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### 'Argument' and 'Logic' in Logic Textbooks

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**Title:** ‘Argument’ and ‘Logic’ in Logic Textbooks

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**Response to this paper by:** Maurice Finocchiaro

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This paper reports the findings of an investigation into the conceptions of logic, argument and related concepts to be found in a number of English-language logic textbooks published over the last half-century, and it offers an analysis of the findings.

### ***1. Motivation***

The study was motivated by a phenomenon I have noticed over the past 20 years. I have been involved in the hiring of instructors in a Philosophy department to teach courses in reasoning or critical thinking, and courses in informal logic or argumentation. These are not logic courses. (My department has a logic course and we also often hire instructors to teach it.) The candidates for these jobs are almost all young Ph.D. candidates or fresh Ph.D. graduates. They have been given quite a free hand in the design of their courses, bound only by general university calendar descriptions.

With the logic course the situation has been unremarkable. The young instructors select one of the many excellent introductory logic textbooks and off they go, teaching, as the calendar description has it:

... propositional logic as well as an introduction to the basic concepts of predicate logic. Topics include the construction of symbolic representation of sentences in natural language, semantic methods for evaluating symbolic formulas, and methods of constructing deductions or proofs. (University of Windsor Undergraduate Calendar, Philosophy 34-262)

However, with the reasoning or critical thinking, and argumentation, courses we encounter the following phenomenon. The instructors for *those* courses tend to teach the following course contents: propositional logic and an introduction to the basic concepts of predicate logic, the construction of symbolic representation of sentences in natural language, semantic methods for evaluating symbolic formulas, and methods of constructing deductive proofs—virtually the same subject-matter as is taught in the logic course. Why? Why do these young Ph.D.s teach *logic* in courses that are supposed to be about *reasoning* or critical thinking, and about *arguments*?

One answer might be that, like everyone else, they teach what they know, and when it comes to these subjects, all they have learned is logic. In my experience it is true that they only know logic, so I have no doubt there is truth to this explanation, but I thought there might be a deeper reason. I suspected that they teach logic when they teach reasoning, critical thinking and argumentation because they honestly believe that the subject-matter of logic is reasoning, or critical thinking, or argumentation, or all of them together.

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<sup>1</sup> I wish to acknowledge the major contribution to this study of my research assistant, Janet Sobocan. Jan collected much of the data, combing through the logic textbooks and producing a couple of pages of single-spaced quotations of definitions and exposition of the key concepts from each one. Her work was funded by a Province of Ontario student Work-Study grant and the University of Windsor, for which I am grateful.

## **2. Hypothesis**

Some might say that this belief is true. As we will see, there is a narrow sense in which it is indeed true, though I shall argue that broadly-speaking it is false. However, let us set aside for the moment the question of whether the belief is justified and concentrate first on the issue of its genesis. It is my hypothesis that these young Ph.D.s have been led to the belief that the subject-matter of logic is reasoning and argumentation because that is what they have been taught—in the logic courses they themselves have recently completed.

## **3. Methodology**

My hypothesis is empirical. One way to test it would be to carry out a study of logic courses. Lacking research skills, or resources, I sought some alternative testing method. It occurred to me that an examination of the logic textbooks used in such courses would serve the same purpose. Moreover, if the pool of textbooks examined were to go back 40 or 50 years, it would reveal not only the conception of logic's subject-matter taught to recent philosophy Ph.D. students, but also the conception of logic that was taught to *their* logic teachers.

The study's initial scope was logic textbooks published in English during the last 50 years. Limited time and resources prevented an exhaustive search of all such textbooks, so the study can claim to be no more than suggestive. Thirty-one textbooks were examined, with editions ranging from 1954 to 1994 (see Appendix A for the list). The examination consisted of a search through the introductory chapters and the index of each textbook for references to 'logic' and definitions of it and accounts of its subject-matter, as well as for references to 'argument,' 'reasoning,' 'inference,' 'implication,' and 'entailment' and definitions or descriptions of them.

## **4. Findings**

### *(a) Overview*

A cursory examination might suggest greater diversity in the accounts of logic than is to be found upon closer study. Some texts say logic is the study of arguments, others say it is the study of reasoning, and yet others describe its subject-matter in a variety of other ways. It turns out, however, that many of these texts treat arguments and reasoning as functionally equivalent. There are some genuine differences among the texts, but the vast bulk of them give accounts that are substantively roughly logically equivalent, even if there is a wide range of different terminology.

It is noteworthy that, following the introductory sections or chapters with their obligatory accounts of the subject-matter of logic safely behind them, the textbooks settle down to teach much the same thing. They are consistent with one another in the details of logic that they convey, although they use different approaches (the varieties of which are not our concern). In other words, there is no discernable disagreement about the mechanics of logic, although there are significant disagreements in the optics of the different stories about logic.

It is also clear that the concept of argument that is used in the logic textbook accounts of their subject-matter is, with rare exceptions, technical and abstract, although a number of the textbook authors do not identify it as such, thus leaving the impression that they are using

'argument' in a non-technical, full-bodied sense. Others acknowledge that they are using 'argument' "in the logician's sense," but then proceed as if the properties of such arguments match the properties of arguments of a non-technical, full-bodied kind.

*(b) Details*

First, a warning. We should not hold the introductory textbook authors strictly to their accounts of logic as they have explained its subject-matter to students, for their goal is pedagogical, not scholarly. The same courtesy should be extended to their accounts of argument and reasoning. The authors are trying to communicate their points effectively, so they must be permitted liberties in the sacrifice of precision and strict accuracy. One cannot, indeed one should not, in an introductory textbook, do and say everything needed for a complete and careful account of a subject. As well, in what follows I am going to quote only very short excerpts for illustrative purposes, leaving behind the elaborations and qualifications that tend to be found in the passages from which the excerpts were taken. That said, for the purposes of this study, what is significant is what these authors have written.

*(1) The nature of logic, as explained in the logic textbooks*

The declared views about the nature of logic to be found in the texts surveyed can be roughly divided into four groups. Some characterize logic as (a) the study of the standards or norms that permit distinguishing (logically) good and bad arguments. Copi is typical of this group: "Logic is the study of the methods and principles used in distinguishing correct (good) from incorrect (bad) arguments" (Copi 1967, 1). Other authors see logic as (b) the study of the standards or norms of reasoning: "Logic is the study of the principles of correct reasoning" (Johnson 1987, 1). Yet others explain that logic is (c) the study of the *structure* or *forms* of good or valid reasoning, inference or argument. Here is how Angel (1964, 1) tells this story: "'[L]ogic' could be defined in several ways. . . . we have chosen to restrict the word 'logic' to the study of formal patterns of statements, arguments, and systems, following the tradition of Aristotle and modern symbolic logicians." And a very few take logic to be (d) the study of certain kinds of *relations* (logical relations) between statements, sentences or propositions. This is what I take Hodges (1977, 1) to have in mind when he says, "Logic can be defined as the study of consistent sets of beliefs."

These four types of characterization are illustrated by the quotations in Appendix B ("Documentation"). While some might disagree with where I have placed this or that author, I think the four groups are fairly clear. Note that some of the authors use the term 'inference' to mean what others might call "implication," whereas some use it to denote a process of reasoning. For reference, I have identified all the authors that I have classified in each group in Appendix B.1 along with, from each author, a short quotation that I think typifies the approach in question.

*(2) The nature of argument, as explained in the logic textbooks*

The majority of the authors surveyed (19 of 31) take arguments to be ordered sets of statements, or sentences or propositions.

For the majority of these, a property of such sets is that they are intentional objects: someone believes or assumes or asserts that one of their members is related to the rest in a certain way—as following from them, or implied by them, or supported by them. Typical of this group are Georgacarakos and Smith (1979, 6), who say that an argument is “a sequence of statements, one of which (called the conclusion) *is supposed* to follow from the others (each of which is called a premise)” (my emphasis). This quotation is also typical in its use of the passive voice to express the intentionality involved. With only a couple of exceptions, the authors who characterize arguments as intentional objects express the human intentionality involved using the passive voice. I come back to this point later.

Some authors describe arguments as ordered sets of statements, sentences of propositions without any reference to human intentions. For them, logic is interested in the possible relations among the members of such sets, whether these are intended by anyone or not. I take this to be the view of Kalish and Montague (1964, 13) when they say: “An *argument*, as we shall understand it, consists of two parts—first, a sequence of sentences called its *premises*, and secondly, an additional sentence called its *conclusion*. In the case of a valid argument, the premises constitute conclusive evidence for the conclusion.”

The accounts of argument can be classified in another way. Quite a few of them say either that argument is reasoning, or else that it is the expression of reasoning. Here are examples of these two variants. First, the identity view: “roughly synonymous with ‘argument’ . . . (a piece of) reasoning” (Yanal 1988, 5); second, the representation view: “Arguments, then, are the expressions of processes of reasoning” (Terrell 1967, 10). Hence, any of these authors who say that the subject-matter of logic is *argument* are not to be distinguished from those of them who say its subject matter is *reasoning*.

A small minority of the textbooks examined characterize argument as reasons, evidence or proof. Here is Hacking (1972, 5): “An argument is opinions or reasons for thinking a statement true, or false.”

### (3) Reasoning and inference, according to the textbooks

Reasoning is characterized as a process of thinking (Barker, 1985)—a psychological activity (Copy, 1967)—and more particularly, as a process of inference (Baum, 1981). An inference is, for some authors, a mental activity (Angell, 1964), whereas for others the word ‘inference’ is used as a synonym of ‘implication,’ as when Pollock (1969, 2) says, “Intermediate inferences are the steps of an argument between the premises and the conclusion.” Pollock is not referring to mental acts, but to the relationships among premises. But when authors say that logic is about reasoning, they mean that it supplies the standards for good or valid reasoning, and they take pains to be clear that its subject-matter is not empirical, but normative.

### (4) References in the textbooks to other senses of ‘argument’

The textbooks for the most part (but not in every case) draw attention to the distinctiveness of the sense of ‘argument’ of interest in the study of logic. Many contrast that concept with

arguments understood as quarrels or disputes. The following passage from Georgacarakos and Smith (1979, 2) is typical:

First, let's explain what we don't mean by *argument*. One thing we don't mean is a dispute, or a difference of opinion, or a disagreement, even though it is perfectly good English to apply the word *argument* to such situations.

Among the other authors making the same or a similar distinction are: Angell 1964, Gensler 1989, Harrison 1992, Mendelsohn and Schwartz 1987, and Terrell 1967.

As far as I was able to discover in the sample of textbooks examined, almost no other sense of 'argument' besides quarrels or disagreements is mentioned in contradistinction to the logician's sense. Copi is the exception, though he does not go beyond the statement that, "In ordinary usage the word 'argument' also has other meanings, but in logic it has the technical sense explained" (1967, 3). Many of the authors do, like Copi, indicate that their sense of 'argument' is a technical or specialized sense. See for example: "in the context of logic, an argument is defined as . . ." (Baum 1981, 87); "an argument, in the sense that concerns us here, . . ." (Hodges 1977, 53). Others indicate that they are offering a stipulation by using such phrases as, "in our definition of argument . . ." (Georgacarakos and Smith 1979, 91). But others introduce their preferred sense of argument as if it is the only one. Here is a typical instance: "An argument is a sequence of two or more statements and a claim," (Carney and Scheer 1980, 345)—no qualification, no indication that there are other concepts of argument. It would not be surprising if the readers of these textbooks came away with the impression that argument in the logical sense, and quarrel, exhaust the possibilities—that there are just the two types of argument: squabbles, and the arguments logic is concerned with. And the readers of some of these textbooks will find in them no hint at all that 'argument' has *any* other senses besides the one introduced in their textbook.

(5) *The functions or uses of arguments, according to the textbooks*

Most of the textbooks take the kind of argument or the kind of reasoning that logic is concerned with to be argument or reasoning that functions to prove or support a claim. This proposition is expressed in a variety of ways, or which the following are a sample (I have added the italics to highlight the salient parts of the statements):

[Argument] will always be used in the sense in which we speak of a certain set of reasons, offered *in support of* a given conclusion. (Angell 1964, 4)

The person is claiming that the premises would support the conclusion, would make it reasonable to believe. (Barker 1985, 7)

An argument may be defined as any group of propositions of which one is claimed to follow from the others, which are regarded as supplying *evidence for the truth of* that one. (Copi 1967, 3)

An argument consists of a set of statements in which one or more statements are put forward as *reasons for accepting another statement as true*. (Churchill 1986, 14)

An argument is involved in *reasoning with* someone, *convincing* someone of something, or *persuading* someone to believe something. (Georgacarakos and Smith 1979, 2. By the way, as quoted above, the same authors say that they don't mean by *argument* "a dispute, or a difference of opinion, or a disagreement" (*ibid.*). It is puzzling to me how it is possible to convince or persuade someone without starting out with a difference of opinion or a disagreement.)

You should be able to give *OPINIONS/REASONS for thinking* that [a statement you do not believe] *is false*. You should be able to produce some kind of argument. (Hacking 1972, 5)

An argument, in the sense that concerns us here, is what a person produces when he makes a statement and gives *reasons for believing* the statement. (Hodges 1977, 53)

An argument, as it occurs in logic, is a group of statements, one or more of which (the premises) are claimed to provide *support, or reasons to believe*, one of the others (the conclusion). (Hurley 1994, 1)

An argument is a set of statements in which one, called a conclusion, is claimed to be either the consequence of or to *be justified by* the others, called variously *evidence, reasons, grounds*, or premises. (Manicas and Kruger 1968, 8; boldface omitted)

An argument is a collection of statements, one of which, the conclusion, is the statement being argued for, and the rest of which, the premisses, are the *reasons put forward to justify* the conclusion. (Mendelsohn and Schwartz 1987, 156)

Argument serves at least three goals: (1) to *EXTEND OUR KNOWLEDGE*, (2) to *PERSUADE*, and (3) to see what consequences follow if we make certain assumptions (*HYPOTHETICAL REASONING*). (Yanal 1988, 5)

In sum, for many of the textbooks, argument is presented as having an *epistemic* function: arguments are seen as serving to supply reasons for believing a statement or proposition. For others, it has an *alethic* function: arguments are seen as serving to establish the truth of a statement or proposition—to justify or prove it. For a very few, argument is described as having a *rhetorical* function: it serves to bring others to agree, or to share in a belief. I do not mean to suggest that the various authors have carefully considered the differences among these functions. On the contrary, I expect that for practical purposes most of them would be inclined to treat these different formulations as roughly equivalent. However, strictly speaking, the norms for each of these three functions differ considerably.

#### 4. Discussion

It is striking how various are the accounts of logic and argument in the logic textbooks. Gerald Massey has said that "a highly articulated, well-understood theory underpins" the chapters or units "on sentential logic or quantifiers or even syllogistics" in the textbooks (Massey 1995, 160), and he is right. But apparently there is no such highly articulated, well-understood philosophy of argument, for the textbooks are all over the map when it comes to explaining the

subject-matter of logic, or to defining such a central concept as that of argument. Or, perhaps there is a consensus to be found in the journals and scholarly tomes, and the textbook authors have simply not done their homework. Whatever the explanation, the statements about logic and the definitions of argument vary considerably in the logic textbooks examined in this study.

However varied the details, though, when it comes to the perspective of logic, the conceptions of argument share significant properties, as we have seen. For the purposes of teaching logic, in virtually all the textbooks arguments are taken to consist of ordered sets of statements, sentences or propositions. And what is of logical interest in arguments so conceived is their validity, which is to say, the logical relation of implication or entailment between different sets of statements (sentences or propositions).

When it comes to this norm of *logical* interest, validity, the various functions of arguments mentioned—the epistemic, the alethic and the rhetorical—have no relevance whatever. One's argument is *logically* good, that is, valid—or not—completely independently of the function to which it is being put. And its logical validity or invalidity might have no bearing at all on whether it is serving its epistemic, alethic or rhetorical function well. As Jeffrey notes (1981, 10):

The aim of argument need not be demonstration of the truth of the conclusion, for as we have seen, argument by *reductio ad absurdum* aims rather to demonstrate falsity of at least one of the premises by deducing from them an obviously false conclusion. And in other cases where the conclusion of a valid argument is hard to believe, logic is far from demanding that we swallow doubts and accept the conclusion as demonstrated. An equally logical response is to scrutinize the premises, in the expectation that the astounding inference is unsound.

Prior puts the point this way: "Logic is commonly thought of as having something to do with argument . . . . It should be noted, however, that the 'goodness' of an argument from the logical point of view ('validity' is the technical term) does not lie in its conclusion's being true" (1962, 1). In other words, while the subject matter of logic is nominally arguments, that is, sets of statements used for epistemic, alethic or rhetorical purposes, it is more precisely *the validity of* arguments that logic is interested in.

Now let us put this point together with the sense for the small range of senses of 'argument' with which these textbooks leave the student. If logic is about arguments, and if, verbal fights aside, arguments are sets of statements used to support beliefs or to show statements to be true, then it would make sense to teach the logical virtue of arguments in argumentation courses. Doing so requires teaching logic. And if arguments and reasoning are, if not identical, then either reducible one to the other or at least closely related, then a course teaching critical thinking—that is, good reasoning—will be a course that teaches the norms of good arguments, namely, a logic course. Finally, since from a logical point of view the functional differences between epistemic, alethic, dialectic or any other uses of argument are not pertinent, it will be appropriate to teaching validity, possibly plus premise truth, as the sole norm(s) of good argument.

An examination of the logic textbooks does, then, offer some support for the hypothesis that young instructors who have recently taken a logic course in fulfillment of their Ph.D. requirements, using one or another of the logic textbooks on the market, and taught by instructors themselves schooled by similar textbooks, will consider it correct and fitting to teach logic as the content of a critical thinking or an argumentation course.



## 6. Critique

It is now possible to see in what sense it is true that the subject matter of logic is reasoning or arguments. If the result of expressing reasoning in language is an argument or arguments, and if the subject matter of logic is arguments, then since reasoning must be expressed in order to be accessible for appraisal, logic will apply to reasoning so expressed. And if the subject-matter of logic is the validity of the relationships among sets of statements, then if arguments are conceived as such sets of statements, clearly the subject-matter of logic in a general sense is arguments so conceived. Understanding the salient terms in these ways, there can be no disagreement that logic is about reasoning and arguments.

However, the claim is not plausible if a fuller or richer sense of 'argument' is used. Consider arguments as they are employed in a wide range of situations in daily life. What I have in mind are arguments used in such contexts as the following:

arguing for or against an action or a policy or a decision (such as hiring a candidate for a job or introducing or canceling a course or program in a university setting, or a new product line or an advertising campaign or financial backing by one's bankers in a business setting, or going to Arizona instead of Florida for a winter vacation in a household);

arguing for or against the legal guilt of an accused in a criminal trial;

arguing for a particular outcome in a business negotiation, in a civil suit, or in labor-management bargaining;

arguing in the pursuit of political office—arguing for the electoral support of the voters, or arguing against the person or policies of one's opponent(s);

arguing for a thesis in a scholarly paper, such as this one;

arguing for or against an evaluation (be it of a consumer product, a program, personnel, the effectiveness of a policy, a work of art, or whatever);

arguing for a fact or a construction upon the facts (for example, when one argues that global warming is, or is not, a pressing problem, or that pollution abatement programs are working, or that the bird singing by the lakeshore is a Yellowthroat warbler).

In all such uses, argument is richer or fuller than a set of statements or propositions, in at least the following respects.

(1) Who the arguer is makes a difference in such contexts. We have seen that some of the textbooks allude to the presence of an arguer by making reference to someone's intention that some statements support or justify or prove another (or be taken so to do) in the set under consideration. But the identity of this person is irrelevant to the narrow sense of argument from the logical point of view, which is indicated by the textbook authors' use of the passive voice when referring to the arguer. However, in such contexts as the ones just listed, the legitimacy or appropriateness of the argument can be a function of who is making it. For example, conflict of interest rules disqualify some potential arguers, procedural rules prescribe and proscribe arguers

in other settings, and one's history or track record or reputation can appropriately affect the credibility of one's argument.

(2) Who the audience or interlocutor is makes a difference. The nature of the audience can impose constraints on the argument. The audience's beliefs and interests will render some arguments useless or counterproductive, and will make it imperative to include other arguments to address certain points. Logically sound arguments that persuade one interlocutor might not persuade another, due to differences in their beliefs about the arguments' premises. Or again, if one has ten reasons for a proposal and the audience has been won over by the first five, it is superfluous—and potentially counterproductive—to tax its patience by slogging through those remaining.

This point implies no abandonment of moral principles. Sophistry of the sort that Plato railed against is not required. One might know of two excellent reasons for doing something, and, with an eye to their effectiveness, yet impeccable moral integrity, use one to persuade one person and the other to persuade a different person.

(3) The setting of the argument will similarly impose substantive and procedural requirements. A letter to the editor of a newspaper might have to be limited to 300 words if it is to be published, which severely limits the thoroughness of any arguments used. It would be a mistake to assess such arguments as if their author had the opportunity to develop them fully. In certain parliaments (e.g., Canada) it is prohibited to accuse a member of lying, so arguments to that effect, or with such a premise, are out of court. A committee without budgetary powers cannot approve or disapprove funding requests, so arguments designed to persuade it to do so are simply out of order. And so on.

(4) The role of an individual argument in the larger setting of making a case will affect the norms relevant to its appraisal. For instance, one argument might be designed just to establish a presumption, another, to shift the burden of proof. Such arguments can be evidentially weaker than arguments designed to conclusively establish the truth of a statement. Or again, an argument might have the role of refuting an objection, and as such should not be taken to be supporting the thesis directly. In other words, understanding the dialectical function of an argument—its role in responding to objections, counter-arguments, or arguments for alternative positions—will be important to its assessment.

(5) The structure and language of arguments can make a difference to their persuasiveness. Is the interlocutor likely to be more open to considering one's case if one begins with a refutation of her favored view or if one begins with positive arguments in support of an alternative position? Will the choice of certain words (calling abortion "murder," for example), or of certain metaphors (comparing large-scale injustice to the Holocaust, for example), help or hinder one's cause by gaining the sympathy or raising the ire of one's audience?

(6) Considerations of face, or of relationship-maintenance, need to be considered when formulating arguments. If the style or substance of the argument insults, shames or intimidates the interlocutor, she will resist conceding the point, no matter how strong the evidence. If remaining on polite or collegial terms with the interlocutor is important for future relationships, then the use of certain arguments, or certain kinds of argument, or certain styles of argument, might be ruled out. If argument is used for purposes of debate, or stylized quarrel, a "winning" strategy might be to fluster the opponent, or reduce him or her to self-contradiction. (Think here

of "Question Period" in the British parliamentary system.) But a parent using such an argumentative strategy with a child quickly alienates the audience, and loses any chance of persuasion. Argument is a form of communication, and communication is multi-functional. The advocate or critic who overlooks this fact does so at his or her peril.

(7) The primary goal of an argument might be to weaken or strengthen the audience's adherence to a point of view, rather than to convince the audience for all time of its falsity or its truth. In such contexts, arguments that fall short of a decisive demonstration might well succeed in achieving their purpose. The standards of "good" and "bad" argument even from the narrow perspective of cogency seem thus to be relative to the purposes of the argumentation. In other cases, "cogency" narrowly conceived is not an appropriate criterion. Think of an argument aimed at resolving a disagreement. In some contexts that purpose might best be achieved by negotiation with the interlocutor rather than by proving a point.

I expect this list could be extended, but I hope it is by now clear that in any number of contexts, when using and evaluating arguments the logical relations between the premises and conclusions of units of argument will be just one of a large number of factors that ought to be considered. This is true even if one holds that validity is a necessary condition of virtue in any argument, a position denied by those who take the position that an argument can be inductively or presumptively strong even when invalid. Anyone who claims to teach the norms pertinent even just to the assessment of arguments in the fuller sense that I have been illustrating must do much more than teach how to assess validity. Logic is concerned with none of the features of argument to which I have been drawing attention. In arguing for this thesis, I am not, emphatically, arguing against the teaching of logic. What I am arguing for is that by no stretch of the imagination can one teach how to assess full-bodied arguments by teaching logic alone.

## 7. *The Philosophy of Argument*

The philosopher and argumentation theorist, Trudy Govier, recently published a collection of her papers under the title, "The Philosophy of Argument" (Govier, 1999). Govier's title merits attention.

What is "the philosophy of" something? One answer is that it is a conceptualization of that thing, a way to understand it. A "philosophy of language" or a "philosophy of art" is a way of understanding language or art. To be sure, the phrase 'a way of understanding' and the word 'conceptualization' are only slightly less vague than 'philosophy of.' What I have in mind by the "conceptualization" of something—let's say, of art, to use an example—includes such things as *what we take to count as art*; what its *defining properties* are; what *distinguishes* art from what might be confused with it, such as kitsch; or *related* to it, such as "folk art"; what *its divisions* are, such as visual art, sculpture, perhaps architecture, and so on; how it is to be interpreted—a *hermeneutics* of art; what are the *criteria for evaluating art*, for distinguish good from bad art; what *its media* are, such as oils, watercolors, metal, stone, mixed-media, and so on; what *the implications of this or that way of characterizing art* are, such as what *its social roles* are or might be, or what *its value* is.

If "the philosophy of argument" is a way of conceptualizing it in this sense, it seems fair to say that the philosophy of argument does not constitute an established field within the general discipline of philosophy at the present time. There are in philosophy no academic journals by

that title, no university courses, no program of study, no monographs, no program area at American (or any other) Philosophical Association meetings, no learned society, no recognized Area of Specialization. There is in philosophy no body of systematic study in the discipline of the philosophy of argument.<sup>2</sup> Given that argument seems essential to philosophical methodology, the paucity of philosophical reflection about the nature of argument is nothing short of astounding, but the fact is that, unlike art, biology, culture, economics, history, logic, music, nature, science, and sport (among others), within philosophy argument has not been the subject of extended or systematic philosophical investigation.

It is perhaps little wonder, then, that young philosophy Ph.D.s coming out of graduate school have no better theory of argument than the conception of argument that they learned in their logic courses, and are not prepared properly to teach the analysis, evaluation and construction of full-bodied arguments.

At the same time, the kinds of issues that would need to be addressed in formulating a philosophy of argument are in fact being addressed in various corners of scholarly activity that is carried on under the rubric of “argumentation theory,” and in particular in the work of so-called “informal logicians.” As a descriptive term, ‘informal logic’ is a misnomer, and unfortunately it has misled some who ought to know their philosophy of language better than to take labels literally. But a fair amount of attention has been given to the tasks of (1) defining or analyzing the concept of argument, (2) identifying its properties, such as rationality, (3) identifying its elements, such as logic, dialectic, rhetoric, or speech acts, and their roles and relationships, (4) identifying its various species or types, (5) developing a hermeneutics for argumentation, (6) identifying the criteria for its evaluation, (7) distinguishing argument from related phenomena, such as non-argumentative persuasion, (8) considering the medium of argument—whether arguments can be expressed only in language, or whether, for example they can be expressed visually as well, (9) considering the social roles of argumentation and its value. From the point of view of teaching about argument, as well as from the point of view of developing philosophical theories of argument and argumentation, it is time for the practitioners of the discipline of philosophy to attend to and develop further the philosophy of argument. That means, for starters, that they need to inform themselves of the pertinent “argumentation” and “informal logic” literature. They can then join the conversation already well begun there. At the same time, the philosophers who identify themselves as working in informal logic need to follow Govier’s lead and view their work from a broader perspective than they have hitherto been doing.

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<sup>2</sup> I can imagine Govier (1987), and Freeman (1991), and Gilbert (1997), and Tindale (1999), Johnson (1999) and Walton (e.g., 1896) taking issue with this claim. I would concede at once that their monographs belong to what should be called the philosophy of argument. However, until Govier self-identified with the title of her recent collection of papers, none of them wrote of herself or himself as working in the philosophy of argument. In fact, the works that most self-consciously belong to this genre are the monographs of van Eemeren and Grootendorst (1984, 1992) and of Willard (1983, 1989), none of whom is a professional philosopher.

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**APPENDIX A – LOGIC TEXTS EXAMINED IN THE STUDY**

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## **APPENDIX B – DOCUMENTATION**

### **B.1 CONCEPTIONS OF LOGIC**

#### **B.1.a Logic as the study of the norms of arguments**

“Logic is commonly thought of as having something to do with . . . the discrimination of good arguments from bad” (Prior, 1962); “is concerned with arguments, good and bad” (Kalish and Montague, 1964); “the study of the methods and principles used in distinguishing correct (good) from incorrect (bad) arguments” (Copi, 1967); “A study of the principles of inference and the evaluation of argument” (Manicas and Kruger, 1968); “the assessment or criticism, of all types of arguments” (Alexander, 1969); “the study of arguments. In logic we try to say what makes an argument a good argument” (Pollock, 1969); “one aim of logic is to tell good arguments from bad ones and to discover what makes some arguments good and some arguments bad” (Hacking, 1972); “the study of valid arguments” (Hodges, 1977); “logic begins with the

study of arguments” (Georgacarakos and Smith, 1979); “primarily the study of arguments and of methods to determine whether arguments are correct or incorrect” (Carney and Scheer, 1980); “Logic is used both to *evaluate* arguments and to *clarify* them” (Lambert and Ulrich, 1980); “in large part, the study of arguments and . . . the conditions under which we are justified in believing a conclusion” (Churchill, 1986); “logic is the study of arguments” (Johnson, 1987); “Logic is the study of arguments. More precisely, logic is a set of rules to determine whether an argument is good or bad.” (Yanal, 1988); “the analysis and appraisal of arguments” (Gensler, 1989); “the study of criteria determining good and bad arguments and the practice of applying these criteria to specific arguments” (Harrison, 1992); “the science that evaluates arguments” (Hurley, 1994).

#### B.1.b Logic as the study of the norms of reasoning

“Logic is about reasoning, but only that form of reasoning in which support is offered for a belief as to what is true or false, . . . . Logic has to do with the critical evaluation of reasoning.” (Terrell, 1967); “seeks to set the standards for the ways people reason if they wish to reason well” (Baum, 1981); “the critical study of reasoning” (Barker, 1985); “the study of the principles of correct reasoning” (Johnson, 1987); “distinction between ‘good’ and ‘bad’ lines of reasoning . . . is the main part of the subject matter of logic; concentrates on the . . . distinction between those lines of reasoning which are bound to lead to what is true if they start from what is true” (Myro, Bedau and Monroe, 1987).

#### B.1.c Logic as the study of the forms or structures of reasoning, inferences, arguments

“Formal logic is the study of the structures of propositions and deductive inferences” (Hughes and Londey, 1965); “‘logic’ could be defined in several ways. . . . .we have chosen to restrict the word ‘logic’ to the study of formal patterns of statements, arguments, and systems, following the tradition of Aristotle and modern symbolic logicians.” (Angell, 1964); “The principal task of deductive logic is to provide the method for distinguishing deductively valid argument forms from deductively invalid argument forms” (Kahane, 1986); “Logic studies forms of reasoning” (Gensler, 1989).

#### B.1.d Logic as the study of (logical) relations between sentences, statements, propositions

“The subject-matter of logic is the relations of logical forms and sequences” (Beach, 1970); “Logic is concerned with what follows from what” (Hacking, 1972); “the structure of inferences” (Kaminsky and Kaminsky, 1974); “logic concerns what can legitimately be inferred from what” (Leblanc and Wisdom, 1976); “Logic can be defined as the study of consistent sets of beliefs” (Hodges, 1977); “In large part, deductive Logic has sometimes . . . been defined as the science of necessary inference. This definition is informative in that certain kinds of inference are a main concern of logic.” (Thomas, 1977); “Logic is the science of deduction. It aims to provide the means for telling whether given conclusions do or do not follow from given premises, i.e., for telling whether inferences are valid or invalid” (Jeffrey, 1981); “two statements are logically related if the truth value of one can determine the truth value of the other” (Mendelsohn and Schwartz, 1987).

## B.2 CONCEPTIONS OF ARGUMENT

### B.2.a Argument as a set of statements, sentences or propositions that are or might be related in a certain way

“Argument is a set of statements such that one is supported or implied by the others; an argument is a set of statements consisting of premises and a conclusion, a sequence of statements” (Kalish and Montague, 1964); “any set of statements such that one or more of them support or provide evidence for the truth of another statement” (Baum, 1981); “An argument is a set of statements and a statement (Georgacarakos and Smith, 1979); “‘line of reasoning’ or ‘argument’ [is] any combination of a set of statements (the premises) with a single statement (the conclusion)” (Myro, Bedau and Monroe, 1987).

### B.2.b Argument as an intentional object: a set of statements, sentences or propositions that humans take or intend to be related in a certain way

“any group of propositions of which one *is claimed to* follow from the others” (Copi, 1967: a “technical sense”); “A set of statements in which some *are used* as premises to justify some conclusion” (Manicas and Kruger, 1968); “An argument begins with a finite set of statements that are the premises of that argument. Then *it proceeds to* draw conclusions from these premises until it arrives at the last statement, which is the conclusion of the argument.” (Pollock, 1969); “a complex of statements, the truth of some of which . . . *is, or might be, taken to* justify asserting another” (Leblanc and Wisdom, 1976); “what a person produces when he makes a statement and *gives reasons* for believing the statement” (Hodges, 1977); “An argument is merely a collection of two or more sentences (of a single language), one of which *is designated as* being inferable from the others.” (Thomas, 1977); “A sequence of statements, one of which *is supposed to* follow from the others” (Georgacarakos and Smith, 1979); “Argument is a sequence of statements *together with a claim—that* one statement follows from the others” (Carney and Scheer, 1980); “something that can represent . . . a piece of reasoning *intended to* establish the conclusion, given the truth of the premises” (Lambert and Ulrich, 1980); “*A person claims* that if certain things are true, something else must be true also (Barker, 1985); a set of statements in which one or more statements *are put forward as* reasons for accepting another statement as true” (Churchill, 1986); “a collection of statements, one of which, the conclusion, is the statement being argued for, and the rest of which, the premises, are the reasons *put forward to* justify the conclusion” (Mendelsohn and Schwartz, 1987); “In the logical sense . . . an argument is any piece of discourse (any communication by speech or writing) in which evidence in the form of statements *is given for* the truth of other statements” (Yanal, 1988); “A series of statements some of which . . . *are offered as* providing reasons for another statement . . .” (Harrison, 1992); “in logic, . . . a group of statements, one or more of which . . . *are claimed to* provide support for, or reasons to believe, one of the others.” (Hurley, 1994)

### B.2.c Argument as reasoning or as the expression of reasoning

“a process of reasoning” (Oesterle, 1963); “Arguments, then, are the expressions of processes of reasoning” (Terrell, 1967); “Reasoning is expressed in arguments. Every piece of



reasoning has its argument" (Alexander, 1969); "we shall use 'argument' . . . to designate something that can represent reasoning processes" (Lambert and Ulrich, 1980); "when reasoning is put into words we call it an argument" (Barker, 1985); "Reasoning in which some statements give reasons for accepting another is called an argument by logicians." (Kahane, 1986); "An argument is a bit of reasoning" (Churchill, 1986); "a distinct piece of reasoning in which a point is expressed and reasons are offered for that point" (Johnson, 1987); "roughly synonymous with 'argument' . . . (a piece of) reasoning" (Yanal, 1988); "Less abstractly, we may speak of argument . . . instead of inference" (Jeffrey, 1981).

#### B.2.d Argument as proof, demonstration, reasons, evidence

"Argument is a proof or demonstration (not a quarrel). Argument is markedly different from reasoning." (Angell, 1964); "An argument is opinions or reasons for thinking a statement true, or false" (Hacking, 1972); "On the basis of certain reasons or evidence . . . a given conclusion correctly follows." (Kaminsky and Kaminsky, 1974); "An argument . . . is what a person produces when he makes a statement and gives reasons for believing the statement" (Hodges, 1977).

### B.3 REASONING and INFERENCE

#### B.3.a Reasoning

"a process of inference" (Baum, 1981); "a process of thinking" (Barker, 1985); "the act of marshalling evidence, weighing it and drawing a conclusion from it" (Manicas and Kruger, 1968); "is figuring things out. What follows from what. What to do. What will happen if something is true. What we are justified in believing. Why something happened." (Mendelsohn and Schwartz, 1987); "a line of reasoning [is] a combination of two things: a group of statements and a statement" (Myro, Bedau and Monroe, 1987).

#### B.3.b Inference

"inference is a psychological activity" (Copi, 1967); "the reasoning process expressed by an argument, used to produce an argument" (Hurley, 1994); "the passage from the assertion of one proposition (or group) to another" (Hughes and Londey, 1965); "a mental activity" (Angell, 1964); "a kind of thinking that aims at a conclusion" (Johnson, 1987); "an act of reasoning" (Oesterle, 1963); "Intermediate inferences are the steps of an argument between the premises and the conclusion." (Pollock, 1969).