

Practical Logic

An Antidote for Uncritical Thinking



Fourth Edition

Douglas J. Soccio Vincent E. Barry

PRACTICAL LOGIC
An Antidote for Uncritical Thinking
Fourth Edition

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Preface

The prefaces to the second and third editions of *Practical Logic* began by noting a change in the landscape of introductory logic courses. “There was a time when [to paraphrase Gertrude Stein] logic was logic was logic. If two students who had taken introductory logic courses at different institutions chanced to meet, they shared conversational ground. ‘Undistributed middle,’ ‘existential import,’ and ‘truth table’ were familiar landmarks on the landscape of logic. But things have changed.”

Judging by the wide variety of introductory logic texts, the soup of introductory logic courses is even thicker than it was in 1980. Texts range from the comprehensive little-bit-of-everything bibles of traditional intro courses to slim “critical thinking” texts. Introductory logic courses range from those that emphasize “formal” logic—the *science* of logic as it were—to those stressing “critical thinking”—the *art* of logic.

As we hope the new subtitle indicates, this fourth edition, *Practical Logic: An Antidote for Uncritical Thinking*, draws from both approaches. This edition continues the “evolution” of the seeds planted in 1976: hitting the mark between rigor (the science of logic) and accessibility and usefulness (the art of logic). It offers instructors some middle ground between the extremes of a very traditional, formalistic approach and an exclusively informal approach.

In making the difficult decisions of what to include and exclude, what to expand and what to reduce, we have, as in the past, relied on the experiences and advice of pleased and displeased, friendly and hostile, instructors, students, and reviewers. Rather than try to be all things to all people—a hopeless task—we have chosen to improve and refine *Practical Logic*’s most effective and useful features: clear, realistic, relevant, everyday examples; “user-friendly” tone; ample pedagogical aids.

As much as possible, the text remains informal and jargon free. Although a relaxed, easygoing style somewhat signals superficiality, there is no reason that a solid introductory text cannot be interesting, often fun, and even on occasion exciting to read and teach from. That being so, the text is written in a style which respects, but does not pander to, the interests, anxieties, and abilities of today’s increasingly diverse logic students. *Practical Logic* implicitly recognizes that a well-prepared and interested class invigorates teaching.

The principal changes in this edition relate to content and structure from a pedagogical standpoint. Alterations have been made that enhance coherence, clarity, accuracy and thoroughness to the overall text as well as to individual sections. The structure of the text has been streamlined and integrated, whenever possible following an intuitive, natural pattern.

Previous users will immediately note the absence of the material on symbolic logic, scientific method, and Venn diagrams used to test for validity. These changes are part of this edition's refined emphasis on *practical* logic for the "typical" *introductory student*. Most introductory logic students are not philosophy or logic majors. They are a wonderfully eclectic mix of casual inquirers, resistant or frightened undergraduates meeting critical thinking or other requirements, and the occasional exuberant bundle of interest and energy. Philosophy majors, and others majoring in analytical areas, will inevitably be required to take additional more formal logic courses. Most introductory students will not.

The choice facing us as authors who are also instructors is how best to meet the needs of most of our students. In addition to issues of text content, we need—as authors and instructors—to consider text length. How long should an introductory logic text be? We have always been uncomfortable with the little-bit-of-everything texts for a number of reasons. Many of them are stodgy. But even those that are not often contain much more material than the typical course can cover. Thus, students pay substantial prices for texts, and then cover, say, less than two-thirds of them. This seems unnecessary.

We have chosen not to cover a little-bit-of-everything, but cover important, basic logical and critical-thinking concepts and skills in a practical, interesting fashion. Everything we have added or deleted has been scrutinized with an eye toward pedagogy. We have chosen to clarify *Practical Logic's* focus on the immediately *practical* aspects of logic, rather than the more formal and theoretical aspects. Any increases in length are due to added explanations and exercises. The result is a pedagogically superior introductory logic text which might be characterized as a *logical approach to critical thinking*.

One of the most important and notable changes is the new Part One: Arguments and Cases. Chapter 1 "Basic Anatomy" introduces the concept of logical argument in a novel and intuitive way by contrasting arguments with *cases*. Chapter 1 also introduces the concept of *cogency* and identifies three cogency criteria, which recur throughout the text. In addition to creating a running theme throughout the text, the language of cogency avoids the ambiguity which sometimes accompanies the concept of soundness—especially as it relates to inductive arguments.

This new material also avoids one of the most frustrating and common problems facing beginning logic students: distinguishing arguments from nonarguments. The argument–case distinction is a clear and "natural" way of showing the relationship between arguments and context, including rhetorical components and personal factors.

Part Two: Thinking Critically About Arguments distinguishes between critical and uncritical thinking. Chapter 3 "The Public Dimension" retains *Practical Logic's* unique treatment of knowledge (epistemology), but in a greatly streamlined, more

effective way. Chapter 4 “The Personal Dimension” is a tighter, clearer treatment of the important “Personal Dimension” so often given short shrift in other texts. In this edition, we avoid the implication that clear thinking and emotions are somehow “enemies” by stressing what happens when they are divorced from each other.

Chapter 5 “Careless Language Use” is a brand-new treatment of the relation between logic and language. The concept of *doublespeak* is a welcome addition to the critical thinker’s arsenal, and students respond to it with considerable vigor.

Chapter 6 “Inattention to Subject Matter” is a new, refined survey of informal fallacies of irrelevance. Definitions and descriptions have been cleaned up, cloudy exercises deleted, and new, more effective ones added.

Chapter 7 “Sophistries and Pseudoscience” distinguishes between scientific reasoning and the abuse of scientific jargon and trappings using topical, significant, and sometimes amusing examples. Since we included this material in the third edition, students have continually praised it as especially interesting and practical.

In a major structural change, deduction now precedes induction as Part Three: Deductive Arguments. Although deduction can seem initially daunting to students, many instructors report that introducing students to the concept of logical structure before wading into the thicket of induction has pedagogical advantages. Chief among these is the “black and white” character of deduction and the satisfaction that comes from successfully applying mechanical and formal procedures. Placing deduction between informal fallacies and induction gives students a welcome change of pace from the open-ended more “interpretive” art of logic, and allows them to experience the rewards and joys of the science of logic before facing the subtleties of induction.

We have deleted the use of Venn diagrams to test for validity from Chapter 8 “Categorical Syllogisms.” As enjoyable as Venn diagrams are to some people, experience shows that most students quickly evolve to using the six rules of validity exclusively. We have further refined the treatment of deduction by adding a section explaining existential import and a simplified Boolean square of contradiction. Exercises have been polished.

Chapter 9 “Reconstructing Arguments” has been improved with new, more accessible exercises and simplified translation tips.

Chapter 10 “Additional Syllogisms” treats implication, disjunction, and the dilemma in a more direct, intuitive way than the third edition, helping students learn to recognize the formal structure of argument in everyday contexts.

The most significant change in Part Four: Inductive Arguments is Chapter 13, the expansion of the treatment of “Analogical Arguments” to a separate chapter. Additionally, Chapter 14 “Cause” includes a new look at correlation, improved discussion of Mill’s methods, and new examples.

In Part Five: Evaluating Arguments, Chapter 15 “Normative and Nonnormative Arguments” has been considerably streamlined. The third edition’s complex eight-step method for evaluating arguments has been reformulated into a less cumbersome, more intuitive basic procedure. Chapter 16 “The Extended Argument: A Strategy” is essentially unchanged from the third edition.

This edition of *Practical Logic* retains and improves on past editions pedagogical

features: study hints; italicized key definitions; chapter summaries and open-ended summary exercises; cartoons; plenty of exercises with answers at the back of the book; exercises without answers at the back of the book to be used for quizzes and/or homework. A concise and expanded glossary is included at the end of the text, along with an Index.

The Instructor's Manual for this addition includes the solutions to those exercises not answered in the text, suggested readings for each chapter, and a Test Bank. One notable improvement in the Instructor's Manual is a new 8-1/2 by 11 inch format. Besides being easier to read, the new size has enabled us to prepare Chapter Tests in a form that instructors can photocopy and then duplicate virtually as-is for use as formal tests or in-class study aids. These simple, but thorough, basic tests can be great timesavers as stand-alone tests or as supplements to instructor-prepared tests.

Though it is possible to cover the entire text in one term, a complete course can be structured around selected chapters. Critical-thinking courses that involve extended analyses and written assignments might, for instance, delete all of the material on deduction except, say, Chapter 10 "Additional Syllogisms." On the other hand, some instructors prefer to begin with deduction. They need only move from Chapter 2 immediately to Chapter 8. Those who prefer a modified, "traditional" approach might wish to skip some of chapters 3, 4, 7, 15, and 16, substituting handouts covering truth tables and DeMorgan's theorems.

We have tried to make *Practical Logic* flexible enough to be adaptable to a variety of teaching styles. Feel free to pick and choose, skip, amplify, or reorder.

As our list of indebtedness grows, it becomes impossible to acknowledge all those who have had a hand in shaping *Practical Logic*. The list begins with countless students who have resisted, cajoled, and coerced us so that we have had to learn from them about teaching logic. Special thanks to Keith M. Sturges. We would also like to thank the reviewers of this edition: Ronald Burnside, Sinclair Community College; Mark Cobb, Pensacola Junior College; George Gale, University of Missouri-Kansas City; Robert Gall, Sinclair Community College; Alan Moore, Trinity College; Maura O'Neill, Chaffey College; and Carl Oppermann, York Technical College. Special thanks to Theodora Glitsky. Jo-Anne Weaver at Holt deserves credit for her patience and support in the face of confused manuscripts and one sometimes-tardy author with horrible handwriting. Tracy Rogers and Vicki Young also deserve special thanks.

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Part One

Arguments and Cases

Chapter 1

Basic Anatomy

...all our dignity lies in thought. Let us strive, then, to think well.

Blaise Pascal

Do you ever get the feeling that everyone's trying to sell you something?

"I realized my own potential by reading *Dianetics*," you hear an attractive young woman tell you in a television commercial. Then she adds, "Buy it. Read it. Use it."

Before you can digest that pitch, another voice exhorts, "Energize your love life!" It goes on to reassure you that "You can have as much love as you want once you discover how to tap the incredible energy of your inner sexuality!" And to discover how to do that, "You ought to know about a wonderfully helpful new book...."

Bored with television, you open a magazine to find an ad that asks, "Can't find a pair of jeans to fit? Inseams too short? Rises too low?" [If so,] "Try a pair of Wranglers." Opposite that ad is one for Nike shoes that simply says, "Just do it." And on the following pages....

There's no point in going on. Everywhere somebody has something to sell, whether in politics, business, education, religion, sports, or entertainment; you name it, someone has it—a product, a belief, a candidate, a pastime, even a mate. It's little wonder that many today feel angry, confused, and frustrated.

So how do you handle it all? Which of the claims for your loyalty do you accept? Which do you reject as just more blooming, buzzing confusion?

Once asked what it takes to be a successful writer, Ernest Hemingway replied, "A good crap detector." Crude? Perhaps. What he meant was an ability to separate the authentic from the phoney, the real from the illusory, the significant from the trivial, the artistic from the merely clever.

Well, it's not only the writer who needs that capacity. Everyone does—especially today. Lacking it, we can do little more than surrender, go along with our own exploitation—or, perhaps, withdraw from society altogether.