




RICHARD L. PURTILL



A LOGICAL  
INTRODUCTION  
TO PHILOSOPHY



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# A Logical Introduction to Philosophy

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To my students  
who have learned from me  
and from whom I have learned



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# Preface

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Logic was originally developed by philosophers to serve as a tool in dealing with philosophical problems. Logical arguments are still important in philosophy, but on the introductory level, logic and philosophy are usually taught separately and in isolation from each other. This is bad for both subjects. In introductory logic classes, logical principles are applied to trivial examples, and it is hard for students to see the usefulness of logic. In introductory philosophy classes, fairly complex arguments have to be analyzed without the use of logical techniques. Some teachers and a few textbooks try to give a “mini-course” in logic as a preliminary to the introductory philosophy course, and some teachers and textbooks use philosophical examples in teaching logic. Such approaches are helpful, but they do not entirely solve the problem.

In this book I develop and discuss logical principles *along with* an introduction to philosophy so that the two subjects are learned together and cast mutual light on each other. Thus, this book could serve as a text for an introduction to philosophy course *or* for an introduction to logic course, depending on which subject is given more emphasis. The student will be able to see that logic can be applied to some important problems and be useful in solving them, and the student will also have a better insight into the logical structure of philosophical arguments.

Another separation that I find an obstruction rather than a help in teaching logic is the separation between formal and informal (or “practical”) logic. The analysis of the formal structure of arguments is confined to formal logic and separated from such “informal” topics as definition or fallacies. But if we look at actual instances of philosophical argument, we often find “formal” and “informal” techniques mixed. For instance, in Plato’s dialogue *Euthyphro*, Socrates urges Euthyphro to formulate a definition of righteousness then criticize the definition by arguments that can easily be expressed by the machinery of formal logic. However, in the way logic courses are often structured today, definition is discussed in the informal logic or “critical thinking” course and logical argument patterns in the “formal” or “symbolic” logic course.

I begin this book by discussing definition, because definition is a valuable help to clarity, and unless we are clear as to what we are arguing about, we will often be arguing at cross-purposes. I then proceed in Chapter 2 to introduce some simple patterns of argument that can be analyzed by means of propositional logic. My philosophical texts in these two chapters are all drawn from the early dialogues of Plato, where Socrates is often trying to get a definition of a key term such as “piety” or “knowledge” and using simple arguments to reject proposed candidates.

The logical system introduced in Chapter 2 gives proof techniques, but a simple and effective way of mechanically checking arguments for validity is also needed. I have used a cancellation system based on the work of Professor Fred Sommers of Brandeis University, which is far less cumbersome and time-consuming than such techniques as truth tables or “trees.” An extension of this system is used for syllogistic logic, which would not be possible for other methods. The advantages of the cancellation system, you will find, more than compensate for the fact that it is less familiar than more standard techniques.

In Chapter 3 I apply the same methods of analysis to various arguments from Thomas Aquinas and other medieval philosophers. But because syllogistic logic was the distinctive logical system used in the Middle Ages, in Chapter 4 I introduce syllogistic logic, using examples from Aquinas and other medieval philosophers. Chapter 5 shows how a mixed system of statement logic and syllogistic logic can be used to deal with arguments from Descartes and Leibniz.

In Chapters 6 and 7 I discuss the elements of probability theory and the logic of causation. My examples here are taken from David Hume, the great philosophical skeptic and critic of religion.

Chapter 8 is in some ways the most advanced chapter, both philosophically and technically. It covers part of the philosophy of Immanuel Kant and the basic parts of modal logic—the logic of possibility and necessity. However, every effort has been made to make both of these topics clear and understandable, and they are both of great philosophical and

logical interest. Kant's philosophy was clearly influenced by the logic he used, which makes it an especially valuable topic for a book of this kind.

The final two chapters of this text attempt to draw together all of the techniques learned in earlier chapters and apply them to the analysis of extended arguments. Students are shown how to take a philosophical argument, define key terms, identify assumptions, look for fallacies, and analyze formal and informal arguments. They are expected to show validity or invalidity for deductive arguments and assess the strength of inductive arguments. The philosophical texts are taken from a number of contemporary philosophers.

In any given chapter, only short excerpts from individual philosophers are presented. This book could be used in an Introduction to Philosophy class in connection with complete editions of the philosophical texts (available inexpensively in paperback). At the ends of chapters there are a number of exercises on logic drawn from a variety of philosophers. Thus, this book could be used on its own as a text for an introductory logic class or for a formal or symbolic logic class, or it could be supplemented with further exercises such as those found in *Arguments: Deductive Logic Exercises* by Howard Posposel and David Marans (Prentice Hall, 1978).

Logic and philosophy were born together and have pursued parallel careers ever since. But lately they have become separated and even estranged. If this book does something to bring them together again and shows the advantages of using them together, then it will have justified my efforts in writing it and your efforts in reading it and working with it.

My thanks to the Bureau of Faculty Research at Western Washington University for assistance in the preparation of this book, and especially to Gail Fox and to Dabney Bankert who did the typing. Thanks also to Joe Heider, Linda Albelli, and Susan Rowan at Prentice Hall and to my students, my own teachers, and my colleagues who have all, in different ways, helped make this book better.

**Richard L. Purtill**

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# Introduction for Students

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In this book you will be introduced to both philosophy and logic. The philosophical statements and arguments will serve as subject matter for the application of logical techniques, and the logical techniques will help to clarify and organize the philosophical statements and arguments. Thus, you will understand the philosophical material better and learn techniques that can be applied in other areas to make your thinking clearer, more critical, and more organized.

Philosophy is the study of some of the deepest and most fascinating questions that human beings have asked, questions such as “What can we know?” “Is there a God?” “How should we judge right and wrong?” Philosophers investigate these questions by three basic techniques: First, they *analyze* questions and statements to get the clearest possible understanding of each question and statement; second, they *criticize* every statement and assumption, trying to take nothing for granted until it has passed the test of critical questioning; third, they *argue* and examine arguments on both sides of any question, trying to determine on which side the arguments are strongest, or where they must suspend judgment or look for further arguments.

The logical study of definition is especially useful at the stage of clarification, but the techniques that enable us to symbolize arguments and

lay them out in an organized way also help in the analysis of philosophical positions. These techniques are also invaluable at the critical stage, for we can see exactly what is needed to reach a certain conclusion and ask whether each step is justified. By the study of various arguments and how each can be tested, we acquire valuable tools for seeing on which side of a question the arguments are strongest, or where the arguments are inconclusive.

By working through this book with a good teacher you will get a sound knowledge of some important parts of the history of philosophy and of some of the basic techniques of logic. You may be motivated to take other classes to extend your knowledge of philosophy and your mastery of logical techniques. Even if you do not continue your study of logic, the skills you acquire here should help you think in a clearer, more critical, more rational way about problems you face in other areas: your other studies, your work, and your personal life.

Logical thinking is only part of life; sensation, emotion, and aesthetic, moral, and religious experiences all have a part to play in our lives. In certain areas, such as choosing a person to love, there may well be “reasons of the heart” not subject to logical examination. But in many areas of our life clarity, a critical attitude and a search for rational evidence can save us both headaches and heartaches. It is my hope that your study of logic and philosophy with the aid of this book will be interesting in itself and will also enhance your ability to make judgments and decisions that are reasonable and wise. For philosophy is the love of wisdom, and logic is at least one road to wisdom.



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# 1

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## Socrates and the Search for Definitions

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Philosophy in the modern, Western sense really began when a Greek stonemason refused to accept the idea that nobody was wiser than he was. This man, Socrates, was in the habit of discussing ideas with his friends, and one of them was so impressed by Socrates' wisdom that he went to the Oracle at Delphi and asked whether Socrates was the wisest man in the world. The Oracle replied, "No one is wiser than Socrates."

But when his friend returned with the message, Socrates was honestly puzzled. Like most Greeks of his time he believed that the god Apollo spoke through the Delphic Oracle and that although the Oracle was often ambiguous it never lied. But Socrates felt quite sure that *he* was not wise: There were too many things he didn't know, didn't understand. So he began to talk with anyone he could find who had a reputation for wisdom, trying to test the Oracle's statement. He found that statesmen could not explain the political concepts they made speeches about, that poets and artists could not interpret their own works adequately, and that people who did have expertise in some area assumed that this gave them the right to make pronouncements in areas they knew nothing about.

Eventually Socrates came to the conclusion that what the Oracle had meant was that all human wisdom was flawed: that no one was wiser than Socrates, even though Socrates was not wise, because no one was really

wise. The only advantage that Socrates had over others was that he realized his own lack of wisdom and had the humility to admit it.

Socrates could have drawn a skeptical conclusion from all this and simply given up all hope of wisdom. Instead he took the attitude that in recognizing our own lack of wisdom we should try to become wiser. He came to the conclusion that the first step in becoming wiser was to understand the ideas we used and that the best way of doing this was to find definitions for the words that caused puzzlement and disagreement.

Socrates' questioning of those who made claims to wisdom showed up their lack of wisdom, and, not surprisingly, this aroused a good deal of resentment. Eventually, Socrates was brought to trial for questioning the religious ideas of his fellow citizens and for unsettling the minds of the young men who enjoyed arguing with him and seeing him argue with others. In the speech he made in his own defense he told the story we have just retold and explained that he believed it was his duty to continue questioning ideas and to make others question them. He compared the city-state of Athens, where he lived, to a magnificent horse that would be lazy and sluggish if it were not stirred up. He, Socrates, was the horsefly who kept the horse lively by nipping at it!

His fellow citizens voted the death penalty for Socrates, and he died as a martyr to his search for wisdom. But his spirit is embodied in the philosophical enterprise that was carried on by pupils of Socrates, such as Plato, and their pupils, such as Aristotle, for example. The quest for clear thinking about our concepts and for justification of our beliefs by looking at the arguments on both sides of the question has been carried on ever since in the spirit of Socrates and is an important part of what we mean by "philosophy." It is not the whole story, any more than the search for definitions is the whole story about clarifying our thinking. But Socratic questioning and the search for definitions is at least a good place, and perhaps the best place, to begin the study of philosophy and of logic as the method of philosophy.

## **SOCRATES AND EUTHYPHRO**

When Socrates argued with his young friends or with those who had pretensions to wisdom, he often asked them to define a key term, then he examined the definition to see if it was adequate. Shortly before his trial, he met a man named Euthyphro, who regarded himself as a religious authority. Euthyphro was so sure of his own righteousness that he was prosecuting his own father for murder in a complicated case involving the death in captivity of one family servant who was being held because he had killed a fellow servant. Socrates began to question Euthyphro about what

he meant by “righteousness” and “unrighteousness.” (The Greek words mean “right” and “wrong” but also have a religious connotation. I have used the somewhat old-fashioned words “righteousness” and “unrighteousness” because no word in current usage has just those connotations of morality combined with religion.)

Socrates’ motives in arguing with Euthyphro were probably somewhat mixed. Partly he wanted to make Euthyphro think about his own certainty that what he was doing was morally and religiously right. Partly he was exploring what religious Athenians like Euthyphro, some of whom were among his accusers, meant by “unrighteousness,” since the word appeared in the accusations on which Socrates was being brought to trial. And partly perhaps Socrates thought he might have something to learn even from the opinionated Euthyphro.

At the beginning of the discussion Euthyphro tries to define “righteousness” by example; “righteousness is doing the sort of thing I am doing.” But Socrates argues that this is like trying to define “bee” by talking about various kinds of bees; to define the word “bee” we need an account of what all bees have in common, and to define “righteousness” we need an account of what all righteous acts have in common.

Euthyphro eventually defines righteousness as “doing what the gods approve of” and unrighteousness as “doing what the gods disapprove of.” Socrates agrees that this is the right *kind* of definition: It provides a characteristic that all such acts are supposed to have in common. However, is it a truly adequate definition? They must look at the pros and cons.

The first problem that arises is connected with ancient Greek religious belief: The ancient Greeks believed in many gods, and these gods were seen as very human, quarreling among themselves and having love affairs with each other and with mortals. How could the approval of such gods serve as a definition of righteousness and unrighteousness? For what one god approved, another might disapprove, making the same act both righteous and unrighteous.

Even if the gods were unanimous or if there were only one God as in the Jewish, Christian, and Islamic faiths, other problems remain. Is the approval and disapproval of the gods or of God purely arbitrary? If it is not then the gods or God must approve or disapprove actions for some *reason* or *reasons*. And should we not define righteousness and unrighteousness by giving those reasons, rather than by saying it is what the gods approve or disapprove?

Compare this question with the question of defining a “strike” in baseball. In one sense a strike is what the umpire says is a strike, because he is in the best position to know, and his decision is final in disputed cases. But the decision of the umpire is not arbitrary: He has certain standards by which he judges that a thrown ball is a strike. And in defining a strike

in a rule book we describe these standards; we don't say "a strike is what the umpire calls a strike." If the pitcher is trying to throw a strike or the batter is trying to avoid a strike, that would be no help, whereas knowing where the strike zone is, its dimensions, etc., would be useful to both pitcher and batter.

Similarly, Euthyphro needs to think about whether his prosecution of his own father is really an act of righteousness, and Socrates needs to know what the Athenians think they are accusing him (Socrates) of. Euthyphro doesn't claim that a god has directly revealed his approval of Euthyphro's action: Socrates' accusers don't claim that the gods have directly revealed their disapproval of Socrates' actions. So what standards does Euthyphro appeal to that make him so sure the gods approve his action? What standards do Socrates' accusers appeal to that make them sure that the gods disapprove of what Socrates has been doing?

It is easy to sit back and enjoy Euthyphro's discomfort as Socrates presses his objections to each new attempt by Euthyphro, but it is much harder to come up with a definition of our own that would stand up to Socratic questioning. Eventually, Euthyphro makes an excuse to leave Socrates without ever having come up with a good definition. This should raise the question in his mind, "If I can't even define 'righteous' how can I be so sure that what I am doing is righteous?" When Socrates comes to trial his accusers cannot answer his questions about what their accusations mean either, but they are angered by this rather than stopping to think of how they can be so sure that what Socrates is doing is wrong.

Obviously the issues raised by Socrates go beyond questions of definition in a narrow sense; even if dictionaries had existed in Socrates' time, Euthyphro and Socrates could not have answered the questions at issue between them by looking up "righteousness." What is really at issue is clarifying a whole way of thinking about morality and its relation to religion. But getting as clear and general an account as possible of the meanings of key terms is a good start on this enterprise.

## **PROBLEMS OF DEFINITION**

In the centuries since Socrates' death, philosophers have given a good deal of thought to the subject of definition. Different kinds of definition have been recognized, depending on the purpose for which the definition is needed. Sometimes it is allowable to simply lay down conditions for something to be called by a certain name or recognized as a member of a certain class. The laws define what an "eligible voter" is in a given election. A community trying to restrict access to parks or beaches to community residents only may have to lay down somewhat arbitrary conditions for what



counts as a “resident.” Such definitions do not explore or explain actual usage; they are what we call *stipulative* definitions. They have their uses, but they are seldom what we need in philosophical argument, where we need to clarify the concepts people actually use.

Another kind of definition is *persuasive* definition, which has some relation to actual usage but is slanted in a certain direction. In a time of dispute about national policy one group may define “good citizens” as ones who *always* defend their country’s policy, whereas an opposing group may define “good citizens” as those who are prepared to criticize their country’s policy. Probably a satisfactory analysis of “good citizen” would include the idea of supporting one’s country’s policy in some circumstances and criticizing it in others. To be convincing, persuasive definition must contain *some* of the truth; to persuade, it leaves out some of the truth also. Persuasive definitions are almost never useful in philosophy.

What we usually want and need in philosophical discussion is an *analytic* definition that gives a *clear, informative, and general* account of the way a word or phrase is *actually used*. The traditional “rules” for definition grow directly out of these requirements. Because a definition must be clear and informative, we do not want definitions that use obscure or unfamiliar terms, and we are not satisfied with a mere metaphor or comparison. We also want a positive account, for saying what something is *not* rarely gives us much information as to what it *is*. Nor will a definition be informative if it is *circular*, that is, if it uses in the definition the very word we were supposed to be defining or some synonym of that word or a word so closely linked with the original word that it will not be understood if the original word is not understood. We also want a definition to give an important characteristic of the thing defined, not some characteristic that only that thing happens to have, but which does not tell us anything about what makes that thing unique. (Human beings are two-legged creatures without feathers, but if a chicken lost all its feathers that would not make it a human being.)

These requirements give us our first four rules:

1. A definition must not be obscure or metaphorical.
2. A definition must not be negative if it can be positive.
3. A definition must not be circular.
4. A definition must not use a merely accidental characteristic of the thing defined.

The formal requirements for definition are merely expansions of what we mean by saying that definition must be *clear, informative, and general*. The generality requirement also shows that attempting to define something by merely giving examples is not satisfactory for analytic definition: The examples are not a definition but merely the raw material of definition.