the way that he characterizes the relationship between formal and informal logic:

> Formal logic has to do with the forms of argument (syntax) and truth values (semantics) . . . Informal logic (or more broadly, argumentation), as a field, has to do with the uses of argumentation in a context of dialogue, an essentially pragmatic undertaking.
>
> Hence the strongly opposed current distinction between informal and formal logic is really an illusion, to a great extent. It is better to distinguish between the syntactic/semantic study of reasoning, on the one hand, and the pragmatic study of reasoning in arguments on the other hand. The two studies, if they are to be useful to serve the primary goal of logic, should be regarded as inherently interdependent, and not opposed, as the current conventional wisdom seems to have it. (1990b: 418f.)

What Walton means is that when properly understood these two areas are not in competition but rather are complementary.[3] (The claim that they are interdependent seems rather different in character, as it needs a lot of work before it can be accepted.) The gist of Walton's view is that informal logic is pragmatic in character. Here he is a bit vague about what informal logic "has to do with argumentation." Shortly I will argue that one thing informal logic has to do is make manifest the nature of argument and argumentation as a prelude to generating the appropriate standards and procedures for the criticism and evaluation of it.

We examined earlier (See p. 47 above) the Barth and Krabbe (1982) threefold distinction of "formal." Informal logic proved to be "informal" in their sense 2 of "formal," in not focusing on the syntactical form of sentences or on validity as a matter of logical form. Informal logic was not opposed to "formal" in their sense 3 since it admits the application of rules and criteria to argumentative discourse.[4]

Thus it appears that informal logic can be distinguished from formal logic not only by methodology but also by its focal point: argumentation can and should be distinguished from inference/implication, which in my view is the proper concern of formal logic. To persuade you of this I need to say more about argumentation and implication. I turn now to that task.

4. Informal Logic and Argumentation

This chapter has thus far been largely descriptive. I have discussed reasoning and the theory of reasoning as an inquiry within philosophy which has recently emerged. I have also described informal logic and defined it as the logic of argumentation. The next part of

this chapter will be more argumentative, for I shall here try to persuade you that one important contribution of informal logic to the theory of reasoning has been to bring the study of argumentation to the fore.

To make that case, I begin with a distinction discussed in Chapters Four, Five, and Six:

Implication – a relationship between statements or propositions;

Inference – the transition of the mind from one thought to another in accordance with some principle;

Argumentation – discourse or reasoning in which an argument is given or critiqued, understanding by argument here that type of discourse in which someone tries to persuade someone or inquire rationally into the truth of a proposition (the conclusion).

Logic, particularly in the 20th century, has blurred the boundaries here by promoting the idea that formal deductive logic is, in some sense, the normative study of inferences and/or arguments, whereas it has nothing to do with either of them. Rather, formal deductive logic has to do with implicative relationships which may or may not be imbedded in inferences and/or arguments.

As far as the theory of reasoning is concerned formal deductive logics have mapped only a small portion of the geography. No one will deny the importance that such logic played in the research program developed by analytic philosophy in the 20th century. Yet the arguments developed by Harman (1986: Chapter 2) indicate that the principles of formal deductive logic cannot be normative with respect to inference, if by inference we mean moving from one state of mind (belief) to another (belief) in accordance with some principle. The best that can be claimed is this: if you want to know whether one statement/assertion/proposition follows logically from some other(s), i.e., whether the one is implied by the others, then FDL is your theory. (Even this is not entirely true; FDL doesn't get pragmatic implication.)

However, formal deductive logic won't help you *qua* inferrer. Here you may get help from what is called *inductive logic* – particularly interesting work done recently by Nisbett and Ross. And it won't help you *qua* arguer. There you need what I have described as informal logic. As I have said, philosophers and logicians have exhibited a tendency to confuse these things.[5]

A pragmatic approach, which is that adopted by many informal logicians, avoids these problems by stressing the fact that arguments exist within the practice of argumentation, which I characterized in Chapter Six as possessing three features: (1) argumentation is teleological; (2) argumentation is dialectical; and (3) argumentation is manifestly rational.

5. The Contribution of Informal Logic to the Theory of Reasoning

It is time to pull these threads together and state what the contribution of informal logic is to the theory of reasoning.

First, if what I have said thus far is in the ballpark, then it follows that informal logic is important, because the object of its study – argumentation – is an important form,

perhaps among the most important forms of reasoning. Suppose, for example, it could be argued that argumentation (as appropriately understood) is among the higher order reasoning skills, even the highest. Suppose it turned out to be the case that while some animals were known to be intelligent enough to master some parts of formal logic, yet they are not able to master even elementary aspects of informal logic. That would suggest that argumentation is a more complex activity than implication or inference.

Second, an argument can be made that the informal level of understanding is prior to and in some sense irreducible to the formal. I take this to be the part of the result of the Gödel's Incompleteness Theorem, which showed that the logicist hope that mathematics could be derived from logic in the mode of a logistic system was destined to frustration. For there are always going to be well-formed formulas which we known on extra-systematic grounds to be true but which cannot be derived within the system. Needless to say, though Gödel's proof uses formalisms, it is not itself a formal proof. And there is other evidence that formal reasoning is finally dependent on informal reasoning; hence the importance of understanding informal reasoning, of which informal logic is an important part.

Third, by focusing attention on argumentation, informal logic helps to make clear the difference between inference and argument and in that process challenges those assumptions about inference and logic (A1-A4) which have been in place for so long.

Finally, it can be argued that the Practice of Argumentation is on the verge of becoming a cultural dinosaur. Observers will note a decrease in literacy skills in the culture, the level of public debate seems at an all-time low, public rhetoric is dominated by the confessional mode à la Oprah – and where in all this is the practice of argumentation to be cherished and nurtured, if not in the Academy? And if in the Academy, then surely informal logic will have an active role to play.

To conclude, it is important to acknowledge that outside the Academy in what some would call the life-world we have witnessed the withering away of the old world order (which was based largely on post World-War II coalitions existing under the threat of military force and power) giving way to new alignments based on common interest and rational persuasion. As we move toward the year 2000 we, the human community, must understand that the only force that we can expect to make use of is "the force of the better argument." Paradoxically, it seems, never has there been a greater need for argumentation in the life-world and never has it been in greater danger as a cultural practice. We, the philosophical community and particularly those committed to the study of everyday argumentation, have something important to contribute. Thus it is that in its commitment to the development of better theories of argumentation, informal logic has an important service to render not merely to the theory of reasoning and to the Academy, but also to the life-world.

Notes

An earlier version of this chapter was read as the Keynote Address to the Atlantic Philosophical Association, Halifax, Nova Scotia, October 1, 1993.

1. This is the same kind of point Davidson (1990: 86f) makes when he talks about logical grammar and the difference between the statements “Bardot is good” and “Bardot is a good actress.”

2. The type of phraseology often associated with Wittgenstein, in which it is fashionable to speak of “the logic” of this or that concept or practice, was not evident in his own writing and thinking.

3. Not everyone views them as opposed; see Chapter Ten above.

4. For additional discussion of the term “form” and its variant meanings and how these affect informal logic, see Johnson and Blair (1991) and also Govier (1987: Chapter 10)

5. This is the position I take in Chapter Six above.

6. I am prepared to argue that neither formal deductive logic nor inductive logic furnishes an adequate theory of argument, for a detailed case, the reader will have to wait for publication of my book *Manifest Rationality.*

Chapter Sixteen

Informal Logic and Politics

1. Introduction: The Great Divide – Why?

In this chapter, I attempt to answer the question: "What contribution can informal logic make to the analysis of political discourse?" *Prima facie,* it would seem that the answer must be either "None" or "Very little," for several reasons. First, it is typically thought that political issues are matters of taste – *de gustibus non est disputandum.* And there just is no disputing taste. "One should never argue about politics or religion" is a widely-credited saying where I come from. Hence, the perception that there is little to no room for serious argumentation.

Second, some philosophers have asserted that logic cannot deal with particular arguments but only with abstract principles – a view of logic which ensures its separation from political concerns. One expression of that view is found in Hamblin:

> Logicians are of course allowed to express their sentiments (about the value of any given argument) but there is something repugnant about the idea that logic is a vehicle for the expression of the logician's own judgments of acceptance and rejection of statements and arguments. The logician does not stand above and outside practical argumentation or, necessarily, pass judgment on it. He is not a judge or a court of appeal, and there is no such judge or court; he is at best a trained advocate. It follows that it is not the logician's particular job to declare the truth of any statement or the validity of any argument. (1970: 244)

And since for many, truth and validity are the significant criteria in evaluating arguments, it follows that logic as such has no direct application to political argumentation.

Third, the 20th-century tradition in logic has been dominated by a concern – even preoccupation – with technique. Logic became a technical subject, closely allied with mathematics and set theory, and as remote as they are from the concerns of the body politic. The validity of logic was the validity of any pure science; whether it can be applied to the world is of at best secondary interest. (Indeed, it is felt in many quarters that this purity is a badge of excellence.)

Bertrand Russell was certainly a leading figure in the mathematicization of logic. I quote a revealing passage from "The Philosophy of Logical Automatism."[1]

> I have naturally a bias in favour of the theory of neutral monism because it exemplifies Occam's razor. I always wish to get in on philosophy with the smallest possible apparatus, partly because it diminishes the risk of error, because it is not necessary to deny the entities you do not assert, and therefore you run less risk of error the fewer entities you assume. The other reason – perhaps a somewhat frivolous one – is that every diminution in the number of entities increase the amount of work for mathematical logic to do in building up things like the entities you used to assume.

In other words, the smaller primitive the basis with which we begin the axiomatic, the more ingenious, the more clever we must be in developing our logical technique. It is the interest in technique which causes logicians to seek e.g. the smallest axiom set for the propositional logic and indeed, having reduced it to one, to find the shortest single axiom.[2] Mathematical logic in the 20th century was thus nurtured by a technical interest that never entirely disappears. Logic is like pure mathematics, embracing the pure mathematician's delight in the play of abstract structures for its own sake – and quite apart from any practical benefits to be derived. The logician's castle stands here – a mighty fortress on the plain – but far removed from the agora.

Fourth, the standards embodied in the traditional logical ideal of soundness (i.e., true premises in a valid argument) are not standards well-suited to the political arena. First, there is the requirement that the premises must necessitate the conclusion. This is of course the tightest possible connection, well suited to mathematical proof but perhaps not so well suited to the uncertainties and vicissitudes of issues in the political arena. Second, there is a problem of the truth-requirement. I discussed this in Chapters Four and Five.

Thus prevalent conceptions of both logic and politics conspire to keep them to a remarkable degree removed from one another. However, the winds of change are blowing. There are hopeful signs, one of which is the emergence of informal logic. This can only properly be understood as a response to the distancing of logic from the life-world. In the next part I describe the origins of informal logic and its nature. In Part 3, I indicate what contribution informal logic can make to the analysis of political discourse. Finally, in Part 4, I argue that although it is a logic well-suited to this purpose of the analysis of political discourse, it is not without its own dangers. A few of these are discussed and ways of minimizing them are also mentioned.

2. The Emergence of Informal Logic

The recent development of informal logic can be traced to the publication of Howard Kahane's landmark textbook, from which I now quote this significant passage:

> Todays' students demand a marriage of theory and practice. That is why so many of them judge introductory courses on logic, fallacy and even rhetoric not relevant to their interests.
>
> In class a few years back, while I was going over the (to me) fascinating intricacies of the predicate logic quantifier rules, a student asked in disgust how anything he's learned all semester long had any bearing whatever on President Johnson's decision to escalate again in Vietnam. I mumbled something about bad logic on Johnson's part, and then stated that Introduction to Logic was not that kind of course. His reply was to ask what courses did take up such matters, and I had to admit that so far as I knew none did.
>
> He wanted what most students today want, a course relevant to everyday reasoning, a course relevant to the arguments they hear and read about race, pollution, poverty, sex, atomic warfare, the population explosion, and all the other problems faced by the human race in the second half of the twentieth century. (Kahane 1971:v)

Two observations. First, note the strongly political nature of Kahane's concerns; the issues he cites are political, the interest is too. As a teacher of formal deductive logic (hereafter FDL) in the late 60s in Canada, I can attest to having had similar experiences which convinced me that FDL was not a logic well-suited to the analysis of political discourse. Others must have been making the same discovery because texts in informal logic began appearing in North America with some regularity during the mid 70s and this led to our first International Symposium on Informal Logic in 1978 and the birth of the *Informal Logic Newsletter*. Later still there were other symposia, new texts in informal logic continued to appear at a healthy pace, and the newsletter became a journal because our readers advised us that they would be more inclined to submit research to a journal which was refereed.

Second, when it comes to teaching logic, I count myself a pragmatist. By that I mean that I view logic as a tool, an instrument for the analysis of thought and discourse. When the tool becomes the problem, then as teacher I must find another tool. And FDL, though a powerful too, proved to be an obstacle for the general run of my students. Informal logic was developed as a tool better suited to their needs and to their mentality.

In our discussion of informal logic, Blair and I claimed that informal logic is the logic of argumentation as distinguished from FDL which is the logic of implication/entailment/inference. (There are, as John Woods will certainly remind us, important differences between inference and implication, and entailment is something different still. Whatever the differences are between these relationships, they are not important here and so I shall not attempt to bring these distinctions into the picture.) In the next section, I attempt to clarify the distinction between argument and implication.

In my view, FDL studies implication/inference, as when one reasons thus: "Oh, it's raining; so we can't have the outing in Vondel Park; which means that I can just stay at home and relax." Here inferences are being drawn, but such (interior) discourse is not yet argumentation. No inquiry is underway, no dialectical issue has been joined, no attempt at rational persuasion has occurred. The performance of this inference is monolectical and occurs, I shall say, in private space.

Argumentation, on the other hand, is an intersubjective practice. Although it doesn't take two to argue (in this sense) because a person can argue with himself, still there is a sense in which argumentation is a public practice occurring in public space and requiring the support of a community. Argumentation is a social practice, then, and arguments (as products) are the issue of that practice. More specifically, an argument is an attempt to persuade someone (even oneself) on rational grounds of the "truth" of some controversial thesis. With arguments, structure follows purpose/function; i.e., arguments have the structure they have (premises leading to a conclusion; reasons supporting a thesis) because of the purpose they serve. I shall not further defend this distinction here, having done so in Chapters Four and Ten above.

This being my characterization of informal logic, I wish now to say something about its application to politics/political discourse.

3. Informal Logic: Its Role in the Analysis of Political Discourse

Let me put before you the thesis that any logic which seeks to apply to political discourse and to be instrumental in political argumentation conducted rationally must accommodate three pre-theoretic intuitions.

The first intuition is this:

(I1)There can be good arguments for a given position and also good arguments against it.

I take this to be evident from the history of thought, most particularly the history of philosophy. The implications of this institution are, however, disastrous for the ideal of soundness, for the simple reason that even though it can be the case that there is a valid argument for P and a valid argument for –P. Hence the goodness referred to in the above intuition cannot be identical with the notion of soundness. Hence if this intuition is to be captured, we must rethink the criteria: either the truth requirement or the validity requirement must be changed.

The second intuition is a kind of continuum hypothesis for argumentation and goes like this:

(I2)Arguments exist in a continuum from strong to weak.

This intuition seems reasonable enough. Since arguments are a human product, they may be expected to run the same range as other human inventions. If we look at arguments in natural language, arguments of all types drawn from different areas – philosophy, ordinary affairs, politics, morality – we may expect that they will fall into a spectrum from strong to weak. Blair and I put it this way: "Rarely is an argument so good that it cannot profit from criticism and seldom is an argument so bad that it cannot be improved by criticism." (Johnson and Blair 1983 3e: 29)

The third intuition regards the deployability of logic:

(I3)The standards of argument must be such that in principle the ordinary arguer can decide whether or not these are satisfied in a given instance; i.e., they must be user-friendly.

If the theory of criticism we wish to apply to the political sphere does not satisfy this intuition, then we will have functionally alienated the practitioner from the realm of discourse which it is proposed he or she investigate.

The problem with these (seemingly reasonable) intuitions is that they are not captured by any normative theory of argumentation I am aware of, whether we look to FDL, dialogue logic or argumentation theory. My claim, which I cannot fully document in this paper, is that informal logic stands a reasonably good chance of satisfying these three intuitions. It is a long argument to make, but let me at least start it here.

We begin with the question: What constitutes a good argument in politics? Indeed: What constitutes a good argument, period?

In answering these questions, informal logic positions itself somewhere between the FDL's view that soundness (i.e. truth and validity) is the appropriate standard; and the view of many theoreticians in rhetoric and speech communication – according to which effectiveness and acceptance/acceptability are the appropriate criteria.

From the viewpoint of this informal logician, an argument is to be understood as an attempt at rational persuasion occurring in public (dialectical) space. This conception furnishes important clues about the criteria to be used in evaluating such discourse.

We must understand that an argument is a two-tiered structure. To see this we need to reflect on its purpose as rational persuasion, for from its purpose follows its structure. That is, because we wish to persuade by reason, we recognize that the claim we make must be supported by reasons. I call the premise-conclusion part of an argument's structure the first-tier of argumentation.

But that is not enough. Because as rational agents we recognize that the other reasoners will have objections to our position, we must provide a second tier – a dialectical tier – in which the wider context is dealt with. Thus there will be two sorts of criteria: structural and dialectical.

A. The First Tier: Structural Criteria for Argument

Blair and I were the first informal logicians to propose a theory of argument according to which the premises of an argument had to meet the criteria of relevance, sufficiency and acceptability (Johnson and Blair 1977; 1983 2e). There are enormous difficulties in our exposition of this theory. As is clear from Chapter Nine, I am myself not altogether happy with the acceptance-requirement. Still I present the outlines of our theory here.

Relevance. In days of old, I interpreted this as an all-or-nothing affair: each premise was either relevant or it was not relevant. Like pregnancy, relevance was not interpreted as admitting of degree. Now, however, I would prefer to say that the argument must satisfy the relevance-criterion. In other words, how well a given premise (or premise-set) meets this requirement is a matter of degree. A premise may be highly relevant or marginally relevant, or not relevant at all.

Sufficiency. In a similar manner, I would revise the sufficiency requirement: I would now prefer to say that the argument must satisfy the sufficiency requirement. How well a premise-set meets this requirement is also a matter of degree.

Acceptability. I am not inclined to reject both acceptability and acceptance as the proper criteria to impose on premises in respect of their connection to the dialectical context (wider world). On the other hand, for reasons indicated in Chapter Eight, I am not yet willing to go back to "truth" as a requirement, which leads to the following intriguing question: Is there an "X" such that it is a "weaker" standard than truth but "stronger" than acceptance?

Thus far I have spoken only about the criteria that apply to the first tier. Criteria for the second tier will be more prominent in the analysis of political discourse, so let me turn to them.

B. The Second Tier: Dialectical Criteria for Argument

Dialectical criteria also flow from an adequate conceptualization of the nature of argumentation. Thus, it is clear that for any argument, and more obviously still in the case of political argumentation, there will be those who disagree with the conclusion. That is, there will be others who – viewing the issue under consideration and the evidence – will come to a different conclusion. To persuade rationally in such a set of circumstances it is not possible to ignore these alternative positions. The arguer must make some attempt to deal with them, and such will form a second-tier of argumentation.

Hence one criterion for the dialectical tier of the argument is:

(D1) How well does the argument address itself to alternative positions?

It is interesting to note that although this is clearly an important property or quality for an argument to have, we do not yet have a name for it. But in informal logic we can say that an arguer who fails to engage satisfactorily with alternative positions is guilty of the fallacy of straw man (if she distorts), the fallacy of *ad hominem* (if she personalizes inappropriately) and the fallacy of red herring (if she digresses).

Now we also know that there will be those who disagree with one or more of the premises. Hence the arguer is under a *prima facie* obligation to face up to possible objections, some of which will be housed in alternative positions, though not all need be. Hence a second criterion:

(D2) How well does the argument deal with objections?

Once again I observe that there is no name for this quality. We may want to say that if the arguer fails to deal with these objections, the result will be a fallacy of insufficiency. This was the suggestion in Chapter Five.

Further, there will be the need for the argument to face up to implications – this is particularly true of the conclusion. Hence arises a third criterion:

(D3) How well does the argument handle consequences?

Typically an argument that runs amok here will be guilty of the fallacy called slippery slope.

These three criteria complete the dialectical or second-tier.

From this sketch and presentation, the following conclusions may arise:

1. These criteria satisfy the three institutions mentioned earlier. There can be good arguments for and against a given conclusion (I1). Since relevance and sufficiency are matters of degree, arguments will fall into a continuum (I2). These criteria are such that they can be deployed by the ordinary arguer (I3).

2. It can be seen why from the point of view of informal logic, the fallacies of straw man, ad hominem, red herring and slippery slope are particularly important in the analysis of political discourse, where heterogeneity of viewpoint is inherent in the very nature of the discourse.

3. To be sure, the whole subject of fallacy is fraught with difficulty; the concept of fallacy is problematic, and there are any number of important criticisms of fallacy theory.[6] Nor do I want to be interpreted as suggesting that political critique can be simply reduced to the hunt for fallacy. There is much more to the analysis of political discourse than merely looking for fallacies. But I do wish to argue that such a mode of critique is logically defensible.

Having mentioned the subject of looking for fallacies, I advert to some of the dangers in this approach to the logical analysis of discourse.

4. Some Dangers We Encounter in Applying this Logic to Politics, and Possible Remedies

If there are dangers in the old way where logic and politics are hermetically sealed off from one another, there are also dangers in applying logic to politics. The first temptation is to picture politicians as charlatans and demagogues, and picture political discourse as a haven for fallacy, to give our students the impression that either all politicians (or all of a certain stripe) as witless and unlogical. Brod makes this point quite nicely:

> . . . It is temptingly easy to lapse into teaching informal reasoning fallacies by providing examples of the duplicity of professional politicians. After all, there is a certain abundance of examples to choose from, and this procedure seems to directly further the desired end of making the course politically relevant. This is counter-productive, however, because by building a course in reasoning around examples of this kind, a false sense of complacency is communicated to students. To read some logic texts, one would think that "politicians" were all a different species. An incessant litany harping on the sins of politicians only serves to increase the students' distance from and distaste for political life. A gap is created in the atmosphere of the classroom – "those evil people we are studying about" on the one side, and "we enlightened individuals" on the other. (1982)

Thus in teaching the application of logic to politics, it is important to show that the mistakes of politicians are not different in kind and probably do not differ in frequency from those in other forums for argumentation.

Another danger I mention only briefly here was pointed out by Richard Paul (1982):

> In this real world whether that of ordinary or philosophical discourse, argument exchanges are means by which contesting points of view are brought into rational conflict, and in which fundamental lines of reasoning are rarely "refuted" by the individual charge of "fallacy," however well supported. The charge of fallacy is a move; it virtually never "refutes" a point of view.

I agree with much of what Paul says here, though he appears overly taken with the concepts of proof and refutation, which seem to me to be entirely inappropriate standards to use to judge argumentation and modes of criticism. But I do agree that the charge of fallacy rarely refutes a point of view; it is not meant to. A charge of fallacy is meant to highlight a potentially problematic area of argumentation. In using the informal approach to the analysis of political discourse, one need not highlight the vocabulary of mathematics: proof and refutation. In discussing these dangers, it is appropriate to call attention to two principles developed by informal logicians which should act as constraints on the application of logic to political discourse.

The Principle of Logical Neutrality prohibits the critic from seeking to pass off substantive criticism as if it were logical criticism. (Johnson and Blair 1993 3e: 215f.) It is one thing to criticize someone's argument on logical grounds – e.g., that a premise is problematic. It is quite another thing to criticize that argument on substantive grounds – e.g., that a premise is false.

The Principle of Discrimination is made necessary because any complex and interesting political argument will have a number of possible weaknesses. This principle requires the critic to focus on the serious flaws in the argument, to avoid nit-picking and shotgunning the argument. (Johnson and Blair 1993 3e: 214f.)

5. Conclusion

It remains now to notice another significant obstacle. I do not know how it is in Europe but in North America we have entered – it seems – a new political era in which not the text, not the platform, not the position paper of days gone by, and indeed not discourse, but rather image and icon have become the *métier* of political discourse. The cultural environment in which politics is conducted has shifted from a literate, print-dominated basis to one dominated by images and pictures.

I refer of course to television. Let me hasten to recommend Neil Postman's trenchant analyses of the effects of that medium.[7] There is at least as much reason to be concerned about what might be called global numbing as about global warming. Logicians have really come to grips with the implication of this development. Logic, as I see it, is premised on the vitality of rational discourse – propositions bound together by rational connections into larger units of discourse.

Unless logicians – whether formal or informal, deductive, inductive, abductive or retroductive; dialectical or dialogical or deontic – unless we can find ways of bringing our considerable resources to bear on the citizens of this new environment, I fear for the prospects of bringing logic and political discourse together. If they can't hear the music, they will not dance.

Notes

1. Bertrand Russell, *Logic and Knowledge*. ed R. Marsh, London: G. Allen and Unwin, 1956, p. 222. Elsewhere, Russell writes: "As I said earlier in this lecture, one thing that our technique does, is to give us the meaning of constructing a given body of symbolic propositions with the minimum of apparatus . . . suppose e.g. that you have constructed your physics with a certain number of entities and a certain number of premises: suppose you discover that by a little ingenuity you can dispense with half of those premises . . ." p. 280.

2. A. N. Prior, *Formal Logic*, Oxford: Oxford University Press, 1962, pp. 301-03 contains the details.

3. See Chapter Nine above.

4. The term "model interlocutor" is from Blair and Johnson 1987.

5. In my view, fallacy theory is a serviceable tool for logical critique and I have so argued, but cannot review those arguments here. See Chapter Ten above and Johnson 1987b.

6. Neil Postman, *Teaching as a Conserving Activity,* Net York: Delacorte, 1979; and *Amusing Ourselves to Death,* New York: Viking 1985.

Bibliography

Adler, Jonathan E. 1991. Critical Thinking: A deflated Defense. *Informal Logic* 13: 61-78.

Allen, Derek. 1990. Govier's *Problems in Argument Analysis and Evaluation. Informal Logic* 12: 43-62.

Anderson, Jerry M., and Dovre, Paul J., eds. 1968. *Readings in Argumentation.* Boston: Allyn and Bacon, Inc.

Anderson, Ray Lynn, and C. David Mortensen. 1967. Logic and Marketplace Argumentation. *Quarterly Journal of Speech* 53: 143-51.

Angell, Richard B. 1964. *Reasoning and Logic.* New York: Appleton-Century-Crofts, Meredith.

Annis, David B. 1974. *Techniques of Critical Reasoning.* Columbus, Ohio: Charles E. Merrill.

Anscombre, Jean-Claude et Oswald Ducrot. 1983. *L'Argumentation dans la Lange.* Bruxelles: Mardaga.

Apostel, Leo. 1971. Assertion Logic and the Theory of Argumentation. *Philosophy and Rhetoric* 4:92-100.

Austin, J. L. 1962. *How to do Things with Words.* Ed. by J.O. Urmson and M. Sbisa. Oxford: Oxford University Press.

Bar-Hillel, Yehoshua. 1964. More on the Fallacy of Composition. *Mind* 74: 43-33.

_____. 1969. Formal Logic and Natural Languages. *Foundations of Language* 5.

Barker, John A. 1976. The Fallacy of Begging the Question. *Dialogue* 15: 241-55.

Barker, Stephen F. 1965; 1974, 2e, 1985, 4e. *The Elements of Logic.* New York: McGraw-Hill.

Barry, Vincent E. 1976. *Practical Logic.* New York: Holt, Rinehart and Winston.

Barry, Vincent E. and Joel Rudinow. 1991. *Invitation to Critical Thinking.* New York: Holt, Rinehart and Winston.

Barth, E. M. 1985. A New Field: Empirical Logic/Bioprograms, Logemes and Logics as Institution. *Synthese.* 63: 376-88.

_____. 1986. Philosophical Logic in the Netherlands after 1940. *Ruch Filozoficny:* 175-205.

_____. 1987. Logic to Some Purpose: Theses Against the Deductive-Nomological Paradigm in the Science of Logic, in Eemeren, Grootendorst, Blair and Willard. 1987a: 33-45.

Barth, E. M. and E. C. W. Krabbe. 1982. *From Axiom to Dialogue.* Berlin: De Gruyter.

Barth, E. M. and J. L. Martens. 1977. *Argumentum Ad Hominem:* From Chaos to Formal Dialectic. *Logique et Analyse* 20: 76-96.

_____. 1982. *Argumentation: Approaches to Theory Formation.* Amsterdam: John Benjamins.

Battersby, Mark. 1989. Critical Thinking as Applied Epistemology. *Informal Logic* 11: 91-99.

Baum, Robert. 1975. *Logic.* New York: Holt, Rinehart and Winston.

Beardsley, Monroe C. 1950. *Practical Logic*. Englewood Cliffs, N.J.: Prentice-Hall.

Belnap, Nuel. 1981. Logica Docens and Relevance. *Teaching Philosophy.* 4: 419-27.

Beth, E. W. 1962. *Formal Methods: An introduction to Symbolic Logic and to the Study of Effective Operations in Arithmetic and Logic.* Dordrecht: Reidel.

Biro, J. I. 1977. Rescuing "Begging the Question." *Metaphilosophy* 8: 257-71.

Black, Max. 1946; 1952 2e. *Critical Thinking.* New York: Prentice Hall.

Blair, J. Anthony. 1987. Argumentation, Inquiry and Speech Act Theory, in Eemeren, Grootendorst, Blair and Willard 1987a: 189-99.

Blair, J. Anthony and Ralph H. Johnson. 1987. Argumentation as Dialectical. *Argumentation.* 1, 41-56.

_____. Eds. 1980. *Informal Logic: The First International Symposium.* Inverness, CA: Edgepress.

Blumberg, Albert E. 1976. *Logic: A First Course.* New York: Alfred A. Knopf.

Brockriede, Wayne. 1960. Toulmin on Argument: An Examination and Application. *Quarterly Journal of Speech* 46: 44-53.

_____. 1972. Arguers as Lovers. *Philosophy and Rhetoric* 5: 1-11.

_____. 1975. Where is the Argument? *Journal of the American Forensic Association* 11: 179-182.

Brod, Harry. 1982. Logic and Politics. An Approach to Teaching Informal Reasoning. *Teaching Philosophy* 5: 211-219.

Brody, Baruch A. 1976 *Logic: Theoretical and Applied.* Englewood Cliffs, N.J.: Prentice-Hall, Inc.

Brown, Robert. 1970. The Burden of Proof. *American Philosophical Quarterly* 7:74-82.

Broyles, James E. 1975. The Fallacies of Composition and Division. *Philosophy and Rhetoric* 8:108-13.

Byerly, Henry C. 1973. *A Primer of Logic.* New York: Harper & Row.

Capaldi, Nicholas. 1973. *The Art of Deception.* Buffalo: Prometheus Books.

Carney, James D. and Richard K. Scheer. 1964; 1974 2e; 1980 2e. *Fundamentals of Logic.* New York: Macmillan.

Carter, K. Codell. 1977. *A Contemporary Introduction to Logic with Applications.* Beverly Hills: Glencoe Press.

Cederblom, Jerry and David Paulsen. 1982; 1986 2e; 1991 3e. *Critical Reasoning.* Belmont, CA: Wadsworth.

Cizek, F. 1974. The Problem of Fallacies. *Teoria a Metoda* 6:105-15.

Cohen, L. J. 1981. Can Human Irrationality be Experimentally Demonstrated? *Brain and Behavioural Science* 4:317-331.

Cohen, Maurice. 1977 and Ernest Nagel. 1934. *Introduction to Logic and Scientific Method.*

Cohen, Morris and Ernest Nagel. 1934. *Introduction to Logic and Scientific Method.*

Cole, Richard. 1965. A Note on Informal Fallacies. *Mind* 74:432f.

Copi, Irving M. 1953; 1961 2e; 1972 4e; 1978 5e. *Introduction to Logic.* New York: Macmillan.

_____. 1954; 1965 2e. *Symbolic Logic.* New York: Macmillan.

_____. 1986. *Informal Logic*. New York: Macmillan.

Corliss, Richard. 1972. A Theory of Contextual Implication. *Philosophy and Rhetoric* 5: 215-30.

Cox, J. Robert and Charles Arthur Willard, Eds. 1982. *Advances in Argumentation Theory and Research.* Carbondale, IL: Southern Illinois University Press.

Crawshay-Williams, Rupert. 1957. *Methods and Criteria of Reasoning: An Inquiry into the Structure of Controversy.* London: Routledge & Keegan Paul.

Cussins, Adrian. 1987. Varities of Psychologism. *Synthese* 70: 126-27.

Damer, T. Edward. 1987 2e. *Attacking Faulty Reasoning.* Belmont, CA: Wadsworth.

D'Angelo, Edward. 1974. The Concept of Critical Thinking. *Revolutionary World* 9:49-55.

Davidson, Donald. 1990. Truth and Meaning. A. P. Martinich, ed., *The Philosophy of Language,* 2e. New York: Oxford University Press. 86ff.

Doss, Seale. 1985. Three Steps Toward a Theory of Informal Logic. *Informal Logic* 7: 127-135.

Ducrot, Oswald. 1984. *Le dire et le dit.* Paris: Minuit.

Eemeren, Frans H. van and Rob Grootendorst. 1984. *Speech Acts in Argumentative Discussions.* Dordrecht: Foris.

_____. 1987. Fallacies in Pragma-Dialectical Perspective, *Argumentation* 1.3:283-301.

_____. 1987a. Teaching Argument Analysis and Critical Thinking in the Netherlands. *Informal Logic* 9:57-69.

Eemeren, Frans H. can, Rob Grootendorst, J. Anthony Blair and Charles A. Willard. 1987a. *Argumentation: Across the Lines of Discipline.* Dordrecht: Foris.

_____. 1987b. *Argumentation: Analyses and Practices.* Dordrecht: Foris.

_____. 1987c. *Argumentation: Perspectives and Approaches.* Dordrecht: Foris.

_____. 1992a. *Argumentation Illuminated.* Amsterdam: SICSAT.

_____. 1992b. *Proceedings of the Second International Conference on Argumentation.* Amsterdam: SICSAT.

Eemeren, Frans H. van, Rob Grootendorst, Sally Jackson and Scott Jacobs. 1993. *Reconstructing Argumentative Discourse.* Tuscaloosa, AL: University of Alabama Press.

Eemeren, Frans H. van, Rob Grootendorst and Tjark Kruiger. 1987. *Handbook of Argumentation Theory.* Dordrecht: Foris.

Eemeren, Frans H. van and Tjark Kruiger. 1987. "Identifying Argumentation Schemes,: in Eemeren, Grootendorst, Blair and Willard 1987c: 70-81. Dordrecht: Foris.

Ehlers, Henry J. 1976. *Logic: Modern and Traditional.* Columbus, Ohio: Charles E. Merrill.

Ehninger, Douglas. 1974. *Inference, Belief, and Argument. An Introduction to Responsible Persuasion.* Glenview, Illinois: Scoot, Foresman.

Emmet, E. R. 1960. *Handbook of Logic.* New York: Philosophical Library.

Engel, S. Morris. 1976. *With Good Reason. An Introduction to Informal Fallacies.* New York: St. Martin's.

Ennis, Robert H. 1958. An Appraisal of the Watson-Glaser Critical Thinking Appraisal. *Journal of Educational Research* 52:155-58.

_____. 1962. A Concept of Critical Thinking. *Harvard Educational Review* 32:81-111.

_____. 1964. Operational Definitions. *American Educational Research Journal* 1: 181-201.

_____. 1969a. *Logic in Teaching*. Englewood Cliffs, N.J.: Prentice-Hall.

_____. 1969b. *Ordinary Logic.* Englewood Cliffs, N.J.: Prentice-Hall.

_____. 1974. The Believability of People. *The Educational Forum* 39:347-54.

_____. 1985. Critical Thinking and the Curriculum. *National Forum* 65:28-31.

_____. 1987. A Taxonomy of Critical Thinking Dispositions and Abilities. In J. B. Baron and R. J. Sternberg, eds., *Teaching Thinking Skills: Theory and Practice.* 9-26. New York: Freeman.

_____. 1989. Critical Thinking and Subject Specificity. Clarification and Needed Research. *Educational Researcher* 18 (3):4-10.

Facione, Peter. 1976. Counterexamples and Where They Lead. *Philosophy and Phenomenological Research* 36:523-30.

Fair, Frank. 1976. The Fallacy of Many Questions: "Hot to Stop Beating Your Wife." *Southwestern Journal of Philosophy* 4: 89-92.

Fearnside, W. Ward and William B. Holther. 1959. *Fallacy: the Counterfeit of Argument.* Englewood Cliffs, N.J." Prentice-Hall.

Finocchiaro, Maurice. 1974. The Concept of *Ad Hominem* Argument in Galileo and Locke. *The Philosophical Forum* 5:394-404.

_____. 1980. Fallacies and the Evaluation of Reasoning. *American Philosophical Quarterly.* 18: 13-22.

_____. 1980a. *Galileo and the Art of Reasoning.* Dordrecht: Reidel. Boston Studies in the Philosophy of Science, 61.

_____. 1984. Informal logic in the Theory of Reasoning. *Informal Logic* 6:38.

_____. 1989. Methodological Problems in Empirical Logic. *Communication and Cognition.* 22: 313-33.

Flew, Antony. 1977. *Thinking Straight.* Buffalo NY: Prometheus Books.

Fogelin, Robert J. 1978; 1990 4e with Walton Sinnott-Armstrong. *Understanding Arguments: An Introduction to Informal Logic.* New York: Harcourt Brace Jovanovich.

Foss, Sonya K., Karen A. Foss and Robert Trapp. 1985. *Contemporary Perspectives on Rhetoric.* Prospect Heights, IL: Waveland Press.

Freeman, David Hugh. 1967. *Logic: The Art of Reasoning.* New York: David Mckay.

Freeman, James B. 1988; 1992e. *Thinking Logically.* Englewood Cliffs, NJ: Prentice-Hall.

_____. 1991. *Dialectics and the Macrostructure of Argument: A Theory of Argument Structure.* Amsterdam: Mouton de Gruyter.

Frege, Gottlob. 1879. *Begriffsschrift.* Halle.

Geach, Peter. 1976. *Reason and Argument.* Oxford: Basil Blackwell.

Georgacarakos, G. N. & Robin Smith. 1979. *Elementary Formal Logic.* New York: McGraw-Hill.

George, Rolf. 1983. A Postscript on Fallacies. *Journal of Philosophical Logic* 12:319-25.

Gerber, D. 1974. On *Argumentum Ad Hominem. The Personalist* 55:23-28.

_____. 1977. Reply to Woods and Walton's "*Ad Hominem, Contra* Gerber." *The Personalist* 58: 145-46.

Girle, Roderic A., Terence A Halpin, Corinne L. Miller and Geoffrey H. Williams. 1978. *Inductive and Practical Reasoning.* East Brisbane: Rotecoge.

Goldman, Alvin. 1985. The Relation between Epistemology and Psychology. *Synthese* 64 (1) July.

_____. 1986. *Epistemology and Cognition.* Cambridge: MIT Press.

Gordon, Donald R. 1966. *Language, Logic and the Mass Media.* Toronto: Holt, Rinehart and Winston of Canada.

Govier, Trudy. Who Says There are no Fallacies? *Informal Logic Newsletter* 5:2-10.

_____. 1985; 1988, 2e; 1993, 3e *A Practical Study of Argument.* Belmont, CA: Wadsworth.

_____. 1987. *Problems in Argument Analysis and Evaluation.* Dordrecht: Foris.

Grice, H. P. 1975. Logic and Conversation, in P. Cole and J.L. Morgan, eds., *Syntax and Semantics 3: Speech Acts.* New York: Academic Press.

Griffith, William B. 1975. Symbolic Logic and the Appraisal of Arguments. *Teaching Philosophy* 1:3-20.

Grize, Jean-Blais. 1982. *De la Logique à l'Argumentation.* Geneva: Droz.

Grootendorst, Rob. 1987. Some Fallacies about Fallacies. In Eemeren, Grootendorst, Blair and Willard 1987a: 331-42.

Grunbaum, Adlof and Wesley Salmon. Eds. 1988. *The Limits of Deductivism.* Berkeley: University of California Press.

Haack, Susan. 1976a. Recent Publications in Logic. *Philosophy* 51:62-79.

_____. 1976b. The Justification of Deduction. *Mind* 85:112-19.

Habermas, Jürgen. 1984. *Theory of Communicative Action.* Vol, One: Reason and the Rationalization of Society. Tr. by Thomas McCarthy. Boston: Beacon Press.

Hamblin, C. L. 1970. *Fallacies*. London: Methuen and Co. Ltd. Reissued by Newport News, VA: Vale Press.

Hansen, Hans V. 1990. An Informal Logic Bibliography. *Informal Logic* 12:155-184.

Harman, Gilbert. 1987. *Change in View.* Cambridge, MA: MIT Press.

Hepp, Maylon H. 1949. *Thinking Things Through. An Introduction to Logic.* New York: Charles Scribner's Sons.

Hinderer, Drew E. 1991. *Building Arguments.* Belmont: Wadsworth Publishing Company.

Hintikka, Jaakko. 1987. The Fallacy of Fallacies. *Argumentation* 1:211-238.

_____. 1989. The Role of Logic in Argument. *Monist* 72:324.

Hitchcock, David. 1983. *Critical Thinking: A Guide to Evaluating Information.* Toronto: Methuen.

Hoaglund, John. 1984. *Critical Thinking: An Introduction to Informal Logic.* Newport News, VA: Vale Press.

Hoffman, Robert. 1971. On Begging the Question at Any Time. *Analysis* 32:51.

Iseminger, Gary. 1974. Successful Argument and Rational Belief. *Philosophy and Rhetoric* 7:47-57.

Jeffrey, Richard. 1981. *Formal Logic.* New York: McGraw-Hill.

Johnson, Oliver A. 1967. Begging the Question. *Dialogue* 6:135-50.

Johnson, Ralph H. 1972. *The Concept of Existence in the Concluding Unscientific Postscript.* The Hague: Martinus-Nijhoff.

_____. 1981a. Charity Begins at Home. *Informal Logic Newsletter* 3:4-9.

_____. 1981b. Toulmin's Bold Experiment. *Informal Logic Newsletter* 3(2):16-27, and 3(3):13-19.

_____. 1987a. Logic Naturalized: Recovering a Tradition, in Eemeren, Grootendorst, Blair and Willard 1987a: 47-56.

_____. 1987b. The Blaze of Her Splendors. *Argumentation* 1:239-53.

_____. 1992. The Impact of the Continuum, Hypothesis on Theories of Evaluation, in Eemeren, Grootendorst, Blair and Willard 1991a: 148-58.

Johnson, Ralph H. and J. Anthony Blair. 1977; 1983 2e; 1993 3e; 1994 1st U.S. ed. *Logical Self-Defense.* Toronto: McGraw-Hill Ryerson.

_____. 1980. The Recent Development of Informal Logic. In Blair and Johnson. Eds. 1980: 3-73.

_____. 1980a. A Bibliography of Recent Work in Informal Logic. In Blair and Johnson. Eds. 1980: 162-73.

_____. 1985. Informal Logic: The Past Five Years. *American Philosophical Quarterly* 22:181-196.

_____. 1988. The Current State of Informal Logic/Critical Thinking. *Informal Logic* 9: 147-151.

_____. 1991. Contexts of Informal Reasoning: Commentary. In Voss, Perkins and Segal. 1991: 131-150.

_____. 1992. Introduction. *Informal Logic* 14:2f.

Johnstone, Henry W. Jr. 1959. *Philosophy and Argument.* University Park, Penn.: The Penn State University Press.

_____. 1970. Philosophy and the *Argumentum Ad Hominem. Revue Internationale de Philosophie* 24:107-11.

_____. 1978. *Validity and Rhetoric in Philosophical Argument: An Outlook in Transition.* University Park PA: The Dialogue Press of Man & World.

Kahane, Howard. 1969. *Logic and Philosophy: A Modern Introduction.* Belmont, CA: Wadsworth.

_____. 1971; 1976 2e; 1980 3e; 1992 6e *Logic and Contemporary Rhetoric: The Use of Reason in Everyday Life.* Belmont, California: Wadsworth.

_____. 1980. The Nature and Classification of Fallacies. In Blair and Johnson Eds. 1980: 31-39.

Kahneman, Daniel, Paul Slovic and Amos Tversky. 1982. *Judgement Under Uncertainty: Heuristics and Biases.* Cambridge: Cambridge University Press.

Kaminsky, Jack and Alice Kaminsky. 1974. *Logic: A Philosophical Introduction.* Reading MA: Addison-Wesley.

Kienpointner, Manfred. 1991. Argumentation in Germany and Austria: An Overview of Recent Literature. *Informal Logic* 13:129-136.

_____. 1992. *Alltagslogik: Struktur und Funktion von Argumenationsmustern*. Stuttgart-Bad Cannstatt: Fromman-Holzboog.

Kilgore, William J. 1968. *An Introductory Logic.* New York: Hold, Rinehart and Winston.

King-Farlow, John. 1971. On Making Sense in Philosophy and Rhetoric (A Reply to Professor Schouls). *Philosophy and Rhetoric* 4:42-47.

Kodish, Gary M. 1971. Professor Schouls' Presuppositions. *Philosophy and Rhetoric* 4:48-54.

Kopperschmidt, Joseph. 1976. *Allgemeine Rhetorik.* Stuttgart.

_____. 1980. *Argumentation.* Stuttgart.

_____. 1989. *Methodik der Argumentationsanalyse.* Stuttgart.

Koy, Moshe. 1974. Logic, Language, and Formalization. *Logique et Analyze* 67-68: 389-444.

Kruger, Arthur N. 1975. The Nature of Controversial Statements. *Philosophy and Rhetoric* 8: 137-58.

Lambert, Karel and William Ulrich. 1980. *The Nature of Argument.* New York: Macmillan.

Lee, Donald S. 1973. Assumption Seeking as Hypothetic Inference. *Philosophy and Rhetoric*. 6: 131-52.

Levi, Don S. 1987. In Defense of Informal Logic. *Philosophy and Rhetoric.* 20: 227-247.

Lipman, Matthew. 1988. Critical Thinking: What Can It Be? *Analytic Teaching* 8: 5-12.

Little, J. Frederick, Leo Groarke and Christopher Tindale. 1989. *Good Reasoning Matters!* Toronto: McClelland and Stewart.

Little, Winston W., W Harold Wilson and W. Edgar Moore. 1955. *Applied Logic*. Boston: Houghton Mifflin.

Lorenz, Kuno. 1982. On the Criteria for the Choice of Rules of Dialogue Logic. In Barth and Martens. Eds. 1982.

Lorenzen, Paul and Kuno Lorenz. 1978. *Dialogische Logik.* Darmstadt: Wissenschaftliche Buchgesellschaft.

Lumer, Christoph. 1990. *Praktische Argumentationstheorie.* Braunschweig: Vieweg.

Machina, Kenton F. Truth, Belief and Vagueness. *The Journal of Philosophical Logic* 5: 47-78.

MacIntyre, Alastair. 1988. *Whose Justice? Which Rationality?* Notre Dame: University of Notre Dame Press.

Maier, Robert. Ed. 1987. *Norms in Argumentation.* Dordrecht: Foris.

Manicas, Peter T. and Arthur N. Kruger. 1976. *Logic: The Essentials*. New York: McGraw-Hill.

Martin, Jane Roland. 1992. Critical Thinking for a Humane World. In Norris 1992: 163-180.

Massey, Gerald. 1975. Are There Any Good Arguments That Bad Arguments Are Bad? *Philosophy in Context* 4:61-77.

_____. 1981a. The Fallacy Behind Fallacies. *Midwest Studies in Philosophy* 6:489-500.

_____. 1981b. The Pedagogy of Logic: Humanistic Dimensions. *Teaching Philosophy* 4:303-36.

Mckay, Thomas J. 1984. On Showing Invalidity. *Canadian Journal of Philosophy.* 14:91-101.

McPeck, John. 1981. *Critical Thinking and Education.* New York: St. Martin's.

_____. 1990. *Teaching Critical Thinking: Dialogue and Dialectic.* New York: Routledge, Chapman and Hall.

_____. 1991. What is Learned in Informal Logic Course? *Teaching Philosophy* 14:25-34.

Meiland, Jack. 1980. *College Thinking: How to Get the Best out of College.* New York: The New American Library.

Meyer, Michel. 1986. *De la problématologie: philosophie, science et langage.* Bruxelles: Mardaga.

Michalos, Alex C. 1969. *Principles of Logic.* Englewood Cliffs, N.J.: Prentice-Hall.

_____. 1970. *Improving Your Reasoning.* Englewood Cliffs, N.J.: Prentice-Hall.

Moore, W. Edgar. 1967. *Creative and Critical Thinking.* Boston: Houghton Mifflin.

Moore, Brooke Noel and Richard Parker. 1989 2e. *Critical Thinking.* Mountain View CA: Mayfield.

Munson, Ronald. 1976. *The Way of Words: An Informal Logic.* Boston: Houghton Mifflin.

Myro, George, Mark Bedau & Tim Monroe. 1987. *Rudiments of Logic.* Englewood Cliffs, N.J.: Prentice-Hall.

Naess, Arne. 1966. *Communication and Argument: Elements of Applied Semantics.* Tr. by A. Hannay. Oslo: Allen & Unwin.

Natanson, Maurice, and Johnstone. Henry W., Jr. eds. 1965. *Philosophy, Rhetoric and Argumentation.* University Park, Penn.: The Penn State University Press.

Nickerson, Raymond S. *Reflections on Reasoning.* Hillsdale, NJ: Lawrence Erlbaum.

Nickerson, Raymond S., David N. Perkins, and Edward E. Smith. 1965. *The Teaching of Thinking.* Hillsdale, N.J.: Erlbaum.

Nisbett, Richard and Lee Ross. 1980. *Human Inference: Strategies and Shortcomings of Social Judgement.* Englewood Cliffs, N.J.: Prentice-Hall.

Nolt, John Eric. 1984. *Informal Logic: Possible Worlds and Imagination.* New York: McGraw-Hill.

Norris, Stephen P., ed. 1992. *The Generalizability of Critical Thinking.* New York and London: Teachers College Press.

Norris, Stephen P. and Robert H. Ennis. 1989. *Evaluating Critical Thinking.* Pacific Grove CA: Midwest.

Oesterle, John. 1963. *Logic: The Art of Defining and Reasoning.*

Paul, Richard. 1982. Teaching Critical Thinking in the Strong Sense. *Informal Logic Newsletter* 4(2):2-7.

_____. 1985. The Critical Thinking Movement. *National Forum* 55:2-3, 32.

_____. 1989. Critical Thinking in North America: A New Theory of Knowledge, Learning and Literacy. *Argumentation* 3:197-235.

_____. 1990. *Critical Thinking: What Every Person Needs to Survive in a Rapidly Changing World.* A. J. A. Binker (ed.), Rohnert Park, CA: Center for Critical Thinking and Moral Critique.

Peck, M.S. 1978. The Road Less Traveled. New York: Simon and Schuster.

Peirce, Charles S. 1878. How to Make our Ideas Clear. In: Paul Kurtz, ed., *American Philosophy in the Twentieth Century.* New York: Macmillan.

_____, Peirce, Charles S. The Fixation of Belief.

Peppinghaus, B. 1976. Inadmissible Arguments. *Logique et Analyse* 29:119-39.

Perelman, Ch., and L. Olbrechts-Tyteca. 1969. *The New Rhetoric: A Treatise on Argumentation.* Trans. John Wilkinson and Peircell Weaver. Notre Dame: University of Notre Dame Press.

Plantin, Christian. 1990. *Essais sur l'Argumentation.* Paris: Klimé.

Pomeroy, Ralph. 1982. Ryle on (and for) Informal Logic. *Informal Logic Newsletter* 5(1): 23-25.

Pospesel, Howard. 1974. *Propositional Logic: Introduction to Logic.* Englewood Cliffs, N.J.: Prentice-Hall, Inc.

Purtill, Richard L. 1972 *Logical Thinking.* New York: Harper & Row.

Quine, Willard Van Orman. 1940. *Mathematical Logic.* New York: Harper Torchbook.

_____. 1950. *Methods of Logic.* London: Routledge and Kegan Paul.

_____. 1963 2e. *From a Logical Point of View.* New York: Harper.

Reipe, Dale. 1966. Some Reconsiderations of the *Argumentum Ad Hominem. Dasharna International* 6:44-47.

Rescher, Nicholas. 1964. *Introduction to Logic.* New York: St Martin's.

_____. 1976. *Plausible Reasoning: An Introduction to the Theory and Practice of Plausible Inference.* Assen: Van Gorcum.

_____. 1977. *Dialectics: A Controversy-Oriented Approach to the Theory of Knowledge.* Albany: SUNY Press.

Resnick, Lauren. 1987. *Education and Learning to Think.* Washington: The National Academy Press.

Robinson, Richard. 1971a. Arguing from Ignorance. *The Philosophical Quarterly* 21:99-108.

_____. 1971b. Begging the Question. *Analysis* 31:113-17.

Rowe, W.L. 1962. The Fallacy of Composition. *Mind* 71:87-92.

Rubenstein, Mosche. 1975. *Patterns of Problem Solving.* Englewood Cliffs: Prentice-Hall.

Ruby, Lionel. 1954. *The Art of Making Sense: A Guide to Logical Thinking.* Philadelphia and New York: J. B. Lippincott.

Runkle, Gerald. 1978. *Good Thinking: An Introduction to Logic.* New York: Holt, Rinehart and Winston.

Russell, Bertrand and A. N. Whitehead. 1927, 2e. *Principia Mathematica,* 3 vols. Cambridge.

Ryle, Gilbert. 1954. *Dilemmas.* Cambridge: Cambridge University Press. Sacksteder, William.

Sacksteder, William. 1974. The Logic of Analogy. *Philosophy and Rhetoric* 7:234-52.

_____. 1977. Logics. *Logique et Analyse* 20:42-66.

Salmon, Merrilee. 1984; 1989 2e *Introduction to Logic and Critical Thinking.* New York: Harcourt Brace Jovanovich.

Salmon, Wesley C. 1963; 1973 2e *Logic*. Englewood Cliffs, N.J.: Prentice-Hall.

Sanford, David. 1972. Begging the Question. *Analysis* 31:197-99.

_____. 1977. The Fallacy of Begging the Question: A Reply to Barker. *Dialogue* 16:485-98.

Scherer, Donald and Peter A. Facione. 1977. A Pre-Post Test for Introductory Logic Courses. *Metaphilosophy* 8:342-47.

Schipper, Edith Watson and Edward Schuh. 1959. *A First Course in Modern Logic*. New York: Henry Holt and Company.

Schmidt, Michael F. 1986. On Classifications of Fallacies. *Informal Logic.* 8(2):57-66.

Schouls, Peter A. 1969. Communication, Argumentation, and Presupposition in Philosophy. *Philosophy and Rhetoric* 2:183-99.

_____. 1972. Reason, Semantics and Argumentation in Philosophy. *Philosophy and Rhetoric* 4:124-31.

Scriven, Michael. 1970. Philosophy of Education: Learning Theory and Teaching Machines. *The Journal of Philosophy* 62:896-908.

_____. 1976. *Reasoning*. New York: McGraw-Hill.

_____. 1990. Foreward to McPeck (1990).

Searle, John R. 1970 2e. *Speech Acts: An Essay in the Philosophy of Language.* Cambridge: Cambridge University Press

Searles, Herbert L. 1948; 1956 2e. *Logic and Scientific Methods: An Introductory Course.* New York: Ronald Press.

Seech, Zachary. 1987. *Logic in Everyday Life.* Belmont, CA: Wadsworth.

_____. 1993. *Open Minds and Everyday Reasoning.* Belmont, CA: Wadsworth.

Siegel, Harvey. 1988. *Educating Reason: Rationality, Critical Thinking and Education.* New York: Routledge.

Simco, Nancy D. and Gene G. James. 1976. *Elementary Logic.* Encino and Belmont, California: Dickenson.

Snoeck Henkemans, A. F. 1992. *Analyzing Complex Argumentation.* Amsterdam: SICSAT.

Sproule, J. Michael. 1980. *Argument: Language and Its Influence.* New York: McGraw-Hill.

Terrell, D. B. 1967. *Logic: A Modern Introduction to Deductive Reasoning in Natural Language.* Englewood Cliffs N.J.: Prentice-Hall.

Thomas, Stephen N. 1973; 1981 2e; 1986 3e. *Practical Reasoning in Natural Language.* Englewood Cliffs NJ; Prentice-Hall.

Toulmin, Stephen. 1958. *The Uses of Argument.* Cambridge: Cambridge University Press.

Toulmin, Stephen, Rickard Reike and Allan Janik. 1979; 1984 2e. *An Introduction to Reasoning.* New York: Macmillan.

Van De Vate, Dwight, Jr. 1975a. Reasoning and Threatening: A Reply to Yoos. *Philosophy and Rhetoric* 8:177-79.

_____. 1975b. The Appeal to Force. *Philosophy and Rhetoric* 8:43-60.

Voss, James F., David N. Perkins and Judith W. Segal. Eds. 1991. *Informal Reasoning and Education.* Hillsdale, N.J.: Lawrence Erlbaum Associates.

Walton, Douglas. 1980. *Petitio principia* and Argument Analysis. In Blair and Johnson. Eds. 1980: 41-54.

_____. 1982. *Topical Relevance in Argumentation.* Amsterdam: John Benjamins.

_____. 1984. *Logical Dialogue Games and Fallacies.* Lanham, MD: University Press of America.

_____. 1985a. *Arguer's Position: A Pragmatic Study of 'Ad Hominem' Attack, Criticism, Refutation and Fallacy.* Westport, CT: Greenwood Press.

_____. 1985b. New Directions in the Logic of Dialogue. *Synthese* 63: 259-274.

_____. 1987a. *Informal Fallacies: Towards a Theory of Argument Criticisms.* Amsterdam: John Benjamins.

_____. 1987b. What is a Fallacy? In: Eemeren, Grootendorst, Blair and Willard. 1987a: 323-30.

_____. 1989a. *Question-Reply Argumentation.* New York: Greenwood Press.

_____. 1989b. *Informal Logic: A Handbook for Critical Argumentation.* Cambridge: Cambridge University Press.

_____. 1990a. *Practical Reasoning: Goal-Driven, Knowledge-Based, Action-Guiding Argumentation.* Savage, MD: Rowan and Littlefield.

_____. 1990b. What is Reasoning? What is an argument? *The Journal of Philosophy* 87:399-419.

_____. 1991. *Begging the Question: Circular Reasoning as a Tactic of Argumentation.* New York: Greenwood.

_____. 1992a. *The Place of Emotion in Argument.* University Park, PA: Pennsylvania State University Press.

_____. 1992b. *Plausible Argument in Everyday Conversation.* Albany: SUNY Press.

_____. 1992c. *Slippery Slope Arguments.* Oxford: Clarendon Press. New York: Oxford University Press.

Weddle, Perry. 1978. *Argument: A Guide to Critical Thinking.* New York: McGraw-Hill.

_____. 1979. Inductive, Deductive. *Informal Logic Newsletter* 2(1):1-5.

_____. 1985. On Theory in Informal Logic. *Informal Logic* 7:119-126.

Weinstein, Mark. 1990. Towards a Research Agenda for Informal Logic and Critical Thinking. *Informal Logic* 12-121-143.

Wellman, Carl. 1971. *Challenge and Response: Justification in Ethics.* Carbondale, IL: University of Illinois Press.

Werkmeister, W.H. 1948. *An Introduction to Critical Thinking: A Beginner's Text in Logic.* Lincoln NE: Johnson Publishing.

Willard, Charles Arthur. 1982. Argument Fields. In Cox and Willard 1982:24-77.

Williams, M.E. 1968. Begging the Question. *Dialogue* 6:567-70.

Wittgenstein, Ludwig. 1953. *Philosophical Investigations.* Tr. G. E. M. Anscombe. New York: Macmillan.

_____.1966. *Lectures and Conversations on Aesthetics, Psychology and Religious Belief.* ed. Cyril Barnett. Oxford: Basil Blackwell.

_____. 1980. *Culture and Value.* Oxford: Basil Blackwell.

Woods, John. 1987. *Ad Baculum,* Self-Interest and Pascal's Wager. In Eemeren, Grootendorst, Blair and Willard 1987a 343-49.

Woods, John, and Douglas Walton. 1972. On Fallacies. *The Journal of Critical Analysis* 4:103-12.

_____. 1974a. *Argumentum Ad Verecundiam. Philosophy and Rhetoric* 7:135-53.

_____. 1974b. Informal Logic and Critical Thinking. *Education* 95:84-86.

_____. 1975a. Is the Syllogism a *Petitio Principii? The Mill News Letter* 10:13-15.

_____. 1975b. *Petitio Principii. Synthese* 31:107-27.

_____. 1976a. *Ad Baculum. Grazer Philosophische Studien* 2:133-40.

_____. 1976. Fallaciousness without Invalidity. *Philosophy and Rhetoric* 9:52-4.

_____. 1977a. *Ad Hominem*. *Philosophical Forum* 8:120.

_____. 1977b. *Ad Hominem, Contra* Gerber. *The Personalist* 58:141-44.

_____. 1977c. *Petitio* and Relevant Many-Premised Arguments. *Logique et Analyse* 20:97-110.

_____. 1977d. *Post Hoc, Ergo Propter Hoc. The Review of Metaphysics* 30: 569-93.

_____. 1977e. Towards a Theory of Argument. *Metaphilosophy* 8:298-315.

_____. 1982. *Argument: The Logic of the Fallacies.* Toronto: McGraw-Hill Ryerson.

_____. 1989. *Fallacies: Selected Papers* 1972-82. Dordrecht: Foris.

Yanal, Robert J. 1988. *Basic Logic.* St. Paul, MN: West.

Yoos, George. 1975. A Critique of Van De Vate's "The Appeal to Force." *Philosophy and Rhetoric* 8:172-76.

Young, Gary. 1974. Authority. *Canadian Journal of Philosophy* 3:563-83.

Other titles of interest from Vale Press in Informal Logic, Critical Thinking and Argumentation.

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