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A Groundwork for The Theory of Notation

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UNIVERSITY OF MIAMI

A GROUNDWORK TO THE THEORY OF NOTATION

By

Len O. Olsen

A DISSERTATION

Submitted to the Faculty
of the University of Miami
in partial fulfillment of the requirements for
the degree of Doctor of Philosophy

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UNIVERSITY OF MIAMI

A dissertation submitted in partial fulfillment of
the requirements for the degree of
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A GROUNDWORK TO THE THEORY OF NOTATION

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This work is a philosophical investigation of signs. It offers a definition of the term 'sign' and develops three different systems for talking precisely about signs and their properties. The system of object display lines is developed in the first chapter; the ostension notation and the box notation are developed in the second chapter; and the contemporary associationist definition of a sign is developed in the third chapter. These systems, in conjunction with the definition, are proffered as a philosophical foundation for the theory of notation.

The first chapter of this work develops the distinction between i) mere objects (non-signs), ii) signs of mere objects, and iii) signs of signs. The exhibitiv use of objects is distinguished from their constitutive use; and the *de re* use of signs is distinguished from their *de signo* use. Both the discursive homogeneity thesis and the sentential homogeneity thesis are formulated. Arguments against the former are considered, and the thesis is rejected. The latter thesis, however, is accepted as a means of stopping the infinite regress that would occur if the meaning of a sign always had to be explained through the use of other signs. Object display lines are developed as a systematic and rule governed method of introducing mere objects into a discourse.

The second chapter deals with the problem of using signs to talk about signs; and offers both an historical analysis of the development of quotation marks as a form of punctuation, and an historical analysis of the philosophical debate over quotation marks. Frege's convention of using quotation marks to mention signs is rejected, and the ostension notation and the box notation are developed as replacements.

The third chapter deals with the nature of signs. The ontological status of signs is considered, and the thesis that signs are relations is rejected. This is followed by a brief historical survey of the associationist and behaviorist conceptions of a sign. Finally, a contemporary associationist conception of a sign is developed, and the basic structure of the human sign is postulated. A number of refinements are made to the definition to avoid pansemiosis.

DEDICATION

I dedicate this work to The Teachers:

*Richard Olsen,
Vito Sinisi,
M.G. Yoes,
Susan Haack,
and St. Augustine.*

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I would first like to express my deep gratitude to the members of my committee. I want to thank my advisor Susan Haack for allowing me the academic freedom to pursue a line of philosophical inquiry that has occupied my thoughts for almost twenty years. I also want to thank her for her many comments, suggestions, and criticisms, (both substantive and stylistic) which I believe have resulted in a much improved final product. I want to thank Amie Thomasson for her moral support though out the process of writing this work. I also want to thank her for her prompt and constructive responses to my work. I want to thank Sun-Joo Shin for her moral support, and for meeting and corresponding with me over the years. I want to thank Marvin Mielke for meeting with me on a regular basis during the inception of the project, and for our discussions on the topics of formal structures, logic, and mathematics.

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I must thank my friends and colleagues who have helped in bringing this project to completion. I thank Deb Lariviere for reading and editing many sections of this work,

and for our many philosophical discussions over the past thirteen years. I also thank Mike Veber for our many philosophical discussions on logic, epistemology, and metaphysics, while pulling up the anchor and gaffing the fish. I want to thank Bruce Krajewski for reading parts of this work and for his moral support over the years. Last, and most importantly, I want to thank Sharon Wrobel for reading and editing many sections of this work, and for being a loving and patient partner.

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PREFACE

THE GENERAL CHARACTER OF THIS WORK

The theory of notation is a theory about signs and sign systems. It seeks a definition of the word 'notation', and a systematic classification of notations according to their various properties.¹ Nelson Goodman has presented a theory of notation in the fourth chapter of his book *Languages of Art*. The book as a whole is often studied by those who are interested in aesthetics, but it can also be viewed as a work on symbols and symbols systems.² Viewed from this perspective, it has much to offer. It is, perhaps, the seminal doctrine on the theory of notation.

Strictly speaking, the present work does not qualify as a theory of notation, since it neither provides a definition of the word 'notation' nor offers a systematic classification of notations. Instead, it provides a definition of the word 'sign' and develops a system for talking about signs. Insofar as these things are preparations for defining the term 'sign system' and talking about sign systems, it can be considered as a groundwork to the theory of notation.

There is a theme that runs throughout this work. That theme is the struggle between ordinary language and philosophical language. The latter pursues a kind of precision in the use of signs and their meanings that is often contrary to the flexibility and

¹ The use of single quotation marks in this work follows the longstanding convention adopted by logicians and philosophers. When a word or an expression is mentioned, that word or expression is placed between single quotation marks, with all punctuation that is not being mentioned placed outside the quotation marks. This usage, of course, does not agree with standard American usage. Nevertheless, standard American usage is followed whenever the words of another are directly quoted.

² Goodman says as much in the introduction to the work. "my study ranges beyond the arts into matters pertaining to the sciences, technology, perception, and practice. Problems concerning the arts are points of departure rather than convergence. The objective is an approach to a general theory of symbols... 'Languages' in my title should, strictly, be replaced by 'symbol systems'." Goodman, N. *Languages of Art*, pp. xi-xii.

economy valued by the former. In light of this fact, I am surprised about the number of times that I have made appeals and concessions to the ordinary use of language in the attempt to resolve philosophical confusions about the nature of signs. Perhaps there is an important lesson to be learned here. But one would be missing the point, I think, if one were to conclude from this that ordinary language is wholly adequate for the business of philosophy. Many of the confusions and disagreements in philosophy are the direct result of an imprecision in the meanings of our signs that is inherited from the ordinary use of language. And in the end, I believe that the development of a philosophical language (a notation for philosophy) is the key to making progress in philosophy. In my less sober daydreams, this groundwork contributes a small step in the development of that key.

A SUMMARY OF CHAPTERS

CHAPTER ONE

The first chapter of this work rests on a distinction between signs and mere objects. This distinction was emphasized by St. Augustine; and most of the problems that are investigated in this chapter relate either to: i) the necessity of using signs, or ii) the possibility of using mere objects instead of signs. To my knowledge, these topics have seldom been taken as a subject of study on their own account, even though they have often been addressed or investigated as the result of some more pressing problem.

In my opinion, more research needs to be conducted on mixtures of mere objects and signs (*heterogeneous constructs*), regardless of how offensive they may be to our

grammatical intuitions.³ But this work does not pursue that path of inquiry very far. It merely sticks its foot in the door.

Part I

The chapter opens with a dialogue in which St. Augustine, Ludwig Wittgenstein and Charles Peirce discuss the evolution of signs and the origins of meaning. The purpose of the dialogue is to get the reader thinking about the subject, and to raise many philosophical issues about language, signs, and meaning that were originally raised by Augustine's dialogue *De Magistro*. Among these issues are puzzles that arise from the failure to observe the distinctions between use and mention, and between sense and reference.⁴ The central issue, however, is whether it is possible to teach someone the meaning of a sign without using other signs. For if we must always use other signs to teach the meaning of a sign, how does the whole project ever get off the ground? How was the meaning of the first sign ever learned? Is there no such thing as the first sign? Is there an infinite regress in signs and meaning? These questions all characterize what I call *the puzzle of the ground of meaning*.

In their own writings, both Peirce and Wittgenstein consider this puzzle. And their solutions to the puzzle differ from the solution that Augustine provides. Augustine escapes the regress by allowing that not all explanations of meaning involve signs. In certain cases we can explain the meaning of a sign by an appeal to things that are not

³ I conjecture that there is definition of truth to be uncovered by following this line of inquiry. It would consist of a systematic method of replacing signs with the objects they stand for until the sentence turns into a mere state of affairs.

⁴ Augustine's question "What does 'nothing' signify?" leads to insoluble puzzles if one does not distinguish sense from reference. Augustine's joke that Adeodatus is not a man because he is not a 'man' is a puzzle that rests on confusing the use and mention of a word.

signs. I call this solution *the retreat to mere things*.⁵ Peirce offers a different solution. He suggests stopping the regress by allowing that some signs contain their own explanation within themselves. It is easier to imagine how this is possible once we turn our attention away from purely conventional signs, and consider icons. An icon may be thought to "wear its meaning on its sleeve" in a way that a conventional sign does not. The ground of meaning, according to this solution, is to be found in certain signs whose meaning is inherent in the sign itself. I call this *the inherentist solution*.⁶ The view of meaning that is found in Wittgenstein's *Tractatus* falls in line with the inherentist solution. However, this solution is rejected in his later works—*The Blue Book*, *The Brown Book*, and *Philosophical Investigations*. In these later works, Wittgenstein adopts a more conventionalist view of signs, grounding meaning in the behavior that accompanies the use of signs.⁷ I call this *the behaviorist solution*.⁸ Even though all three solutions have a certain plausibility to them, the first chapter places a special emphasis on the Augustinian retreat to mere things. The object display lines developed in the third part of this chapter can be thought of as a systematic, rule-governed method of retreating to mere things. Placing an object in a sentence where its name belongs (which is often called confusing use and mention) is another common form of retreating to mere things. The possibility of retreating to mere things, along with the benefits and dangers of doing so, is more fully discussed in part three of this chapter.

⁵ The idea of the retreat to mere things may bring up the idea of ostensive definition. This is fine, so long as the idea of ostensive definition does not involve the idea of pointing. Augustine considered pointing to be a kind of sign.

⁶ One place that Peirce discusses the problem and offers this solution is *Collected Papers*, 2.230.

⁷ One place that Wittgenstein discusses the problem is *Philosophical Investigations*, paragraph 87. Also, *The Blue Book*, pp. 1-2 and 32-35. Wittgenstein rejects the retreat to mere things solution, as well as the inherentist solution.

⁸ This is not the same thing as saying that Wittgenstein was a strict behaviorist about meaning. The behaviorist solution to the puzzle does not claim that there is nothing more to meaning besides behavior. It only looks to behavior as *the ground* of meaning.

Part II

The second part of the first chapter is designed primarily to get the reader acquainted with signs through the observation of certain facts. The first section attempts to draw attention to the fact that signs (the things to be investigated) are immediately before the reader. It also provides an argument for the conclusion that signs exist. Although this statement is uncontroversial and does not call for proof, the fact that the statement provides sufficient evidence for its own truth is nevertheless something worthy of philosophical consideration. In the second section, I argue that philosophy cannot be done without signs, since all speaking, reading, writing, and thinking involve the use of signs. Again, the conclusion is not controversial, but these facts are worthy of philosophical consideration. In the third section, I set out a preliminary notion of a sign, and distinguish signs from mere objects. I point out that signs and mere objects both have properties qua objects of experience, and I call those properties *objectic properties*. Signs differ from mere objects insofar as they have *semantic properties* (mere objects have no semantic properties). An example of a mere object and a sign are provided, but an answer to the question: *What is a semantic property?* is not offered in this chapter. Asking this question is tantamount to asking the difficult question: *What is a sign?* The answer to this question is postponed until the third chapter.

Part III

Armed with the distinction between mere objects and signs, the third part of Chapter I investigates relationships between mere objects, signs, and discourse. The central question is whether it is possible to bring the object under discussion (whether that object is a sign or a mere object) into one's discourse. In a passage from *Sophistical*

Refutations, Aristotle claims that it is not possible.⁹ I claim that it is possible in at least two different ways. The first way that an object can enter into a discourse is as an example. I call this the *exhibitive use of objects*. The second way that an object can enter into a discourse is as a part of a sentence. I call this *the constitutive use of objects*. In addition to the distinction between the exhibitive and the constitutive use of objects, I distinguish the *de re use of signs* and the *de signo use of signs*. If the use of a sign doesn't involve any of its semantic properties, then it is used *de re*.¹⁰ Otherwise it is used *de signo*. Unlike use and mention, the *de re use of signs* and the *de signo use of signs* are mutually exclusive and jointly exhaustive.¹¹ Those who are not familiar with the philosophical controversy surrounding the use-mention distinction may fail to see the value in the exclusivity of the *de re-de signo* distinction. Chapter II, however, looks more closely at the use-mention distinction, and reveals that its lack of exclusivity has been the source of much philosophical controversy.

Alfred Tarski and W.V Quine both reject the constitutive use of mere objects. They are both advocates of *the sentential homogeneity thesis*, which states that a sentence must be composed exclusively of signs used *de signo*. In other words, neither Tarski nor Quine permitted something to take the place of its name in a sentence. But why? Why is the retreat to mere objects (or signs considered as if they were mere objects) within a sentence not allowed? Two arguments are considered. The first is the argument from grammaticality offered by Tarski; the second is the argument from ambiguity offered by Gottlob Frege. I claim that Tarski's argument is weak, but Frege's has some bite. And in

⁹ Aristotle probably didn't mean that it is always theoretically impossible, but only that it is often practically impossible to bring the object to be discussed into the discussion.

¹⁰ For an extreme example, consider propping a window open with a name-plate.

¹¹ Every use of a sign is either *de re* or *de signo*, but never both.

the end, I accept the sentential homogeneity thesis, and uphold the ban on the de re use of objects within a sentence.

Although the retreat to mere things *within a sentence* is not allowed, I consider the benefits of retreating to mere things *within a discourse*. The benefits relate to the puzzle of the ground of meaning. The retreat to mere things is one way to stop the potential infinite regress in meaning; and it also is a way of avoiding the problem, first pointed out by K. Reach (1938), that arises from the adoption of the sentential homogeneity thesis.¹² Once the benefits are discussed, I turn to the project of developing *object display lines*. Although my object display lines are similar to regular display lines, they are governed by stricter rules. For example, an object display line cannot occur in the middle of a sentence; and no punctuation that is used (de signo) in a discourse may occur on an object display line. Establishing object display lines is the first step in setting out a notation for discoursing on signs.

Part IV

The fourth part of Chapter I draws a distinction between *signs of mere objects* and *signs of signs*. Once again, this distinction was originally drawn by Augustine in his dialogue *De Magistro*. I call a sign that stands for another sign a *meta-sign*; and a sign that stands for a mere object a *mere-object-sign*. Once the concept of a meta-sign is cleaned up, I investigate why meta-signs, like mere objects, often need to be introduced in a discourse.

¹² Reach, K. "The Name Relation and the Logical Antinomies," p. 99. (1938). Reach's puzzle is basically a 20th Century variant of Augustine's problem of trying to teach someone the meaning of an unfamiliar sign, when all you have are signs at your disposal. Reach attempts to show that in certain situations, progress is impossible unless one retreats to mere things. In fact, in order to even be capable of conveying the puzzle to the reader, Reach is forced to make use of a "museum"—i.e. a collection of names and mere things.

CHAPTER TWO

A discourse on sign systems will require the use signs to talk about signs, and Frege's convention of using quotation marks to facilitate this process has become the standard in philosophy. Unfortunately, Frege's convention falls short of what is required in several respects. These shortcomings, along with numerous other problems surrounding quotation, are carefully investigated. Finally, an alternative set of conventions is developed.

Part I

The dialogue of Part I is an online chat between Abbot and Costello. It attempts to exemplify the ambiguities and difficulties involved when using quotation expressions to mention signs; and anyone familiar with the skit "Who's on First" will be able to observe many parallels between that work and this one. What Abbot and Costello need are object display lines, because quotation expressions, like the duck-rabbit, lend themselves to different interpretations.

Although the dialogue is a work of fiction, the problems that arise are real. The inspiration for this dialogue was my email correspondence with Vito Sinisi on the topic of quotation marks and display lines.¹³

Part II

The goal of Part II is to draw several conceptual distinctions that are blurred under the name of quotation. Quoting is distinguished from using inverted commas and from mentioning signs; descriptive theories are distinguished from prescriptive theories; and

¹³ Our correspondence addressed the account of the use-mention distinction in his book, *Applied Logic*, pp. 28-29.

ordinary discourse is distinguished from philosophical discourse. With these distinctions in place, I identify forty-two different programs relating to quotation. Program 21 is the project of searching for a descriptive theory of how quotation works. More specifically, it attempts to discover a descriptive theory which can account for acts of quoting, acts of using inverted commas, and acts of mentioning signs, as these acts occur in both ordinary discourse and philosophical discourse. Program 31, on the other hand, only attempts to develop a system for mentioning signs in a philosophical discourse. Although most of the recent articles on quotation are written in the spirit of program 21, I reject that program because it is based on the false assumption that there is a way that quotation marks really work.

Part III

In the third part of Chapter II, I look at quotation from an historical perspective. First, I examine the history of quotation marks considered as a form of written punctuation. This investigation reveals that the evolution of quotation marks (as a form of punctuation) was haphazard, and there was never a clear standard for using quotation marks. This suggests that there really is no such thing as *THE way quotation marks work*, and throws doubt on the prospects of program 21.

Next I examine the history of the philosophical debate over quotation. I divide this history into three eras: *The Logical Era*, *The Era of Critique and Transition*, and *The Linguistic Era*. I claim that the philosophical debate over quotation began as a problem in logic (similar to program 31), but gradually evolved into a problem in the philosophy of language (program 21). The history of the philosophical debate reveals both the inadequacy of Frege's convention and several problems with the use-mention distinction.

At the same time, the various attempts by philosophers to improve Frege's convention provide a wealth of insight and material for working out a unified system for mentioning signs. This history, then, does double duty. First, it shows where the contemporary debate over quotation has gone wrong; and second, it provides the insights and distinctions necessary for the development of a system for mentioning signs.

Part IV

In this part of the work, I set out two systems for mentioning signs. The first system is the *ostension notation*; the second is the *box notation*. Before setting out these systems, I state the syntactic, semantic, and pragmatic requirements of the systems. There is redundancy between the two systems, since what can be done with one system can often be done with the other. But the charge of redundancy is not a serious objection. The box notation is capable of doing more than the ostension notation, since it can mention signs and properties of signs that are invisible. It is also an iterable device that does not fall prey to ambiguity. But the ostension notation has its own merits. It avoids talk of sets while being more intuitive and easier to read than the box notation.

Object display lines are used to help explain these systems, and without display lines, doing so would be much more difficult. When taken in conjunction with object display lines, these two systems provide a way of talking precisely about signs and their properties.

CHAPTER THREE

The goal of this chapter is to raise and answer the question *What is a sign?* Unlike the preliminary account of signs in Chapter One, the account of signs in Chapter Three goes deep. I chase the proverbial rabbit down the rabbit hole.

Part I

Like the previous two chapters, this chapter opens with a dialogue. The characters in this dialogue resemble certain contemporary characters in philosophy, and I hope that I will not be judged too harshly for having a little fun with them.

The main question posed by the dialogue is whether signs are physical objects. The scene takes place in a court of law; and the plaintiff claims that his hand was damaged by a sign that fell off the defendant's building. The defense attorney attempts to refute the plaintiff's story by providing evidence that signs are not physical objects. The defense brings in expert witnesses to testify about the nature of signs; and their testimony seems to support the claim that signs are not physical objects. In the end, I am brought in as a rebuttal witness. One can read the remainder of Chapter 3 as if it were my testimony.

Part II

The main goal of this part is to argue against the relational view of signs. Signs, I maintain, are not relations. I begin by analyzing predicates (and here predicates are signs or strings of words, not properties). I show that there is a difference between a predicate's *adicy* and its *onticity*. The adicy of a predicate is based on the number of subject terms that are required in order to make a complete sentence with the predicate.

Thus, a predicate may be monadic (requiring one subject term) dyadic, (requiring two subject terms), triadic, etc.. The onticity of a predicate is based on the number of individuals that must exist in order for the predicate to be instantiated. When the adicity of a predicate is greater than its onticity, we get an ontically inflated predicate. When it is less than its onticity, we get an ontically compressed predicate. With this established, I argue that philosophers who claim that signs are relations are led to do so because the predicate 'is a sign' is ontically compressed. In other words, because the instantiation of the predicate requires several things, they conclude that signs are relations. I reject this kind of reasoning. Instead, I side with ordinary language and common sense. Signs are not relations.

Part III

The third part of Chapter 3 considers two radically different views of signs. On one hand, there is the associationist view that takes mental association as the mechanism underlying all signs. On the other hand, there is the behaviorist view that shuns anything mental, and attempts to understand signs in terms of behavioral dispositions. First, I consider the definitions of some of the more prominent figures in semiotic who endorsed an associationist view. I then raise objections to the view. I do the same for the behaviorist view. This sets the stage for my contemporary associationist conception of a sign.

Part IV

The goal of the fourth part of Chapter 3 is to set out my version of a *contemporary associationist conception of a sign*. This conception is gradually developed in stages, along with the definition that characterizes it.

The first step in setting out my conception is to limit its intended scope. Developments in semiotic during the twentieth century led to a widening of the concept of a sign; and currently there are many people who focus their research on sign activity in non-human animals (zoosemiotics), sign activity in plants (phytosemiotics), sign activity in fungi (cytosemiotics) etc.. The conception of a sign that I develop, however, is limited to human signs. My goal is only to capture what is both necessary and sufficient for the existence of human signs.

After explaining the scope of my conception, I lay out syntactic, semantic, and pragmatic requirements on the definition. The semantic requirements deal with what is acceptable regarding the extension and intension of the predicate 'is a sign'. The syntactic requirements deal with general restrictions about the form of the definition, along with restrictions on the language in which it is to be formulated. The pragmatic requirements outline some of the things that the definition should allow us to achieve.

Once the requirements on the definition are set out, I offer a preliminary version of my contemporary associationist definition of a sign, along with what I call *the basic graph*. The purpose of the basic graph is to present (in the form of a diagram) the structure of the human sign (according to my definition), and to facilitate a structural comparison of my definition with the definitions of Augustine, Ockham, Peirce, and Saussure. In the end, this structural comparison leads to some surprising results. I end up rejecting the view that ideas are signs; I also end up rejecting the view that *standing for* is a semantic relation. These two theses, I maintain, are intimately connected.

The next step, after comparing my definition to the other definitions, is to address some of the potential objections to my conception of a sign. First, in order to avoid a special kind of pansemiosis (the view that everything we perceive is a sign), I reject the view that the basic act of perception involves signs. Second, in order to avoid the objection that my conception of a sign is too individualistic (i.e., fails to capture the social dimension of human signs), I distinguish the meaning of a sign from its signification. Third, I attempt to show how my conception can account for denotation. Finally, I consider how context affects the signification of a sign.

The last step is to formulate and analyze a final version of my contemporary associationist definition of sign. I formulate a regular definition along with an existential definition, and then I proceed to analyze how the predicate 'is a sign' is ontologically compressed. In conclusion, I conjecture that the ontological compression of the predicate 'is a sign' is one thing that has caused philosophers to become confused about the nature of signs.

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CHAPTER I SIGNS AND MERE OBJECTS

PART I

POINTING A FINGER TO THE THEORY OF NOTATION
(ON THE EVOLUTION OF SIGNS AND THE SEARCH FOR MEANING)

The scene: St. Augustine is sitting beneath a pear tree, eating a pear and thumbing through his copy of Wittgenstein's *Philosophical Investigations*.

[*Wittgenstein strolls up with a brown paper bag and Augustine stands to greet him.*]

Augustine: Good day, my dearest Wittgenstein! I have been expecting you.

[*They shake hands*]

Wittgenstein: Are you certain that you weren't expecting someone else?

[*They take seats on the ground beneath the pear tree.*]

Augustine: Surely it is not a mere coincidence that I brought this.

[*Augustine holds up his copy of Wittgenstein's **Philosophical Investigations**.*]

Augustine: Would you care for a pear?

Wittgenstein: No, thanks. I just came from the market. I have five red apples in my bag.

[*Augustine opens his copy of **Philosophical Investigations** and points to the opening paragraph.*]

Augustine: Speaking of red apples, my dear Wittgenstein, I see that you were so kind as to re-present my view of human language to the philosophical world. I am inclined to say, "if not for you, I fear all my work on this subject would have been lost in the annals of time."

Wittgenstein: "If my work is not well received and perpetuated by others, it was all for naught." That is the type of proposition one repeats to oneself over and over again.

Augustine: Well, maybe so. Then again, maybe not. But let us not be detained by such matters. I would prefer that we use this time to discuss some issues concerning the foundations of the theory of notation.

Wittgenstein: I hear your words, and suddenly I am filled with the fear that language is about to go on holiday!

Augustine: My dear boy, there is nothing wrong with enjoying a holiday every now and then.

Wittgenstein: I have no time for a holiday.

Augustine: No time? [*Augustine pauses for a moment*] What is time?¹ At this present moment, however, I agree with you—I do not think we have time to go on holiday. After all, there is a lot of linguistic labor that awaits our hands.

Wittgenstein: What you call 'linguistic labor' or 'language work', I call 'Sprache Spiele' or 'language play'.

Augustine: Well, then I say, "All work and no play makes Ludwig a dull boy." So we should take some time and play this language game.

Wittgenstein: I don't know whether we *ought* to make time for this language game. But I do say that one ought always make time for a little physical exercise—and thus I say, "bububu."²

Augustine: And if it is raining? What then? For, in addition to that man who is approaching us, I see dark clouds on the horizon and that is a sign of rain. I also just felt a drop.

[*Augustine points down the road to an approaching figure as Wittgenstein looks.*]

Wittgenstein: In that case, I will stay here and discuss this theory of notation you've been talking about. So tell me, what is this theory of notation?

Augustine: It is difficult to say with precision. Nevertheless, I can say this much: the foundation of the theory of notation is concerned with signs and sign-systems.

[*The man who was spotted in the distance—Charles Peirce—arrives at the pear tree and proceeds to listen in on their conversation.*]

Wittgenstein: I see.

Augustine: Moreover, it so happens that whenever one writes or talks about the theory of notation, one ends up writing and talking about signs.

¹ Cf. Augustine, *Confessions*, Book II Chapter 14; Wittgenstein, *Philosophical Investigations*, paragraph 89, and *The Blue Book*, pp. 26-27.

² Cf. Wittgenstein, *Philosophical Investigations* paragraph 38. "Can I say 'bububu' and mean 'If it doesn't rain I shall go for a walk'?"

Wittgenstein: Indeed, it seems to follow. But now certain questions hover before my mind and I am compelled to ask: What happens when one talks about signs? What happens when one writes about signs?

Augustine: Good questions; to which I answer: nothing, other than that one uses signs with the hope of explaining other signs. For when one writes, one uses written words, which are signs. When one talks, one uses spoken words, which are signs.

Wittgenstein: This seems correct. We use signs to explain signs. But now I must ask: what about the signs that are used in this explanation? Are these signs just understood or do these signs need to be explained also? If they need to be explained, how does one explain these signs?³

Augustine: Well, I suppose one must use other signs.

Wittgenstein: And these new signs that are used to explain the signs that are used to explain the original signs, how are these signs explained?

Augustine: Yes; we have struck upon the problem.

Peirce: Maybe some of these signs will explain themselves.⁴

Wittgenstein: Who are you?

Peirce: You need not ask this question. One can easily discern from your *Philosophical Investigations* that you know nothing about me or my work.

Wittgenstein: Atatat!

Augustine: What on earth does that mean?

Wittgenstein: It means that if I knew this were going to happen, I would have gone for a walk in the rain. Anyhow, let me respond to this stranger. Once, while I was young and naïve, I entertained a thesis about words and their meanings that is not so different from the idea you have put forward. But over time I came to realize this thesis is incorrect.

Peirce: Okay, have it your way. Let us say that no sign can explain itself. In that case, either there is an infinite regress of explanations or some sign cannot be explained.

³ See *Philosophical Investigations*, paragraph 87.

⁴ See CP 2.230.

Augustine: Gentlemen, this is precisely one of the problems that confronts the foundations of the theory of notation. And it appears that we have come to the following remarkable conclusion: one of the following three theses must be true:

- some sign explains itself;
- some sign cannot be explained;
- there is an infinite regress in the explanation of signs.

Peirce: Indeed, and notice how this problem parallels the problem of justifying belief.⁵ Such an observation leads one to suspect that we have left out a possibility. Perhaps if one gets enough signs together, they can be used to explain each other.

Augustine: Yes, perhaps. But let's not jump the gun on this matter. For our conclusion presupposes that every explanation of a sign requires the use of some other sign. But is this correct? After all, what about ostension?

Wittgenstein: Ostension schmostension! Don't you recall my devastating critique of ostension in *Philosophical Investigations*?⁶

Augustine: Well yes, I do. And that reminds me. It would have been a nice gesture on your part, Wittgenstein, considering that you were presenting my view of language in that work, to mention that your critique of ostension was cribbed from my dialogue *De Magistro*. Or do you not recall that dialogue between me and Adeodatus?

Wittgenstein: I assure you, I have never seen it!

Augustine: I am inclined to believe you. For if you had read that work of mine, surely you would not have portrayed my theory of language in the way that you did. Indeed, someone who reads your book might well think that I was simple-minded, or that I had not reflected carefully on these matters. But of course, nothing could be further from the truth; and my own critique of ostension predated your version by more than sixteen hundred years.

Wittgenstein: Everyone knows that I was not well read in the history of philosophy.

Peirce: You say that with pride, but I would be embarrassed to say such a thing.

Wittgenstein: Atatat!

Augustine: Now now! Let us not dwell on the fact that Wittgenstein misrepresented my view of language—he's clearly getting upset.

⁵ For a discussion of the problem in epistemology, see Chapter I of Haack's *Evidence and Inquiry*.

⁶ Cf. Wittgenstein, *Philosophical Investigations*, 28-35. Also, *The Blue Book*, pp.1-2.

Wittgenstein: Ich hätte gerne ein gutes Buch hervorgebracht.⁷

Augustine: Enough already, let us stay focused on the issue.

Peirce: What is the issue again?

Augustine: The question is whether some signs can be explained without the use of any other signs.

Peirce: Okay, now I remember.

Augustine: When I discussed this matter with Adeodatus, some sixteen hundred years ago, we initially raised the question whether the signification of a word like 'from' could be explained without the use of other signs. One idea that crossed our minds was this: perhaps a mime could explain the signification of this word through bodily gestures. We quickly realized, however, that the gestures made by the mime would be signs, and so this wouldn't show what we hoped.

Peirce: I see your point.

Augustine: These thoughts, however, led us to another more general question: Is it possible to explain the signification of *any* word without the use of other signs? We thought about someone asking: "What does the word 'wall' signify?" In this case, we agreed that one could explain the signification of the word 'wall' by pointing to a wall. But again, we quickly realized that pointing is a kind of sign.

Peirce: Indeed it is.

Augustine: At this point we were on the verge of concluding that it was impossible to explain the signification of a word without the use of other signs—indeed, Adeodatus had already accepted the conclusion. But then, suddenly, an idea occurred to me. Suppose, said I, that someone asked, "What does the word 'walking' signify?" Surely you could get up and start walking around. And this walking would not be a sign, but the very reality itself. So we concluded that it was possible to explain the signification of some words without the use of other signs.

Peirce: I see.

Wittgenstein: But doesn't this scenario presuppose the use of signs to begin with? After all, the scenario presupposes that a person can ask a question about the signification of a word. It seems quite obvious that one can not ask such a

⁷ "I should have liked to produce a good book." (cf. Wittgenstein, *Philosophical Investigations*, the last paragraph of the Preface).

question unless one already has a command of a language. This, Augustine, is one of my main objections to your view of human language acquisition.⁸

Augustine: You are quite correct, Wittgenstein. There are really two distinct questions here. 1) Assuming that one can ask a question about the signification of a word, can the signification of that word be explained without the use of other signs? 2) If someone has no familiarity with the signification of any *words*, can the signification of a word be explained to him without the use of signs?

Wittgenstein: Yes; these are very different questions, and it is the second question that poses the greater challenge.

Peirce: Excuse me gentlemen, but would you mind if I added a third question to the list?

Augustine: You have detected a third?

Peirce: Yes; I have detected a third. Imagine that.

Augustine: Please share this third with us.

Peirce: If one has no familiarity with any *signs* whatsoever, can the signification of a word be explained to him without the use of signs?

Wittgenstein: I believe I see the distinction; for you might be familiar with various signs, but none of these signs are words.

Peirce: That is correct.

Wittgenstein: For example, the person may be familiar with pointing or nodding.

Peirce: Right.

Wittgenstein: And we might wonder whether you could explain the signification of some word to such a person without using any of these other non-linguistic signs.

Peirce: Exactly.

Wittgenstein: And if one succeeded in this case, it would demonstrate that the second case is possible, although it would not demonstrate that your third case is possible.

⁸ Cf. Wittgenstein, *Philosophical Investigations* paragraph 32. "And now, I think, we can say: Augustine describes the learning of human language as if the child came into a strange country and did not understand the language of the country; that is, as if it already had a language, only not this one."

Peirce: Yes; this third case presents the greatest challenge. It involves attempting to explain the signification of a word to a person who understands no signs whatsoever.

Augustine: I acknowledge these fine distinctions; but let us presently focus on the first question, for it seems clear that we were presupposing the person had some familiarity with other words.

Wittgenstein: Okay.

Augustine: In that case, are you willing to grant that it is possible to explain the signification of a word without the use of other signs?

Wittgenstein: It seems that one might rightfully infer that from your example. But even in this case, I do not feel comfortable resting with that conclusion.

Augustine: A funny thing that you should bring up the topic of resting. For although Adeodatus and I were on the verge of accepting that very conclusion, a new thought came to mind. I asked Adeodatus the following question: What would you do if the person asked his question about 'walking' while both of you were not resting, but instead walking?

Wittgenstein: And what was his reply?

Augustine: He said that he would walk a little faster.

Wittgenstein: And what did you say?

Augustine: At that point, I raised a philosophical problem that I am certain you will appreciate.

Wittgenstein: I think I know what you are going to say.

Augustine: That's right! I said to Adeodatus that perhaps the person will think that 'walk' signifies to walk quickly, or simply to make haste.

Wittgenstein: Exactly! I discovered this same problem arises whenever you try to define a term through ostension!⁹

Augustine: Yes, it is essentially the same problem. So, should we conclude that the answer to the first question is 'No'?

Peirce: Wait a minute. In the case where both men are walking and the question is asked, I am willing to grant that a philosophical dilemma arises. But let's not

⁹ Cf. Wittgenstein, *Philosophical Investigations*, paragraph 28. "That is to say: an ostensive definition can be variously interpreted in *every* case,"

forget the real issue. The question is whether it is possible to explain the signification of *some* word without the use of any other signs. If it is possible in the case where both men are at rest when the question is asked, that would be enough to show that it's possible. One does not show that it's not possible by coming up with one case in which it is not possible. And you have already granted that it is possible in the case where both men are at rest.

Augustine: I take no objection to your reasoning. But the point of my example is a bit subtle, and I fear you have missed it. You see, the same philosophical puzzle applies even in the case where both men are at rest. The applicability of the problem is not as obvious in that case; so I brought up a case in which the problem *is* obvious. But I assure you, the problem applies in the first case too. For if you get up and walk, you will, of necessity, walk in a certain way. And how is the person to know 'walk' does not mean walking in that certain way. And mightn't the person infer that 'walk' signifies getting up, or being in motion?

Peirce: Well, I grant that it is possible that the person will get it wrong. But it is also possible that the person will get it right. And it only takes one successful case to prove that it is possible to explain the signification of a word without the use of signs.

Augustine: If you want to count a lucky guess as an explanation, then I will grant you your conclusion. But this brings up the question: What counts as an explanation?

Peirce: Yes; I see there are problems here. For I can imagine a teacher giving a rather thorough account of a certain phenomenon, while the dullness of the student prevents the student from understanding it. Should we say in this case that something has been explained?

Augustine: It is difficult to say. On one hand, I want to say that 'explanation' is a success term. If the student doesn't come to an understanding, nothing has been explained. On the other hand, surely the teacher is doing *something*; and I am inclined to say that he is giving an explanation, although the explanation is not understood.

Wittgenstein: Now language is on holiday! You are trying to give a philosophical analysis of 'explanation'; but you fail to realize that you are lacking a language game in which to use it. Save yourselves the trouble, and look instead at how the word 'explanation' is *used in a particular language game*. For you cannot determine the signification of 'explanation' so that it will hold for all language games. That's impossible. Moreover, the idea that the signification of a word needs to be explained before one can *use* it is mistaken. This whole philosophical puzzle concerning the regress in explanation rests on the assumption that the signification of a word must be precisely explained before the word can be used. But I deny this. In fact, I think the reverse is the case: a word

must be used before its signification can be determined. If the signification of a word can be explained at all, it is only through showing others how to use that word in a language game.

Peirce: If what you say is correct, then the original puzzle seems to have been solved. Although in that case, a new puzzle arises. For surely every sign must have a first use. Don't you agree?

Wittgenstein: I suppose that is true.

Peirce: Well, what is to determine how that sign is used on the first occasion? Surely the use cannot be determined by its signification, for by your own hypothesis, it has no signification.

Augustine: Indeed. And let me add another dimension to the puzzle. Having signification is a necessary condition for something being counted as a sign. But if this is so, then it appears that there is no such thing as the first use of a sign.

Wittgenstein: I see your concerns. Let me see if I have anything to say in reply.

Augustine: Please do.

Wittgenstein: Suppose that an object x is accidentally used in a certain way, and through that use it acquires signification.

Augustine: Okay.

Wittgenstein: On that occasion we do not say that x was *used* as sign, but instead, we say that x has *become* a sign.

Augustine: Go on.

Wittgenstein: Now, if x is used later in the same way, then we say that x is used as sign for the first time.

Augustine: I am not sure this works. But let me ask you this: once x has become a sign, can we then teach the signification of x to others?

Wittgenstein: Here we confront another longstanding misunderstanding. We do not *teach* children the *signification* of words. On the contrary, we *train* them how to *use* words. When they do not behave in the appropriate manner, we beat them on their ears and pull them by their hair!¹⁰

¹⁰ Cf. Monk, *Wittgenstein: The Duty of Genius*, p. 196 and p. 233.

Augustine: Yes; I have heard of your unique didactic methods; and I must say that I do not approve. Are these methods a natural consequence of your view of language acquisition? If so, they seem to me to be almost a refutation.

Wittgenstein: A little bit of Haareziehen never did serious damage to anyone.

Augustine: I must confess, your theory of language acquisition and teaching paint a dark picture of human nature. Isn't teaching something more than animal training? Isn't human nature something more enlightened?

Wittgenstein: In reply, I must say that I have always found your confessions most enlightening. But they have no effect on the facts of human language acquisition.

Peirce: Well, let us suppose that Wittgenstein is correct about the origins of signification. This doesn't mean that human nature is incapable of anything more refined. In fact, I once maintained that there were three different levels of signification. The first level involved something like what Wittgenstein describes. The second level, however, involved something like the ability to explain a word by means of other words. Finally, the third level was the ability to give a list of subjunctive conditionals by which an experimentalist using the scientific method could discern whether a given object was properly predicated of the word.¹¹

Augustine: So do you think that the signification on each level is parasitic on the signification of the lower levels?

Peirce: Indeed I do.

Augustine: Are you saying, then, that the more refined is derived from the less refined? This itself seems like a puzzle.

Peirce: It seems like a puzzle; but it is not really much of a mystery at all. For in the case of all other types of tools, we certainly believe that the more refined arose from the less refined. From mere sticks and stones we eventually developed lasers and scanning electron microscopes. So why shouldn't this be the case with signs, which are but tools of thought, art, and action.

Augustine: I see your point, but it is surely misleading to say that lasers and scanning electron microscopes were developed using only sticks and stones.

Peirce: Of course. There is a long and painstaking evolutionary process in between. Moreover, I am certain that there was many a smashed finger and many a burned hand along the path from sticks and stones to even the most primitive of metal tools. If one includes these factors, it's easier to see that it's never a simple

¹¹ Peirce, *Collected Papers* 8.176 and 5.388-5.410.

move when one attempts to create something more precise and more refined from what is less precise and less refined.

Augustine: I see. And if you're right, there can be no accurate logical reconstruction of the history of signification. The evolution of signs does not proceed from the most logically determined to the least logically determined, but instead from the least to the most, with a lot of painstaking effort in between. The puzzle about the explanation of signs arises because we have assumed that the signification of a sign must be derived from a sign with an equal or greater amount of signification. In other words, we have assumed that the determination of signification proceeds analytically; but in fact it proceeds synthetically. Thus, we cannot logically reconstruct the evolution of signification, because the evolution is not logically determined in the first place.

Peirce: I suppose that is a consequence of my view.

Augustine: But what about the theory of notation?

Peirce: What about it?

Augustine: Suppose that you wanted to create a notation for the theory of notation.

Peirce: Okay.

Augustine: You'd have to come up with signs that stood for signs.

Peirce: I'll grant that.

Augustine: And you'd want to give these signs a definite signification.

Peirce: I'll grant that also.

Augustine: Well, then, how do you do it? Do you just start using these signs with the hope that their signification becomes determinate to those who experience them?

Wittgenstein: I see no other way.

Augustine: But isn't some kind of preliminary explanation of these signs required?

Peirce: It would seem so. But tell me, what kind of signs did you have in mind? Moreover, what is this notation for the theory of notation going to look like? What is it supposed to do?

Augustine: It is supposed to be a notation for talking about signs and sign-systems.

Wittgenstein: Do we really need such a thing?

Augustine: I think we do, for without it, serious confusions can arise.

Wittgenstein: What kind of confusions do you have in mind?

Augustine: For example, in my work *De Magistro*, I give a demonstration that all words are nouns.¹²

Wittgenstein: Ah ha! You *did* have that naïve view of language!¹³

Augustine: Not really. It was all just a sophisticated confusion over the use and mention of a word. I reasoned as follows. Suppose we are looking out over a field and we see an object in the distance; but we cannot discern what kind of thing it is.

Wittgenstein: I follow you.

Augustine: Suppose, further, that we know it is either a stone or an animal, but we cannot tell which.

Wittgenstein: Okay.

Augustine: Now suppose that I say to you "It is an animal because it is a man." What would you say to me?

Wittgenstein: I would say that your argument begs the question. For surely I will not accept that it is a man, if I am uncertain as to whether it is an animal.

Augustine: And your reply would be most appropriate. But suppose that I said, "It is an animal, if it is a man."

Wittgenstein: In that case you would have said something true, but that still would not help me determine whether that object is an animal or a stone.

Augustine: Very good. But you see the difference between these two statements. Right?

Wittgenstein: Of course. One is really an argument while the other is a conditional statement.

¹² Augustine, *The Teacher*, pp. 116 (King Translation)

¹³ Wittgenstein, *Philosophical Investigations*, paragraph 1.

Augustine: Exactly. We might say, "because makes an argument" and "if makes a conditional statement."

Wittgenstein: Yeah. So what?

Augustine: Well, what is the subject of those last two statements?

Wittgenstein: The words 'because' and 'if'.

Augustine: Precisely! But if something is a subject of a sentence, then it must be a noun. Therefore the words if and because must be nouns.

Wittgenstein: Is that why you think all words are nouns? Because all words can occur as the subject of a sentence?

Augustine: It's not as if I really *believe* it. I was only trying to teach Adeodatus about the difference between material supposition and formal supposition.

Peirce: I thought that the theory of supposition did not come about until the twelfth century.

Augustine: That's true. But I already had the basic idea in the fourth century. It took another eight centuries to work out the finer details.

Wittgenstein: Are you trying to tell me that this whole discussion boils down to a problem over use and mention? Is that what detains me from my walk?

Augustine: It is just one of the issues that the foundation of the theory of notation must address. There are others too. However, it is growing late and the threat of the storm has passed. Perhaps we should part ways. In the future, we can meet again and discuss these matters in greater detail.

Peirce: Thanks so much for the conversation. Good evening, gentlemen.

Wittgenstein: Well Augustine, I guess I'll also be on my way. I'll keep these thoughts about notation in the back of my mind. Tschüss!

Augustine: Good bye for now, Wittgenstein.

[*The three men part ways.*]

PART II
PROVIDING AN ACQUAINTANCE WITH SIGNS

§1 OVERVIEW

This groundwork to the theory of notation aims at a fundamental understanding of signs. Signs exist. And insofar the previous sentence is composed of signs, it provides justification for its own truth.

Not only do signs exist, but signs are often used in a systematic way to express and communicate information. And here we find, once again, a sentence, which if properly examined, provides us with a justification of its own truth. One can also use signs to ask specific questions. For example, one might ask: How can signs be used to ask a specific question?

The aim of this groundwork is to understand signs—to understand what they are, how they work, what we can do with them. It is also central to this investigation to discover how we can talk about them.

§2 SIGNS AND PHILOSOPHY

Philosophers (like everyone else) must use signs to express their thoughts. There is no way of getting around this. Indeed, philosophical activity can be generally characterized as the expression and communication of philosophical thoughts through the use of signs. It is possible, however, to try to resist this characterization by arguing that philosophy can be done without the use of signs.¹⁴ After all, it seems possible to think philosophical thoughts without expressing or communicating those thoughts. Signs, it could be argued, are

¹⁴ It is, of course, impossible to argue this point (or to argue any other point for that matter) without the use of signs.

required only for the expression and communication of philosophical thought, not for the thought itself. We must grant that this is a debatable issue, the resolution of which depends, by and large, on what counts as a sign and what counts as a philosophical thought. But if we follow what Charles Peirce says in this regard, we find that what seemed possible on first glance is really not a possibility at all, since all thought requires the use of signs. Peirce writes:

If we seek the light of external facts, the only cases of thought which we can find are of thought in signs. Plainly, no other thought can be evidenced by external facts. But we have seen that only by external facts can thought be known at all. The only thought, then, which can possibly be cognized is thought in signs. But thought which cannot be cognized does not exist. All thought, therefore, must necessarily be in signs.¹⁵

With the exception of knowledge, in the present instant, of the contents of consciousness in that instant (the existence of which knowledge is open to doubt) all our thought and knowledge is by signs.¹⁶

Reasoning is nothing but the discourse of the mind to itself. Divest the thought of signs and it ceases to be thought, and becomes at best, direct perception.¹⁷

We may also consider what Gottlob Frege writes:

Signs have the same importance for thought that discovering how to use the wind to sail against the wind had for navigation. Thus, let no one despise signs. A great deal depends upon choosing them properly. And their value is not diminished by the fact that, after long practice, we need no longer produce [external] signs, we need no longer speak out loud in order to think; for we think in words nevertheless, and if not in words, then in mathematical or other signs.¹⁸

Finally, we may also consider what Ludwig Wittgenstein writes:

¹⁵ Peirce, *Collected Papers*, 5.251. (1868)

¹⁶ *Ibid.*, 8.332. (1904)

¹⁷ Peirce, C. S., *The Charles S. Peirce papers [in] the Houghton Library, Harvard University*. Reel 32 S27

¹⁸ Frege, *On The Scientific Justification of a Conceptual Notation*, p. 84. I have taken the liberty of replacing the translated English word 'symbol' with the word 'sign' in the above passage, since the German word 'zeichen' is correctly translated with either term.

It is misleading, then, to talk of thinking as of a "mental activity". We may say that thinking is essentially the activity of operating with signs. This activity is performed by the hand, when we think by writing; by the mouth and larynx, when we think by speaking ...¹⁹

If Peirce, Frege and Wittgenstein are correct, we must conclude that philosophical thought, even if never expressed, is very much caught up in the business of signs. Moreover, even if one doubts the force of this conclusion, it must be admitted that speaking, reading and writing certainly involve the use of signs. Thus a philosopher who claims to philosophize without signs must be one who claims to philosophize without reading, writing, or speaking. It is obvious, however, that philosophy without these things is really no philosophy at all—philosophy is not possible without the use of signs.²⁰

Philosophers, then, must use signs. Yet it does not follow from this fact that they must have a fundamental understanding of how their signs work. There are many cases in which a person knows how to use something, even though that person has very little understanding of how it works. A large majority of the people who use computers, for example, have no understanding of the nature of computers and how they work. Nevertheless, they use them. And it appears that the same thing is true of signs. We know how to use them, but few if any of us have a real understanding of what they are and how they work.

And so we see that one need not have an understanding of signs in order to philosophize—a philosopher needs only to use them. But now consider the imperative: if philosophers must use signs, then every philosopher *ought to* have

¹⁹ Wittgenstein, *Blue and Brown Books*, p. 6

²⁰ Of course, philosophy is not the only discipline that finds itself in this predicament; the same can be said about every discipline.

an understanding of signs. This kind of imperative (like almost every imperative) is likely to meet with some disagreement. An opponent might counter: philosophers must breathe in order to do philosophy, but this does not entail that all philosophers ought to have an understanding of their own respiratory system before they begin to philosophize. Another might argue: poets, mathematicians, artists, physicists, biologists, and just about everyone devoted to either art or science, must use signs while engaged in their vocation; but it is absurd to think that they all are required to have an understanding of signs. These counter-examples are legitimate. They show that even though philosophers must use signs in order to philosophize, this, by itself, is not a sufficient reason for commanding philosophers to seek an understanding of signs.

There may be other reasons, however, beyond the fact that they must use them, to command philosophers to seek an understanding of signs. For example, perhaps it can be demonstrated that philosophers who do not understand how their signs work are more likely to make philosophical errors. Or, perhaps it can be shown that an understanding of signs allows one to make greater progress in philosophy. If these things could be shown, then one could respond to the counter-examples in the following way. The reason that philosophers should seek an understanding of signs is not merely that they must use them—that is only part of the reason. The other fact that must be acknowledged is that one is more able to philosophize if one has an understanding of signs. This is the difference between the case of signs and the case of breathing; for it is far less obvious how learning about one's respiratory system will allow one to philosophize more

effectively. Moreover, if it can be shown that it is likely that one will become a better philosopher by acquiring an understanding of the respiratory system, then we may reasonably admit that every philosopher ought to seek that too. In response to the second counter-example, we may likewise admit that, if it can be shown how mathematicians or poets are more able to do their work well if they have an understanding of signs, then it is reasonable to maintain that they should seek an understanding of signs as well. But these kinds of responses presuppose that we have demonstrated that an understanding of signs allows a philosopher to philosophize more adequately; and this is something we have not demonstrated.

Instead of attempting to demonstrate how an understanding of signs is important for philosophers in general, let us leave the issue open. If the imperative has not been justified, at least it has been suggested. And perhaps a mere suggestion is sufficient at this point, for we have not yet even established what a sign is.

§3 A PRELIMINARY NOTION OF A SIGN

In keeping with a certain tradition, I intend to apply the predicate 'is a sign' to a very wide range of things that may seem, at first glance, to be very different from each other.²¹ According to this tradition, a word is a sign; a traffic light is a sign; a painting is a sign; and a gesture is a sign. Many other kinds of things are signs as well. Smoke is often a sign of fire; a small stone on a grave is often a sign that someone has paid a visit to the resting place of the deceased. In Chapter

²¹ The tradition of using the term 'sign' in this manner can be called the *Semiotic Tradition*. Its origins can be traced back to the work of St. Augustine; and the tradition was maintained by philosophers like Charles Peirce, Charles Morris, Umberto Eco, and many others.

3 of this work, I will propose rather precise conditions for the application of the predicate 'is a sign'. But since inquiry and explanation must begin somewhere, it will be helpful to develop a preliminary notion of a sign that can be used to address some important points that require immediate attention.

Every sign, qua sign, has a dual nature. Insofar as anything can function as a sign, it must be an object of some experience, and thus it must have what I will call an *objectic nature*.²² Anything having an objectic nature has *objectic properties*, i.e., it has properties qua object.²³ But not everything that has an objectic nature is a sign.²⁴ Signs are distinguished from mere objects insofar as signs also have a *semantic nature*. To say that an object *O* has a semantic nature is to say that, in addition to its objectic properties (i.e. properties qua mere object of experience), *O* has the property of signification.²⁵ To help explicate this point, consider the following object:



²² From what I have said here, it would seem to follow that all signs (or at least all functioning signs) are objects. This result is not only tolerable, but also desirable at this early stage of our inquiry, where we are painting in broad strokes in an attempt to layout the general form of the picture. It would be more accurate to say that all signs are things of experience, as opposed to objects of experience. But the introduction of these finer grained metaphysical distinctions in this preliminary account would likely obscure the general point that needs to be grasped here. Besides, the term 'thingic properties' offends the eye, the ear and the tongue. The ontological question as to whether all (or even any) signs really are objects will be considered in greater detail in Chapter III.

²³ Following a medieval tradition, Peirce used the term 'material qualities', to mark what I mark with the term 'objectic properties' (see CP 5.287 and W3: 62-68). Since, however, many objects of experience have both a matter and a form, if we use Peirce's terminology, the form or shape of a sign would be part of its material quality, not its formal quality. This seems odd and opens the door to confusion. Thus I have not adopted Peirce's terminology on this point.

²⁴ This is a claim that has been contradicted by some philosophers. Some philosophers claim that everything is a sign, others that everything we experience is a sign. But since we are interested in developing an intuitive and preliminary account, these kinds of issues must be set aside. See Nöth pp. 81-83 for a general discussion of the issue.

²⁵ The term 'signification' is used here to mark the most general (or highest genus of) semantic relation; all other semantic relations are a species of signification.

This object, which is a mound of black ink, lacks something which the following object (also a mound of black ink) has:

HELP!

The former object can be taken as an example of a mere object; it has the objectic properties of being square, being black, being ink, being on a page, etc., but it has no semantic properties. The latter object, on the other hand, in addition to its objectic properties of being black, being ink, being on a page, etc., has semantic properties and is thus a sign.

PART III DISCOURSE AND MERE OBJECTS

§1 OVERVIEW

In preceding section the notion of a mere object was introduced. We will now turn to investigate the relationship between mere objects and discourse, and more specifically, to discern how, if at all, mere objects can enter into a discourse, and whether introducing such objects is desirable.

§2 ON THE POSSIBILITY OF BRINGING MERE OBJECTS INTO A DISCOURSE

To discourse on any subject matter is to speak or write in an orderly fashion about that subject matter.²⁶ And, as mentioned earlier, speaking and

²⁶ In this work, I use the term 'discourse' sometimes as a noun and sometimes as a verb. But in either case, there is nothing postmodern about my use of the term 'discourse'. A discourse merely involves the formal, orderly, and extended expression of thought on a subject. Thus, I use the term in the way that John Locke (*An Essay Concerning Human Understanding*) and John Stuart Mill (*A System of Logic*) used it; and I assume that such a use is unobjectionable. I prefer the

writing are actions that necessarily involve the use of signs. Therefore, to discourse on any subject matter is to use signs. It does not matter whether the subject of discourse is Venus, a cluster of strawberries, or the foundations of mathematics, signs must be used. And this rule holds without exception. Therefore, when signs are themselves taken as the subject matter of a discourse, one needs to *use* signs to discourse *about* signs.

In principle, discoursing on signs presents no special theoretical difficulties. On the contrary, it often presents unique opportunities; for when discoursing about signs, it is often possible to present within one's discourse the very thing about which one is discoursing. For example, if I want to discourse about a certain written word within in a written discourse, it is often possible for me to present the very word itself (i.e., I can exhibit the objectic nature of the word to my audience by producing it). If I want to discourse about a certain spoken word in a spoken discourse, once again, I can present the very word itself. It is true that I cannot present a spoken word in a written discourse, but that is no great cause for alarm, since I cannot present Venus, a cluster of strawberries, or a number either.²⁷ Indeed, the impossibility of presenting the object of one's discourse within one's discourse is the norm, and the cases in which it is possible to do so are exceptions.

One can try to imagine, however, a case in which every object of one's discourse is brought into the discourse, thus doing away with the use of signs

term 'discourse' over either 'talk' or 'write' because it is more general—the term 'talk' referring to speech specifically, while 'write' clearly excludes the spoken.

²⁷ One should not confuse numerals, which are the signs of numbers, with numbers themselves.

completely. This seems to be similar to the idea that struck the Laputian scientists in Jonathan Swift's novel, *Gulliver's Travels*. Swift reports:

We next went to the School of Languages, where three Professors sat in Consultation upon improving that of their own country.

The first Project was to shorten Discourse by cutting Polysyllables into one, and leaving out Verbs and Participles, because in reality all things imaginable are but Nouns.

The other, was a Scheme for entirely abolishing all Words whatsoever; and this was urged as a great Advantage in Point of Health as well as Brevity. For it is plain, that every Word we speak is in some Degree a Diminution of our Lungs by Corrosion, and consequently contributes to the shortning of our Lives. An Expedient was therefore offered, that since Words are only Names for *Things*, it would be more convenient for all Men to carry about them, such *Things* as were necessary to express the particular Business they are to discourse on. And this Invention would certainly have taken Place, to the great Ease as well as Health of the Subject, if the Women in conjunction with the Vulgar and Illiterate had not threatned to raise a Rebellion, unless they might be allowed the Liberty to speak with their Tongues, after the manner of their Ancestors; such constant irreconcilable Enemies to Science are the common People. However, many of the most Learned and Wise adhere to the New Scheme of expressing themselves by *Things*, which hath only this Inconvenience attending it, that if a Man's Business be very great, and of various kinds, he must be obliged in Proportion to carry a greater bundle of *Things* upon his Back, unless he can afford one or two strong Servants to attend him. I have often beheld two of those Sages almost sinking under the Weight of their Packs, like Pedlars among us; who, when they met in the Streets, would lay down their Loads, open their Sacks, and hold Conversation for an Hour together; then put up their Implements, help each other to resume their Burthens, and take their Leave.

But for short Conversations a Man may carry Implements in his Pockets and under his Arms, enough to supply him, and in his House he cannot be at a loss: Therefore the Room where Company meet who practise this Art, is full of all Things ready at Hand, requisite to furnish Matter for this kind of artificial Converse.²⁸

In this passage, Swift gives us two possibilities to imagine. The first is a language composed exclusively of nouns, while the second appears to be a system of communication devoid of all signs. The first possibility, although an important

²⁸ Swift, *Gulliver's Travels*, pp. 177-178.

one to consider, is not of immediate concern.²⁹ Our primary interest lies in attempting to imagine the second possibility.

The second "possibility" that Swift would have us imagine (i.e., a discourse devoid of all signs) is similar to the possibility that M.C. Escher gives us to imagine with his print *The Waterfall*. In both cases a contradiction is hidden behind a consistent façade. For what is it that one imagines when one imagines this new Laputian language? What are the things that are carried around in one's sack? If one imagines them as miniature models of the things to be discussed, then (even though there are no words in this discourse) the discourse proceeds in terms of signs nonetheless, for the miniature models are not the things themselves, but signs of those things. On the other hand, let us suppose that Swift is not proposing a sack filled with little models, but, instead, a sack filled with the very things themselves. In that case, what size sack are we imagining? Well, let us imagine the biggest sack that we can. And let us imagine it filled it with whatever we like. So far there is nothing impossible here. Now, let us imagine the discourse taking place. What is it that we imagine being expressed in such a discourse, and how do we imagine it being expressed? Things are taken out of the sack; they are placed on the ground in a certain order; and then ...? "Well," one might say, "then we have expressed that things are out of the sack and on the ground in a certain order." If this were true (viz. that we have expressed that

²⁹ Although pursuing this line of inquiry would take us off the main track, it is worth noting that, regardless of whether or not it is possible for a language to be composed exclusively of nouns, Wittgenstein thought it important to remind other philosophers that not all words in a natural language like English are nouns. See his *Philosophical Investigations*, Part I, § 1, for example.

things are out of the sack and on the ground in a certain order), then this Laputian language would certainly count as one of the most logically perfect systems of expression imaginable. Not only would one be prevented from expressing impossibilities, one could not even express something that is false. Unlike our natural language, every expression in this system is grammatical (or well-formed); every expression is meaningful; every expression is possibly true; every expression is actually true; every expression is necessarily true!³⁰ This Laputian language would indeed be a logically perfect system of expression, if it could be counted as a system of expression at all. But in fact, it cannot be so counted. There is no expression here; there are no signs; there is no discourse. There are only objects lying on the ground out of the sack. In short, a discourse that consists exclusively of mere objects to the exclusion of all signs is no discourse at all. In such a case, discourse degenerates, into mere exhibition. Peirce said, "divest the thought of signs and it ceases to be thought, and becomes at best, direct perception."³¹ In a similar way, divest the discourse of signs and it ceases to be discourse, and becomes at best, an exhibition of a fact.

From what has been said above, it should be evident that from a purely theoretical perspective a discourse requires at least the use of some signs. But beyond the theoretical necessity, there is a practical necessity of using signs while discoursing. As Aristotle says at the beginning of *Sophistical Refutations*:

³⁰ This, of course, is not to say that it is necessarily true in the sense that it is true in all possible worlds; it is only necessarily true in the sense that there is no possibility of the expression being false in the actual world.

³¹ Peirce, C. S., *The Charles S. Peirce papers [in] the Houghton Library, Harvard University*. Reel 32 S27

It is impossible in a discussion to bring in the actual things discussed: we use their names as symbols instead of them; and we suppose that what follows in the names, follows in the things as well, just as people who calculate suppose in regard to their counters.³²

There are two issues raised in this short passage that are of great concern for the theory of notation:

- i) Is discourse always restricted to signs, and thus always one step removed from the things discussed?
- ii) Can we be certain that what follows in our signs, follows in the things themselves?

The second of these questions will not be addressed in this groundwork, although the answer to this question is of supreme importance, particularly for those who are concerned with the nature of proof and the nature of modality.³³ As for the first question, we will presently look at it more closely.

It should be evident that it is not always impossible to bring the actual things we are discussing into the discussion. As mentioned earlier, when discoursing about signs, it is often possible to bring in the object of discussion. But in this respect, discoursing on signs is not wholly unique. After all, if an architect plans on discussing certain building materials like blocks, pillars, slabs, beams, etc., he might very well bring some of these things with him and display them before his audience. There are, however, limitations here. If an architect is discussing a certain building, like the Empire State Building, it will be impossible for him to bring the object of his discussion into the room. He will be obliged to

³² Aristotle, *Sophistical Refutations*, (165^a 6-10).

³³ One major concern for those interested in modality is whether things which are either necessary or possible in signs are likewise necessary or possible in reality as well.

use a sign of the building instead.³⁴ And if he is discussing one of the towers of the World Trade Center after September 11th, 2001, he will, once again, find it impossible to bring the object of his discussion into the room—though the impossibility in this latter case is of a different nature.

Shall we thus conclude, with regard to *bringing in* the object of discussion, that sometimes it is possible, other times it is not? Such a conclusion seems fair enough. Nevertheless, there is an alternative way of construing this passage from Aristotle that leads to a different conclusion. For if we assume i) a discourse must be composed exclusively of sentences; and ii) a sentence must be composed exclusively of signs, then it will follow that a discourse must be composed exclusively of signs. But if a discourse must be composed exclusively of signs, then (as Aristotle says) it is impossible to bring mere objects into a discourse.

Let us use the description 'the discursive homogeneity thesis' to signify the thesis that a discourse must be composed exclusively of signs. Similarly, let us use the description 'the sentential homogeneity thesis' to signify the thesis that a sentence must be composed exclusively of signs.

Regardless of whether it is correct to interpret Aristotle as an advocate of either of these theses, other influential philosophers certainly have entertained and endorsed them. W.V. Quine, for example, writes the following in *Mathematical*

Logic:

. . . a statement about an object must contain a name of the object rather than the object itself.³⁵

³⁴ He could, of course, bring a picture or a scale model of this building into the room, but these things are themselves merely signs (or representations) of the building.

³⁵ Quine, *Mathematical Logic*, pg. 23. (1940)

Notice that Quine uses the word 'must' in this passage. Here it seems as if Quine is endorsing something like the sentential homogeneity thesis. A more explicit statement of the sentential homogeneity thesis is given by Alfred Tarski in

Introduction to Logic:

. . . it is well to make clear to oneself a very general and important principle upon which the useful employability of any language is dependent. According to this principle, whenever, in a sentence, we wish to say something about a certain thing, we have to use, in this sentence, not the thing itself, but its name or designation.

The application of this principle gives no cause for doubt as long as the thing talked about is not a word, a symbol or, more generally, an expression of language. Let us imagine, for example, that we have a small blue stone in front of us, and that we state the following sentence:

this stone is blue.

To none, presumably, would it occur in this case, to replace in this sentence the words "*this stone*" which together constitute the designation of the thing by the thing itself, that is to say, to blot or cut these words out and to place in their stead the stone. For, in doing so, we would arrive at a whole consisting in part of a stone and in part, of words, and thus at something which would not be a linguistic expression, and far less a true sentence.³⁶

It is clear from this passage that Tarski would not allow a slab to function as the noun phrase of a sentence. It is also clear that Tarski was a staunch advocate of the sentential homogeneity thesis. Nevertheless, not all respected logicians have agreed.

In *The Logical Syntax of Language*, Rudolf Carnap writes:

Since the name of a given object may be chosen arbitrarily, it is quite possible to take as a name for the thing, the thing itself, or, as a name for a kind of thing, the things of this kind. We can, for instance, adopt the rule that, instead of the word 'match', a match shall always be placed on the paper.³⁷

³⁶ Tarski, *Introduction to Logic and to the Methodology of the Deductive Sciences*, pp. 58-59. (1941)

³⁷ Carnap, *The Logical Syntax of Language*, pg. 156. (1934)

In this passage, we find that Carnap disagrees with Tarski. Carnap finds no logical objection to a *non-word* functioning as an essential constituent of a sentence. Is it correct, then, to conclude that Carnap rejects the sentential homogeneity thesis? Here one must be careful. Carnap is *not* rejecting the sentential homogeneity thesis, since he never says that a mere object can function as a constituent of a sentence. According to Carnap, the match (in the case described above) is the name of itself; and insofar as the match is a name, it is also a sign.

Let us take one step beyond Carnap. Let us use the description 'a heterogeneous construct' to apply to any construct that is composed of an admixture of mere objects and signs. Consider the construct on the line below.

■ is a square spot of ink.

In this case we have a square spot of ink conjoined with the predicate 'is a square spot of ink'. Now, it is important to keep in mind that the square spot of ink is not the name of itself; it is simply a mere object conjoined with a predicate. Do we have any reason for denying that this construct is a sentence? One may argue, perhaps, that it does not express a thought, and so it is not a sentence. But doesn't it express a thought? If not, we can easily imagine a language game in which it is used to express a thought. Are we to conclude that it is not a sentence by way of the following argument?

A sentence must be a construct composed exclusively of signs.

The square is not a sign.

The above construct is not a sentence.

Okay; if one buys the sentential homogeneity thesis, then the construct involving the square spot of ink is not a sentence. That only reveals that there are other ways of expressing thoughts besides the use of sentences. But why not call it a sentence? Why not call it a *heterogeneous sentence*? After all, it is more like a sentence than anything else.³⁸

The primary question we set out to investigate was whether mere objects can enter into a discourse. But now we see that there are at least two different ways that mere objects can *enter into a discourse*. In one sense, mere objects can enter into a discourse in the capacity of examples. In this type of case, the mere objects are not part of any sentence of the discourse, for the sentences are composed exclusively of signs. Nevertheless, the mere objects are in the vicinity of the person discoursing (or the person receiving the discourse); and they can be pointed to or held up in conjunction with the expression of a sentence. For example, the speaker may pronounce, 'this is a slab' while pointing to a slab. This use of mere objects may be called *the exhibitiv use of mere objects*. In contradistinction to the exhibitiv use, a mere object can enter into a discourse as an essential constituent of a sentence of that discourse. For example, the speaker may pronounce 'is a slab' while directing the audience's attention to a particular

³⁸ The basic idea of a heterogeneous sentence was suggested in 1967 by Neils Christensen, although he did not use this term to describe them (see Christensen 1967). Paul Saka discusses issues along these lines in his article "Quotation and the Use-Mention Distinction" (see Saka 1998). He writes, "Only a foreign speaker would ever point at a car and say 'is a Studebaker'." Here we get the suggestion that this type of construction does not conform to the standards of English grammar (whatever they may be). I am inclined to agree. But that does not entail that the construction is nonsense.

slab. This type of use of mere objects may be called *the constitutive use of mere objects*.³⁹

When we move away from mere objects, however, and begin to consider the possibility of bringing signs into our discourse as if they were mere objects, we find the need for further terminological distinctions. Signs, it should be recalled, are objects that have both a semantic nature and an objectic nature, while mere objects have only an objectic nature (see Part II, §3 of this chapter). If the use of an object relies only on the objectic properties of the object, then we will say that the object is used *de re*. But if the use of an object relies on some of its semantic properties, then we will say that the object is used *de signo*.⁴⁰ Since mere objects have no semantic properties, they can only be used *de re*. But signs, on the other hand, have both kinds of properties, and thus the use of a sign can be either *de re* or *de signo*.

Finally, since the *de re* use of any object can be either exhibitiv or constitutive, the *de re* use of a sign can be either exhibitiv or constitutive. And it is important to keep in mind that if the *de re* use of a sign is also constitutive, then the sentence in which it occurs is really heterogeneous and thus violates the sentential homogeneity thesis; for although the sentence in which the sign occurs may be composed exclusively of signs in one sense, some of the signs are not

³⁹ It is called *the constitutive use* because in such a case the mere object actually constitutes part of the discourse, and the discourse would be incomplete without it.

⁴⁰ Some will notice that the *de re/de signo* distinction seems to parallel the distinction made by the medieval logicians between material and formal supposition, or the more modern distinction between use and mention. I avoid the medieval terminology for reasons similar to those given in an earlier footnote (Chapter I, Part 2, §3). Moreover, there is an important dissimilarity between the *de re/de signo* distinction and these other distinctions, since (as defined) *de re* and *de signo* use are mutually exclusive, while there are cases like 'Giorgione was so called because of his size' in which a term is both used and mentioned, and seems to have both material and formal supposition.

being used as signs, but instead as if they were mere objects. Thus, in the sense that is important, the sentential homogeneity thesis is violated by the constitutive de re use of signs. In fact, in order to help clarify this point and avoid misunderstanding in this regard, the sentential and discursive homogeneity theses will be reformulated as follows:

Sentential Homogeneity thesis – Every object in a sentence must be used de signo (or be a part of a lexical item used de signo).

Discursive Homogeneity thesis – Every object in a discourse must be used de signo (or be a part of an lexical item used de signo).

Furthermore, let the following be the working definition of a heterogeneous sentence:

x is a heterogeneous sentence iff x is a sentence and there is a grammatical part of x that is used de re.

§3 THREE POSITIONS ON THE DE RE USE OF OBJECTS IN A DISCOURSE ON SIGNS

I have already said that it is often possible, while discoursing on signs, to bring the objects we are discussing into our discourse in the capacity of mere objects. To do so is to engage in a de re use of such objects. And I have also said that there are at least two different ways that this can be accomplished: a de re use may be either exhibitivite or constitutive. At this point, we are left with the problem of discerning whether there are any good reasons for admitting the de re use of objects in a discourse on signs, and also whether there are good reasons for avoiding this kind of use.

Before we begin to consider arguments either way, it will be helpful to point out that there are really three different positions that one can take on this issue:⁴¹

- Position #1 Accept both the sentential and discursive homogeneity theses—reject the de re use of objects both within sentences and in discourse generally.
- Position #2 Accept the sentential but reject the discursive homogeneity thesis—reject the de re use of objects within sentences but permit it in discourse.
- Position #3 Reject both the sentential and discursive homogeneity theses—permit the de re use of objects both within sentences and discourse.

If we find that there are good reasons for the de re use of objects in our discourse, then we must take either position #2 or #3, since position #1 bans the de re use of objects from *all* discourse. Yet before we consider whether there is any good argument for the de re use of objects, let us reconsider the arguments in favor of the sentential homogeneity thesis, since if we find that there is a good reason for maintaining this, then position #3 will be ruled out, thus turning any argument in favor of the de re use of objects into an argument for position #2.

§4 THE ARGUMENTS FOR THE SENTENTIAL HOMOGENEITY THESIS AND AGAINST THE DE RE USE OF OBJECTS WITHIN A SENTENCE

Two distinct arguments for the sentential homogeneity thesis warrant consideration. The first is the argument from ungrammaticality, which is given by Tarski; the second is the argument from ambiguity, which is presented by

⁴¹ A fourth position might be considered: Reject the sentential thesis but accept the discursive thesis. This position is not a possibility, however, since there is no way to allow the de re use of objects within a sentence but forbid it within a discourse, unless those sentences are kept out of the discourse.

Frege. Both arguments can be taken as arguments against heterogeneous sentences. They differ in their effects, however, since the argument from ungrammaticality, if it works, rules out the de re use of *all* objects within a sentence, while the argument from ambiguity, if it works, only rules out the de re use of *signs*, leaving the issue open as to whether mere objects (i.e. non-signs) can occur de re in a sentence.

According to Tarski, the reason for banning heterogeneous sentences is that by permitting them one oversteps the bounds of grammaticality and ends up falling into a crevasse of nonsense. When considering the heterogeneous sentence involving the blue stone, for example, Tarski says that it is not even a "linguistic expression, and far less a true sentence." Coming from Tarski, however, the argument from ungrammaticality seems particularly weak, since he denies (or at least seems seriously to doubt) that the grammar of a natural language like English is exactly specifiable anyhow. He writes:

The problem of the definition of truth obtains a precise meaning and can be solved in a rigorous way only for those languages whose structure has been exactly specified. For other languages—thus, for all natural, "spoken" languages—the meaning of the problem is more or less vague, and its solution can have only an approximate character.⁴²

This passage suggests that the structures of natural languages are not exactly specifiable. Earlier in the same paper, however, he writes:

There are certain conditions under which the structure of a language is regarded as *exactly specified*. Thus, to specify the structure of a language, we must characterize unambiguously the class of those words and expressions which are to be considered *meaningful*.⁴³

⁴² Tarski, "The Semantic Conception of Truth and the Foundations of Semantics," p. 65.

⁴³ *Ibid.*, p. 65. I take Tarski to be saying that the structure of a language can be exactly specified *if and only if* the class of meaningful expressions can be unambiguously characterized.

Here Tarski ties meaningfulness and grammaticality together. If taken in conjunction, these two passages from Tarski suggest that there are no settled criteria that determine what counts as a grammatical and meaningful expression in a natural language. Moreover, if (i) the heterogeneous sentence with the square of black ink expresses a thought, (ii) all sentences that express a thought are meaningful, and (iii) meaningfulness is a sufficient condition for grammaticality, then it seems that some heterogeneous sentences are indeed grammatical. In short, the ungrammaticality argument for the sentential homogeneity thesis rests on the assumption that heterogeneous sentences *cannot* express a thought; and this is a dubious assumption.

There is, however, a different argument, presented by Frege, for banning certain kinds of heterogeneous sentences from a discourse. The argument does not propose to ban such sentences because they are ungrammatical or have no meaning. Quite the contrary, the argument proposes to ban such sentences because they have the potential to have too many meanings—i.e., such sentences are often ambiguous (or, as it were, amphibolous). According to Frege, ambiguity is the nemesis of precise expression; and he thought that if one wanted to avoid error and confusion in philosophy, the first requirement that must be fulfilled is the elimination any potential ambiguity from one's modes of expression. He wrote:

Language proves to be deficient, however, when it comes to protecting thought from error. It does not even meet the first requirement which we must place upon it in this respect; namely, being unambiguous.⁴⁴

Frege's argument can be constructed as follows:

⁴⁴ Frege, *On The Scientific Justification of a Conceptual Notation*, p 84.

- (i) If one permits the de re use of signs in one's sentences, then he opens the door to ambiguity in his discourse.
- (ii) If one opens the door to ambiguity in his discourse, then he opens the door to potential confusion and errors in thought.
- (iii) One should never open the door to potential confusion and errors in thought.
- ∴ One should never permit the de re use of signs in one's sentences.

In order to prevent ambiguity and thus potential errors in thought, Frege rigorously followed the convention of placing a written sign within single quotation marks to form an expression that designated that sign.⁴⁵ This quotation expression was used, instead of the sign itself, in any sentence about that sign. He writes:

The frequent use made of quotation marks may cause surprise. I use them to distinguish the cases where I speak about the sign itself from those where I speak about what is meant by it. Pedantic as this may appear, I think it necessary. It is remarkable how an inexact mode of speaking or writing, which perhaps was originally employed only for greater convenience or brevity and with full consciousness of its inaccuracy, may end in a confusion of thought, when once that consciousness has disappeared. People have managed to mistake numerals for numbers, names for things named, the mere devices of arithmetic for its proper subject matter. Such experiences teach us how necessary it is to demand the highest exactness in manner of speech and writing. And I have taken pains to do justice to such demands, at any rate wherever it seemed to be of importance.⁴⁶

To understand the kind of error that Frege was hoping to avoid, consider the following argument:

- (i) 3 stands for the number three.
- (ii) $3 =$ the number three
- ∴ the number three stands for the number three.

The first premise of this argument is true only if it is taken to be a heterogeneous sentence, i.e., if we take the numeral '3' to be used de re. In the second premise,

⁴⁵ Actually, Frege strictly applied this convention only in his later works.

⁴⁶ Frege, *Grundgesetze Der Arithmetik*, Volume 1, (in Geach and Black) p. 131

however, the numeral '3' is used de signo as a name of the number three. Both premises are true, if so taken. But by substituting equals for equals, we get a conclusion which is clearly false, unless we take the conclusion itself to be a heterogeneous sentence (i.e., unless we take the first occurrence of 'the number three' in the conclusion to be used de re and the second occurrence to be used de signo). If this all seems confusing, or if you are inclined to disagree with the way I am interpreting the premises and the conclusion of this argument, all the better. Such confusions and disagreements, in the end, only further legitimize Frege's concern.⁴⁷

In order to prevent this kind of problem, we can follow Frege's convention and reformulate the argument in the following way:

- (i) '3' stands for the number three.
- (ii) 3 = the number three
- ∴ the number three stands for the number three.

But if so formulated, the conclusion no longer follows from the premises by the substitution of equals. The premises only yield, via the substitution of equals for equals, the following conclusion:

- ∴ 'the number three' stands for the number three.

This conclusion, of course, is true. Nevertheless, the inference from the premises to the conclusion remains suspect, since it requires the substitution of equals for equals within the context of quotation marks, and we know that such substitutions often lead from true premises to a false conclusion. Consider the following case:

⁴⁷ Even if a person could find a way of interpreting the argument so that it makes perfect sense, this would not automatically resolve the problem—it would not eliminate the potential ambiguity. Using Davidson's principle of charity, such an interpretation would at most help one who had to select among the possible interpretations.

- (i) '3' is an Arabic numeral
- (ii) 3 = the number three
- ∴ 'the number three' is an Arabic numeral.

There is much more that needs to be said concerning Frege's use of quotation marks to distinguish signs that are mentioned from signs that are used; and more will be said in the next chapter. For now, however, we see at least one good argument for maintaining the sentential homogeneity thesis when it comes to discoursing on signs. Violation of the thesis in some cases opens the door to ambiguity, since the violation of the thesis allows for the possibility of signs to be used both *de re* and *de signo* within a sentence. It is, in fact, this possibility of dual use that gives rise to the ambiguity.⁴⁸

§5 ARGUMENTS FOR THE DE RE USE OF OBJECTS IN A DISCOURSE ON SIGNS

Frege gives us a pretty good reason to prohibit the *de re* use of signs within our sentences. But one cannot conclude from this that there is a good reason for prohibiting the *de re* use of objects within our discourse in general. It may be the case that objects (and particularly signs) *can* be used *de re* in a discourse without the threat of potential ambiguity. Moreover, there are, in fact,

⁴⁸ It is often pointed out that the potential ambiguity of a sign is often defused by paying attention to the context in which the sign occurs. Augustine was perhaps the first philosopher to point this out explicitly. In the dialogue *De Magistro* Augustine formulates what he calls *The Law of Reason* as opposed to *Adeodatus' rule*. The Law of Reason roughly states that we should use contextual clues to determine whether a sign is being used or mentioned. (See Augustine 1995 pp. 125-126) Thus, in the sentence 'Man is a noun' we can tell that 'man' is being used *de re*, since the sentence is false if it is taken as being used *de signo*. Moreover, even in the sentence 'Man is a sign' (a sentence which occurs in the writing of Peirce-CP 5.314) the use of the term 'Man' can be disambiguated, if one looks beyond the sentence itself and surveys the paragraph in which it occurs. But although context is often helpful in disambiguating signs, it is not always a fool proof method, and the threat, as proposed by Frege, remains a legitimate concern.

good reasons for rejecting the discursive thesis and admitting both the exhibitivite use of signs and the exhibitivite use of mere objects within a discourse on signs.⁴⁹

One such reason is that doing so gives our audience a *de re acquaintance* with the things we are talking about. A *de re acquaintance* with a thing is best described as an acquaintance with the thing itself, and is to be contrasted with a *de signo acquaintance*. A *de signo acquaintance* with a certain object *O* is an acquaintance with *O* through signs; and there are many cases in which we have a *de signo acquaintance* with an object, although no *de re acquaintance*. My acquaintance with the Parthenon, for example, is only a *de signo acquaintance*; I have never seen the Parthenon itself, only descriptions and depictions of it. I could, of course, have a *de re acquaintance* with the Parthenon, but that would require that I go to Greece.

In addition to the Parthenon, there are other things with which I have only a *de signo acquaintance*, but not because of my limited travel. My acquaintance with Aristotle, for example, is only a *de signo acquaintance*, and would remain so even if I had a million frequent flier miles. Likewise, my acquaintance with the waterfall depicted by Escher is only *de signo*. It is relevant to note, however, that the impossibility of having a *de re acquaintance* with Aristotle is slightly different than the impossibility of having a *de re acquaintance* with Escher's waterfall—Aristotle was the kind of thing with which *I could have had* a *de re acquaintance*, if I were in the right place at the right time; and indeed, some people *did have* a *de*

⁴⁹ Since all uses of mere objects are *de re*, the phrase 'the *de re* use of mere objects' is redundant. And since all exhibitivite use is *de re*, the phrases 'the *de re* exhibitivite use of signs' and 'the exhibitivite *de re* use of mere objects' are also redundant.

re acquaintance with Aristotle. But no one, I presume, has ever had a de re acquaintance with Escher's waterfall, and no one ever will.⁵⁰

There are two further points worth noting about the relationship between de re and de signo acquaintance. First, it seems possible to be acquainted with a thing de re, while not being acquainted with it de signo. I may have an experience of something, for example, but have no idea about the thing I am experiencing.⁵¹ Secondly, de re and de signo acquaintances are not mutually exclusive. In many cases we are acquainted with a thing in both ways.

To use an object de re in a discourse is to provide the audience of that discourse with a de re acquaintance with that object. And whenever this is possible, it is usually beneficial, since it allows the audience to grasp the subject matter of the discourse in a direct way. To put the point in more colloquial terms: it allows the audience to know what in the world is being talked about.

And when it comes to philosophical discourse, it is often very difficult to discern what in the world is being talked about. Philosophers like to talk about knowledge, virtue, truth, understanding, God, justification, consciousness, meaning, reference, mental representation, content, sets, properties, individuals, essences, substance, minds, matter, form, experience, perception, sensation, the physical world, the phenomenal world, etcetera. Not only is it easy to fail to

⁵⁰ Of course, I am not speaking here of a de re acquaintance with the work of art; for certainly many have had a de re acquaintance with that. I am talking about a de re acquaintance with the object represented in that work of art.

⁵¹ Once we have a concept of something, we thereby have a de signo acquaintance with it, because our concept is a sign of the thing. A case in which a person has a de re acquaintance but no de signo acquaintance would therefore be one in which the thing is experienced, but the person experiencing it has no concept of it. For example, a person might see something in the distance but be incapable of saying what kind of thing it is. He may even be incapable of saying what color or shape it is. In such a case, he can be said to have a de re acquaintance without any de signo acquaintance.

understand what in the world philosophers are talking about, it is easy to wonder whether some philosophers themselves know what in the world they are talking about. Philosophical discourse must proceed through the use of signs; and in many cases there is confusion or misunderstanding about how those signs are used or what they signify. In some cases, one philosopher does not understand what is signified by the signs of another philosopher; in other cases, a philosopher may not even understand what is signified by his own signs.

The philosopher, then, is often in the position of having to figure out what his signs signify. Once he understands this much, he often finds himself having to explain the signification to others. But how does one explain the signification of one's signs? As a general rule, explanation also proceeds through the use of signs. Thus, when pressed to explain the signification of his signs, the philosopher resorts to using more signs. And if the signification of the signs used in his explanation are themselves in need of explanation, he must use yet more signs. Proceeding in this way, there arises a potential for an infinite regress.⁵² To halt this kind of regress in explanation, the philosopher must either use signs whose

⁵² This very problem is addressed by Wittgenstein in his *Philosophical Investigations*, paragraphs 84 through 88. Wittgenstein was not the first to discover the problem, and it is possible that he borrowed it from Augustine's *De Magistro* without mentioning it. In any event, these passages from Wittgenstein are quite relevant to the problems at hand. Wittgenstein's denies (in paragraph 87) that one will eventually get to primitive signs whose signification can longer be questioned. His solution seems to be that explanation ends because we eventually understand what is being explained; and explanation is required only where there exists an actual misunderstanding. He writes, "... an explanation may indeed rest on another one that has been given, but none stands in need of another—unless we require it to prevent a misunderstanding. One might say: an explanation serves to remove or to avert a misunderstanding—one, that is, that would occur but for the explanation; not every one that I can imagine." Wittgenstein's comments on this issue are highly relevant to the project at hand, for it seems that the later Wittgenstein was generally opposed to projects like the one in which I am engaged. He seems to have thought that striving for precision and exactitude in the use of signs is often useless, which perhaps explains his own peculiar style of writing. How many philosophers have wondered: What in the world is Wittgenstein talking about?

signification is already understood and which are thus not in need of explanation (primitive signs), or he must break away from his use of signs by introducing to his audience the very things which his signs signify. This is one of the benefits that the exhibitivum de re use of objects within a discourse provides.

The possibility of moving away from an explanation in terms of signs towards an explanation in terms of mere things is considered by St Augustine in his dialogue *De Magistro*. Augustine says (in response to Adeodatus's attempt to explain the signification of words taken from a certain sentence of Virgil's *Aeneid*):

... surely it's easy for you to notice that you have explained words by means of words. That is to say, you have explained signs by means of signs, and familiar things by the same familiar things. I would like you to show me the very things of which these words are the signs, if you can.⁵³

In this passage, Augustine presents Adeodatus with a challenge, viz., to explain the signification of certain signs without using signs. This challenge is actually more difficult to meet than one might expect, since even acts of ostension fail to satisfy the challenge. An act of ostension will normally involve pointing to something, and insofar as (i) pointing is a gesture and (ii) all gestures are signs, the explanation of a sign through an act of ostension involves the use of signs.⁵⁴ Nevertheless, as the dialogue progresses, Augustine and Adeodatus ultimately conclude that there are cases in which it is possible to explain the signification of a sign without using any other signs. The example suggested by Augustine is one where a student asks to be taught the signification of the word 'walking' while

⁵³ Augustine, *The Teacher*, p. 99. (King translation)

⁵⁴ Augustine considers, for example, the case of explaining the signification of the term 'wall' by pointing to a wall.

neither the student nor teacher is walking. In this case, according to Augustine, the teacher can get up and start walking.⁵⁵

Let us call a sign the signification of which can be explained through the exhibition of the thing which it signifies, a *groundable sign*; and one whose signification has been thus explained in a discourse a *grounded sign*.⁵⁶

Furthermore, let us call a discourse that is composed exclusively of groundable signs, a *completely groundable* discourse, and one that is composed partly of groundable signs, a *partially groundable* discourse. Similarly, let us call a discourse that is composed exclusively of grounded signs, a *completely grounded* discourse, and one that is composed partly of grounded signs, a *partially grounded* discourse.

It should be evident that a philosophical discourse could never be completely grounded, nor even completely groundable for that matter. It is, in fact, difficult to imagine *any* kind of discourse meeting one of these conditions. On the other hand, almost every discourse is partially groundable, and some may even be partially grounded. But in order for a discourse to be partially grounded, the objects of one's discourse must be brought into that discourse *de re*. A partially grounded discourse has some advantages over a discourse that is not partially grounded. In particular, it allows the audience of such a discourse to get its bearings concerning what in the world is being talked about; and whenever this is possible, it is of considerable benefit.

⁵⁵ This example, along with the philosophical problems surrounding it, is raised in the dialogue between Augustine, Wittgenstein and Peirce, in Part I of this chapter.

⁵⁶ Groundable signs, then, will be either signs whose signification can be explained through an act of ostension or those which can be explained without the use of any other signs whatsoever.

So, these considerations are reasons for permitting the exhibitiv use of objects within a discourse on signs: the exhibitiv use of objects within a discourse concerning signs will not only provide the audience with a de re acquaintance of those objects, but will also allow some of the signs in that discourse to be grounded. Both of these things allow the audience of such a discourse to know what is being talked about. These are benefits from the perspective of a discourse that strives toward a precise use of signs.

§6 ON THE METHOD OF INTRODUCING OBJECTS DE RE WITHIN A DISCOURSE CONCERNING THE THEORY OF NOTATION

At present, let us focus on understanding one method by which objects will be used de re in this written discourse. Let me introduce the idea of an *object display line*.⁵⁷ An object display line will be a line in this written discourse on which objects are exhibited de re. Object display lines can be easily distinguished from other lines throughout this text, since they will always be indexed on their left side by an expression that is composed of the fifteenth, the fourth, and the twelfth letters of the Roman alphabet (in that order, starting on the left and going to the right), followed by a left parenthesis, followed by a series of numerals that are unique to that object display line, followed by a right parenthesis. The first numeral refers to the number of the chapter in which the line occurs; the second numeral refers to the number of the part of the chapter; and the last numeral refers to the number of the display line within that part of the

⁵⁷ The idea of an object display line that is presented here is not new. The idea is derived, for the most part, from the idea of a display line found in Quine's *Mathematical Logic* (revised edition and pg. 21) and from Benson Mates' *Elementary Logic* 2nd. ed. Object display lines differ from regular display lines, however, insofar as there are stricter rules for their correct use.

chapter. The first two object display lines in this discourse occur immediately below.

ODL(1.3.1)



ODL(1.3.2)



On object display line (1.3.1), there is a square of black ink. There is also a square of black ink on object display line (1.3.2). These two squares of black ink are, of course, numerically distinct objects, although in many respects they are qualitatively identical. As a general rule, any object that occurs on an object display line is used *de re*, and is to be *viewed as* a mere object. Viewing the objects on these display lines as mere objects is easy enough, since few readers are habituated to view a square of black ink as a sign. But consider, for example, the object on the following display line.

ODL(1.3.3)

pillar

As a matter of habit, most readers will be inclined to view this object as a sign. The fact that this object occurs on an object display line, however, indicates that such an inclination should be resisted. And surely it is possible to resist that inclination, for if one will allow that a mere object can be assigned a signification by stipulation, then one should allow that a sign can be stripped of its signification by stipulation.

Although we stipulate that objects occurring on an object display line are to be viewed as a mere objects, there is still room for viewing such objects in different ways. For example, there are seven distinct mounds of ink on object display line (1.3.3). One may view these seven mounds of ink in many ways: i) as a single discontinuous object composed of seven continuous parts; ii) as a

single discontinuous object composed of five continuous parts and one discontinuous part; iii) as seven individual objects; iv) as six individual objects; etcetera. Let us stipulate, however, that there is a single object on each display line. We may view this single object as composed of various parts, but those parts can and should always be viewed as a whole.

There are some additional rules governing the use of object display lines. The first important rule applies to the scope of an object display line. All object display lines in this discourse are approximately four and one half inches long, beginning two and a half inches from the left edge of the page and ending one and a half inches from the right edge of the page. All and only those things (mounds of ink) falling within that area are part of the object displayed. So, the index for each line is not on the line, and therefore is not part of the displayed object. In addition, the object on an object display line will never function as a constituent of any sentence in this discourse; nor will any punctuation that functions as a constitutive part of this discourse occur on an object display line. Finally, it may happen that the object that we wish to display will not fit on an object display line (like an object that is too big for the Laputian's sack). For example, suppose we have an object that is more than four and a half inches long. In that case, we will proceed as follows: we place part of the object on one display line, and part on another. We then must stipulate how these two objects are to be conjoined in order to get the object that we want. For example consider the two objects on the following two display lines.

ODL(1.3.5) $\sim((p \supset (q \supset p)) \supset (((p \supset (q \supset r)) \supset ((p \supset q) \supset (p \supset r)))$

ODL(1.3.6) $\vdash \sim(((p \supset q) \supset q) \supset p))$

If you take a pair of scissors and cut out the object on object display line (1.3.6) (keeping its orientation in space), and place the left edge of that object adjacent to the right end of the object on object display line (1.3.5), you get a new object.⁵⁸

PART IV DISCOURSE AND SIGNS OF SIGNS

§1 OVERVIEW

It was shown in the previous part of this chapter that the use of signs in a discourse is more than a matter of practical necessity. A discourse composed exclusively of mere objects is nothing; the very idea of such a discourse is incoherent. Nevertheless, it was also shown that mere objects can, on some occasions, be brought into a discourse. As a result, it is possible for discourse to be composed of both signs and mere objects. Turning attention away from the compositional aspects of a discourse, and focusing instead on its subject matter, the distinction between signs and mere objects comes into play once again. We find that a discourse can be *about* mere objects or *about* signs.⁵⁹

Any discourse about mere objects will necessarily involve sentences about mere objects. And sentences about mere objects will necessarily involve signs which stand for those mere objects. Therefore, any discourse about mere objects will necessarily involve signs which stand for mere objects. If we consider the

⁵⁸ This object, if placed in the appropriate context, could function as an axiom schema from which all the truths of propositional logic can be derived.

⁵⁹ This, of course, is an inclusive 'or'. Whether it is an exhaustive one, depends upon how widely one is willing to apply the term 'mere object'. Are there things which are neither mere objects nor signs?

case where a discourse is *about* signs, we can reason in a similar way to reach the conclusion that a discourse *about* signs will necessarily involve signs which stand for signs.

A sign which stands for a mere object (and only a mere object), will be called a *mere-object-sign*, or a *1-sign* for short. A sign which stands for a 1-sign, on the other hand, might naturally be called a *sign-sign*. I prefer to call it generally a *meta-sign*, or more specifically, in this case, a *2-sign*. Although important refinements to this idea will be made below, we may call a sign that stands for a 2 sign a *3-sign*, and a sign that stands for a 3-sign a *4-sign*, ...etc. Generally speaking, then, any sign that stands for an *n*-sign, is an *n+1*-sign. All *n*-signs where $n \geq 2$ are meta-signs. But here we are painting in broad strokes, and there are many potential problems with this scheme that can only be avoided through further refinements and distinctions. We turn, now, to a more careful consideration of these meta-signs, and subsequently to types of discourses that contain them.

§2 META-SIGNS

One of the earliest philosophical discussions of meta-signs occurs in Augustine's dialogue *De Magistro* (389 AD). In this dialogue, Augustine and Adeodatus consider not only signs that signify other signs, but also special cases like signs that signify themselves and signs that mutually signify each other.⁶⁰

These different kinds of meta-signs are carefully distinguished from mere-object-

⁶⁰ Adeodatus was Augustine's son. According to Augustine, something like this dialogue actually took place when Adeodatus was sixteen years old (cf. Augustine, *Confessions* Book Nine, Chapter 6). Adeodatus died at age seventeen.

signs. For example, in the following passage, Augustine points out that the spoken words 'gesture' and 'letter' differ from the spoken word 'stone' in that the things signified by the former words are themselves signs.

Augustine: it seems to me, therefore, that we, by means of words in speaking, either signify words or other signs, as when we express the word *gesture* or *letter* (for objects signified by these two words are themselves also signs) ; or again we signify something else that is not a sign, as when we say *stone* – this word is indeed a sign, for it signifies something, but what is signified is not therefore a sign. This class, however, that is the class where those realities which are not signs are signified by words, does not belong to this division which we have taken up for study here. For we are engaged now in studying that class (of words) in which signs are signified by means of (other) signs ... ⁶¹

Augustine and Adeodatus then consider written language, as distinct from spoken language, and conclude that "things which are written are signs of words uttered by the voice—signs of signs."⁶² In other words, the written word signifies the spoken word, and thus all written words are really meta-signs.⁶³

Beyond written words, Augustine and Adeodatus find many other examples of meta-signs. Consider the following passage.

Augustine: This also I would have you answer—Since a word is the sign of a noun, and noun is the sign of river, and river is the sign of a reality which can be seen; just as between this reality and river, that is, the sign of it, and again between this sign and noun, which you said is the sign of this sign, there is some difference; so what think you is the difference

⁶¹ Augustine, *De Magistro*, pp. 22-23. (Tourscher Translation)

⁶² Augustine, *De Magistro*, p. 25 (Touscher Translation)

⁶³ It is important to realize that the dialogue is intended as a spoken discourse; and most of the examples considered by Augustine are spoken words, not written ones. Since Augustine maintains that written words are signs of spoken words, the written word 'stone' would be a meta-sign, but the spoken word 'stone' would be a mere-object-sign. This position which views writing as a mere notation for speech, and denies the written expression the status of word-hood, is likely to strike the contemporary reader as odd, if not patently false. For the contemporary literate person, there is no difference in semantic status between the written and spoken word 'stone'. But in antiquity, the written expression had a different semantic status than the spoken word (See Aristotle *De Interpretation*), and an investigation into the history of western writing systems reveals that indeed, writing developed as a notation for speech, and not as an equal substitute (See Coulmas *Writing Systems of the World*).

between the sign of a noun, which we found to be a word, and noun itself, of which the word is a sign?

Adeodatus: I understand this to be a difference, that those things which are signified by a noun (or a name) are signified therefore by means of a word : For as *noun* is a word, so also is *river* a word. But everything that is signified by means of a word is not signified therefore as a noun. For that *si* which is at the head of the line proposed by you, and this *ex*, on which, talking now for a long time, we have come thus far by way of reason, are words, and yet they are not nouns; and many such are found. Wherefore, since all nouns are words, it is evident, I think, what difference there is between a word and a noun, that is, between the sign of that sign which signifies no other signs, and the sign of that sign which in turn signifies other signs.⁶⁴

This passage provides us with a beautiful example of both the richness and the difficulties to be encountered in an investigation of meta-signs. The first thing that one cannot help but notice about this passage is that it suffers to some degree from the absence of any convention for marking the use-mention distinction; and without such a convention the passage is very difficult to read.⁶⁵ Consider the same passage provided by Peter King, who retroactively employs Frege's convention in his translation (none of the inserted material is my own) :

Augustine: I would like your answer on this point as well. 'Word' is a sign of 'name,' and 'name' is a sign of 'river,' and 'river' is a sign of a thing that can be seen. You have already said what the difference is between this thing ([the river]) and 'river' (the sign of [the river]). [You have also said what the difference is] between the sign ['river'] and 'name,' which is the sign of the sign ['river']. Now what do you suppose is the difference between the sign of a name – which we found to be 'word' – and 'name' itself, of which ['word'] is the sign?

Adeodatus: I understand this to be the difference [between words and names]. On the one hand, things signified by 'name' are also signified by 'word.' A name is a word, and thus [the name] 'river' is a word. On the other hand, not all the things signified by 'word' are also signified by 'name.' The 'if' at the very beginning of the line of verse you mentioned, and the 'from' – we've come upon these matters after our lengthy

⁶⁴ Ibid., p. 27.

⁶⁵ It is worth noting that this passage is not only about signs of signs, but it necessarily must use signs of signs to talk about signs. Such is the labyrinth one enters when one chooses to discourse on signs.

discussion of the ['from'] guided by the argument – [the 'if' and 'from'] are both words, but they aren't names. Many such cases are found. Consequently, since all names are words, but not all words are names, I think it is obvious what the difference between 'word' and 'name' is – namely, [the difference] between the sign of a sign that signifies no other signs, and the sign of a sign that in turn signifies other signs.⁶⁶

With Frege's help, this passage is quite a bit easier to read. And it is worth noting that Frege's convention is nothing other than a systematic method of producing meta-signs.⁶⁷ As Frege explains:

If words are used in the ordinary way, what one intends to speak of is what they mean. It can also happen, however, that one wishes to speak of the words themselves or their sense. This happens, for instance, when the words of another are quoted. One's own words then first designate words of the other speaker, and only the latter have their usual meaning. We then have signs of signs.⁶⁸

Jumping back to Augustine, if we look more carefully at the content of the passage taken from his dialogue, we find not only what appears to be an example of a 2-sign (the word 'noun' signifies the word 'river' which signifies a mere object), but also an example of 3-sign (the word 'word' signifies the word 'noun' which signifies the word 'river' which signifies a mere object). This passage naturally leads one to wonder whether there are any examples of 4-signs. But before one begins to undertake further investigation into meta-signs there are several things that need careful consideration. The first problem concerns the fact that the word 'word' not only signifies 'noun', but also signifies 'river'. Thus, it appears that 'word' is both a 2-sign and a 3-sign, since it signifies both a 1-sign

⁶⁶ Augustine, *De Magistro*, pp.106-107. (King Translation)

⁶⁷ As mentioned in an earlier footnote, although Augustine had no convention for marking the use-mention distinction, it is clear that he was aware of something like the use-mention distinction. In response to Adeodatus' rule which states that we should always take a word as used—not mentioned, Augustine formulates *The Law of Reason*, which states that we should always use our reason and interpret whether a term is used or mentioned by considering the context in which it falls. (Augustine [2] p. 125-126)

⁶⁸ Frege, "Ueber On Sinn und Bedeutung," p. 58.

and a 2-sign. This result is perhaps tolerable, and merely requires that one guard against thinking that the properties of being a 2-sign and being a 3-sign are mutually exclusive.

Additional problems, however, are raised by two further examples discovered by Augustine and Adeodatus. The first example concerns signs that signify themselves. The dialogue runs:

Augustine: Does it appear to you that all signs signify something other than they are, as this word of three syllables when we say *animal* does not signify what itself is?

Adeodatus: Not at all: for when we say *sign*, that word signifies not only all other signs whatsoever, but it signifies itself also; for itself is a word, and all words are signs.⁶⁹

The second example concerns signs that mutually signify each other:

Adeodatus: ...I am eager to know what are the signs which signify each other mutually.

Augustine: You do not know, then, that when we say *noun* and *word* we are expressing two words?

Adeodatus: I do know.

Augustine: How this, then, do you not know that when we say *noun* and *word* we are expressing two nouns?

Adeodatus: That also I know.

Augustine: You know, therefore, that *noun* is signified by means of a word, and *word* by means of a noun.

Adeodatus: I am agreed.⁷⁰

The problem that both of these examples raise for the person seeking a 4-sign should be obvious. For if 'word' is a 3-sign, and 'noun' mutually signifies 'word', that makes 'noun' a sign of a 3-sign, i.e. a 4-sign, which in turn makes 'word' a 5-sign, which in turn makes 'noun' a 6-sign ... and the reasoning goes on ad infinitum. So, once we have either signs that signify themselves, or two signs that mutually signify each other, it appears that we automatically have signs of signs

⁶⁹ Augustine, *De Magistro*, p. 29 (Touscher Translation)

⁷⁰ Augustine, *De Magistro*, p. 31. (Touscher translation)

of signs of signs ... ad infinitum. Let us call signs that signify in this peculiar way ∞ -signs.

The other thing that a contemporary reader of these passages is likely to find unsettling is that, unlike Frege, Augustine makes no distinction between the intension and extension of a sign. Augustine considers only signification, a semantic relation that is quite general and is sometimes equated with the semantic relation of connotation (Frege's *Sinn*), while other times with the semantic relation of denotation (Frege's *Bedeutung*).⁷¹ Thus, although the word 'noun' denotes the word 'word', and vice versa, they surely do not connote each other (at best, 'noun' partially connotes what is connoted by 'word'). Moreover, there are many signs which do not denote any thing at all, like Augustine's example of the word 'if'.⁷² Now, we have already seen that some signs are *both* n-signs and n+1-signs. Are we also forced to acknowledge that some signs are not n-signs for any number n? If having a denotatum is a necessary condition for being an n-sign, then it would appear that we must come to that conclusion. Perhaps, however, signs that do not denote can be called *0-signs*.

One final problem with the concept of an n-sign concerns the fact that an object, when viewed by one person from one perspective, may appear to be a mere object, yet when viewed by a different person from a difference perspective,

⁷¹ Frege is often credited with emphasizing the distinction between sense and reference, but it is clear that the basic idea of the distinction is much older than Frege. Indeed, the puzzle about the signification of the word 'nothing' as it occurs in Augustine's *De Magistro* (which, incidentally, is left unresolved), clearly points to a need for a distinction of this sort, even if such a distinction is never explicitly formulated.

⁷² Incidentally, this passage from *De Magistro* also reveals that Augustine was not so naïve as to think that all words are nouns, despite Wittgenstein's suggestion to this effect in the opening section of his *Philosophical Investigations*.

may be appear to be a sign. And this fact seems to make the notion of an n-sign so relative that its usefulness becomes highly questionable. There is no simple remedy to this problem. Any solution is going to require a serious reformulation of the concept of an n-sign. The following suggestion, although it does not completely solve the problem, will nevertheless make it less prevalent.

The first move toward remedying the problem is to explain n-signs in terms of the relation of *standing for* as opposed to *denoting*. And indeed, when n-signs were first formulated in the preceding section, that is the relationship that was employed. Some philosophers of language might seem puzzled by this suggestion, for some may not distinguish the relationships of *standing for* and *denoting*. 'Stands for', 'denotes' and 'refers to', they might argue, are merely different terms which pick out the same semantic relationship. But there are reasons to think that this is not so. Standing for, which is very much like the medieval relationship of supposition, is a property that a sign has only in the context of semiotic stage. In order for A to stand for B, there must be a concrete scenario in which A stands. In other words, one thing does not *stand for* another in an abstract vacuum.⁷³

In order to get clear about this, consider the words 'noun' and 'word' once again. Does the word 'noun' denote the word 'word'? If denotation were a relationship applying only to specific tokens of each word in particular sentences, then the question wouldn't make any sense. And the fact that most philosophers would reply affirmatively to this question shows that they do not see denotation as

⁷³ The difference between *standing for* and denotation is further discussed in Chapter III, Part IV of this work.

a property that a sign has only in the context of a concrete scenario. But consider the question: Does the word 'noun' stand for the word 'word'? If the question makes sense at all (and I do not think that it does) the answer seems to be 'No.'

Beyond characterizing n-signs with the semantic relationship of standing for, further remedy to the problem of relativity is afforded by restricting n-signs to singular terms, or signs which stand for individuals. Thus, on this suggestion, common nouns like 'word' would no longer be candidates as n-signs. In the end, we may formulate the concept of n-signs as follows:

x is a 0-sign \equiv x is a sign, but x does not stand for anything.
 x is a 1-sign \equiv x is a singular term that stands for a mere object
 x is a 2-sign \equiv x is a singular term that stands for a 1-sign
 x is a 3-sign \equiv x is a singular term that stands for a 2-sign
 etcetera.

§3 ON THE NEED TO INTRODUCE META-SIGNS INTO A DISCOURSE

Although it is perhaps possible to create a discourse devoid of any meta-signs, the need to introduce meta-signs into a discourse is felt in varying degrees by researchers in almost every discipline. And the degree to which a researcher experiences such a need is a product of several factors. The first is whether the deviant or novel use of signs is common in the discipline; the second is whether the discipline seeks truth; and the third is whether the discipline studies signs themselves.

The de signo use of sign within a discourse may be either *typical*, *deviant*, or *novel*. The typical use of a sign always involves the use of a *familiar sign* (a sign with which the author assumes the audience is familiar) according to its

ordinary signification. The deviant use of a sign, however, involves the use of a familiar sign with an intended signification that at once differs from what is ordinary, while at the same time maintaining certain aspects of its ordinary signification. Thus a deviant use occurs when the signification of a familiar sign is narrowed or made more specific, as well as when its signification is widened or made more general. Unlike a typical or deviant use, the novel use of a sign is not restricted to familiar signs. The novel use of a sign may involve either the use of an unfamiliar sign (in which case there is no ordinary signification), or the use of a familiar sign, but with an intended signification that is wholly unrelated to its ordinary signification. The following chart summarizes the de signo use of signs.

	Familiar Sign	Unfamiliar Sign
Typical use	possible	not possible
Deviant use	possible	not possible
Novel use	possible	possible

The deviant and novel use of signs is a natural, and often a healthy, consequence (and perhaps even a source) of progress in a discipline. But wherever one encounters a deviant or novel employment of signs, there one can expect (or at least hope) to find an explanation concerning the intended new or modified signification of those signs.⁷⁴ Such an explanation, however, if it is to accord with the sentential homogeneity thesis, necessarily requires the use of

⁷⁴ As a matter of logical tidiness, the following two conditions concerning the novel and the deviant uses of signs should always be fulfilled:

(i) a deviant or novel employment of a sign should always be preceded by an explanation that explains to the audience its signification and how that sign will be used;

and

(ii) the use of each deviant or novel sign should always be in accordance with the limits set out in its explanation.

On account of pragmatic considerations, these conditions are not always fulfilled, even in logical writings. Nevertheless, they provide standards to which those who admire logical tidiness can aspire.

meta-signs, because any statement which explains the signification of a sign must employ signs to mention that sign, i.e., must use a meta-sign.⁷⁵

As noted in Part II, §2 of this chapter, every discipline uses signs in one form or another; but the truth-seeking disciplines are disposed to frame their problems and express the results of their research in the form of a written or spoken discourse.⁷⁶ And the language in which that discourse is conducted is bound to have specialized terminology specifically suited to the discipline in question. Furthermore, one aspect of truth-seeking disciplines—even those that are highly empirical—involves the refinement of this specialized terminology, as new things are discovered, or as finer distinctions amongst old things are drawn. Terminology, then, must keep pace with the conceptual advances. In his work, *A System of Logic*, John Stuart Mill identifies two requisites of any language suited to the discovery of truth,⁷⁷ and both of these requisites are threatened by advances in the sciences. Mill writes:

In order that we may possess a language perfectly suitable for the investigation and expression of general truths, there are two principal, and several minor requisites. The first is, that every general name should have a meaning, steadily fixed, and precisely determined. When, by the fulfillment of this condition, such names as we possess are fitted for the

⁷⁵ Even an ostending finger, when it is pointed at a sign, must be considered a meta-sign; for as Augustine noted, a pointing finger is a gesture, and gestures are signs.

⁷⁶ Disciplines which focus primarily on the production of aesthetic signs are not classified under truth-seeking disciplines. Music and the visual arts are some examples of such disciplines. One may object to this statement by claiming that "Beauty is truth, truth beauty." This, however, is not what is meant by 'truth'. One may also object to this statement on the grounds that within a discipline like music there are also theoretical and historical investigations that *are* truth-seeking. This must be granted. But those who study music theory or music history do not present their results in aesthetic signs.

⁷⁷ Following in the tradition of John Locke, Mill calls such a language a *Philosophical Language*. But clearly this is because he did not draw a sharp distinction (perhaps wisely) between philosophy and science. At any rate, so long as one realizes that a philosophical language is any language specially designed for the pursuit of truth, there can be no question that Mill's requisites for a philosophical language apply to both the languages of the sciences and the languages of the arts, so long as these disciplines are seeking truth.

due performance of their functions, the next requisite, and the second in order of importance, is that we should possess a name wherever one is needed; wherever there is any thing to be designated by it, which is of importance to express.⁷⁸

Mill's first requisite (*the precision requirement*) is often threatened when finer conceptual distinctions are made, because such distinctions tend to make signs which previously seemed precise seem less so. His second requisite (*the effability requirement*) is threatened by the discovery of new things, since if they are newly discovered, it is likely that there will not yet be signs that signify them. Thus, the search for truth leads to discovery and the drawing of finer distinctions, which in turn lead to violations of Mill's requisites, which in turn lead to a readjustment in terminology, which in turn leads to novel and deviant uses of signs, which in turn leads to the need to explain the signification of those signs, which in turn leads to the need to employ meta-signs within the scientific discourse.

Although the need for introducing meta-signs into a discourse is to some degree felt by researchers in every discipline, it is acutely felt by researchers in the fields of semiotic, linguistics, the philosophy of language and logic. For in these areas of inquiry, talking and writing about signs goes beyond simply explaining the use of novel or deviant signs. These disciplines take signs as their general subject matter; and thus, even if the terminology in these fields were to satisfy Mill's two requisites (which is far from the actual state of things), they would still need to use meta-signs. After all, meta-signs are to the discourse of one who studies signs what mere-object-signs are to the discourse of one who studies mere things.

⁷⁸ Mill, *A System of Logic*, p. 476.

As a sub-branch of semiotic, the theory of notation is a field of inquiry that takes signs and sign systems as its general subject matter. Therefore, discourse on the theory of notation will require the use of meta-signs. The casual use of meta-signs, however, must be contrasted with their systematic use; and fields of inquiry which take signs as their subject matter really require a set of conventions for *systematically* creating meta-signs. Taken to an extreme, a set of systematic conventions would become a notation for discoursing on signs. And indeed, one of the goals of the theory of notation is to create a notation for the theory of notation. The very reflexivity involved in this idea, however, suggests that the development of such a notation is no simple task, and that the theory and its notation must gradually evolve through a process of reflective equilibrium. The next chapter considers a preliminary attempt at formulating such a notation, in addition to looking at other better known conventions for discoursing on signs.

CHAPTER II
CONVENTIONS FOR DISCOURSING ON SIGNS

PART I
WHO'S ON STEROIDS?
(A DIALOGUE TO BE READ SILENTLY)

The scene: [Abbott and Costello enter an online chat room]

Abbott: Hey Costello, are you there?

Costello: hi

Abbott: This chat thing is really cool, huh?

Costello: neat :-)

Abbott: These new emoticons are really something too.

Costello: u bet |:-)

Costello: what r u doing out there in CA

Abbott: I've been studying philosophy.

Costello: philosophy! what can u do w/ that (lol)

Abbott: Some folks say that studying philosophy helps you keep score in a language game.

Costello: a language game % -)

Abbott: Yeah. Some say it's like a baseball game. At least that's what I'm learning in philosophy class.

Costello: :-S

Abbott: By the way, are you still following baseball?

Costello: too busy

Abbott: Well even if you no longer follow baseball, you must have heard about the ball players who were recently accused of taking steroids. It was big news.

Costello: oh yeah i think i did hear somethin bout that

Abbott: There were congressional hearings and all.

Costello: who was accused

Abbott: That's right.

Costello: what

Abbott: Him too.

Costello: who too

Abbott: I already told you who was accused.

Costello: who?

Abbott: That's right.

Costello: what's right?

Abbott: What's right too.

Costello: wait a minute!!!!

Abbott: Well, you know Costello, people tend to be pretty sloppy writers when emailing and chatting on-line. Why don't we try writing in complete sentences and using proper punctuation? Maybe that will help clear things up.

[Pause]

Costello: It's gonna take me longer to reply, but ok. You said some players were accused of taking steroids. Tell me the names of some of the players who were accused.

Abbott: The name of one of the guys is 'Who'.

Costello: Huh?

Abbott: The name of one of the ball players taking steroids is 'Who'.

Costello: 'Who'? That's a strange name. I've never seen a name that begins and ends with single quotation marks. How do you pronounce it?

Abbott: 'Who' doesn't have any quotation marks in its spelling. You're confusing 'Who' with 'Who'!. Who's name isn't 'Who' but 'Who'. But if you're curious

about how to pronounce 'Who', the answer is that it is pronounced the same as 'Who'.

Costello: A lot of good that does me. I ask you how to pronounce 'Who' and you tell me that 'Who' is pronounced the same as 'Who'. What I want to know is: How do you pronounce 'Who' with single quotation marks? Do you pronounce the quotation marks?

Abbott: I just told you that there are no quotation marks in 'Who'. You are confusing 'Who' with 'Who'. Who's name isn't 'Who', but 'Who.'

Costello: That strikes me as complete nonsense. It's not even grammatical! Besides, we were talking about 'Who' not 'Who.' (with a period).

Abbott: : Sorry about that. I lapsed back into the illogical American usage of punctuation in that last statement. Let's try starting from scratch.

Costello: Okay. What is the name of the guy who is accused of taking steroids?

Abbott: His name is 'Who'.

Costello: Are you are saying that his name is 'Who'?

Abbott: Exactly. Moreover, not only is Who named 'Who', but 'Who' is named 'Who' and 'Who' is named ''Who''.

Costello: I notice a pattern developing. I suppose the next thing that you're gonna tell me is that ''Who'' is named ''Who''.

Abbott: That's right.

Costello: And ''''Who'''' is named ''''Who''''?

Abbott: You're catching on.

Costello: But how do you pronounce 'Who'?

Abbott: Well, if you do not know how to pronounce 'Who', there is not much I can write to help you out, unless you understand phonetic notation. In that case you pronounce it \hü\ .

Costello: So what you are basically telling me is that you do not pronounce the quotation marks. 'Who' is pronounced the same way as Who.

Abbott: Not exactly. Who is not pronounced at all. Who is a baseball player who is accused of taking steroids, not a name.

Costello: It seems that the philosophy that you've been studying has messed with your mind, Abbott. Either that, or you're just playing one of those language games you were telling me about at the beginning of this chat.

Abbott: I am not playing games, Costello. I am just trying to answer your questions. But looking back at the previous lines of our discourse, I am beginning to think that this stuff about quotation that I learned in philosophy class has a few problems that need to be worked out. It seemed pretty straightforward when I first learned about it, but now I see there are some real problems here.

Costello: Well Abbott, I still don't know what you are talking about. Good luck with that philosophy stuff. I'm signing off.

Abbott: Okay Costello. Maybe next time we chat I'll have figured all this stuff about quotation marks out. In that case, we'll be better able to sort out who's who.

Costello: Bye!

Abbott: Bye.

PART II

QUOTATION: PROGRAMS AND PROBLEMS

§1 OVERVIEW

As explained earlier,⁷⁹ when Frege wanted to say something about a written sign, he placed the written sign in single quotation marks. He adhered to this procedure in his later works to avoid ambiguity and the potential errors in thought that arise from ambiguity. Since Frege's time, this use of quotation marks has become a standard practice in philosophical discourse—especially in texts dealing with formal logic or the philosophy of language. But Frege, of course, did not invent the quotation mark, nor, of course, were quotation marks originally invented for the sole purpose of eliminating ambiguity from philosophical discourse. Quotation marks had uses in ordinary written discourse long before

⁷⁹ §4 of Part III of Chapter One.

Frege ever dipped his philosophical pen; and this is an important fact to keep in mind while considering the problems surrounding the "correct" use of quotation marks within a written discourse.⁸⁰

There are several problems and controversies about the use of quotation marks in written discourse; some of them have a philosophical dimension, while others do not. One example of a non-philosophical controversy concerns the British use of quotation marks as contrasted with the American. The British usage prescribes the use of single quotation marks in places where Americans prescribe the use of double quotation marks. There is nothing essentially philosophical about this controversy; it is on par with the divergences between British and American English in the spelling of certain words.

On the other hand, British and American usages also diverge on the placement of punctuation like periods and commas in the context of quotation marks. American usage prescribes that such punctuation goes within the quotation marks, whereas British usage prescribes that such punctuation goes on the outside. Unlike the disagreement over single and double quotations marks, the divergence over the placement of other forms of punctuation in relation to quotation marks is not wholly trivial from a philosophical perspective. On the contrary, the divergence raises serious questions about the function that quotation marks serve in ordinary discourse.⁸¹

⁸⁰ My use of quotation marks in this sentence is a perfect example of a kind of use that commonly occurs, but is often considered to be incorrect. Whether or not this kind of use is legitimate, it clearly does not accord with Frege's convention.

⁸¹ It is relevant to note that the American prescription of the placing punctuation inside of the quotation marks violates Frege's prescription for the use of quotation marks.

In an attempt to determine how quotation marks function in ordinary discourse, one can consult a dictionary or a manual of style; but if he does, he will soon find that there are several legitimate functions for quotation marks in ordinary discourse, and these several functions fall under no single general rule.

For example, quotation marks are often used to:

- enclose direct quotations,
- enclose words or phrases borrowed from others,
- enclose words or phrases used in a special way,
- enclose titles of poems, short stories, articles etc.

What this means, however, is that the use of quotation marks in ordinary discourse violates the very principle that motivated Frege to introduce quotation marks into his philosophical work in the first place. After all, single quotation marks were introduced by Frege to eliminate the ambiguity that arises from using the same type of sign in different ways (*de re* and *de signo*);⁸² but quotation marks, as they occur in ordinary discourse, are themselves signs that have different uses. So as they occur in ordinary discourse quotation marks are ambiguous signs.⁸³ Moreover, since the use of quotation marks that Frege prescribes differs from any of the ordinary uses listed above, adding Frege's use to the list increases the ambiguity.

When all is said and done, we find that Frege selected an ambiguous mode of expression in order to eliminate an ambiguous mode of expression. This is not to say that Frege's own use of quotation marks involves ambiguity; as he describes it, his own use appears to be quite singular and specific. The problem

⁸² These terms are explained in Chapter I, Part III, §2.

⁸³ We often appeal to contextual clues to determine how quotation marks are functioning.

of ambiguity arises only if one uses quotation marks *both* in the way that Frege prescribed *and* in the ways prescribed by ordinary usage.

If Frege could have foreseen the philosophical controversies that would eventually arise concerning the use of quotation marks in written discourse, perhaps he would have chosen some alternative convention for mentioning written signs. For example, perhaps he would have adopted the convention of flanking a written word with asterisks (or some other kind of mark) as opposed to quotation marks. Had he done so, it is reasonable to conjecture that much of the current philosophical controversy surrounding the use of quotation marks in written discourse would have been avoided, and replaced by a much more focused concern over the use of asterisks instead.⁸⁴ But Frege did not foresee the problems that lay ahead. The result has been a philosophical debate about quotation that has lasted for more than a century. Unfortunately, however, this debate, like many philosophical debates, has been founded on a number of confusions. So we need to look more closely at the problems about quotation marks, to draw some distinctions that will enable us to avoid further confusions.

§2 QUOTING, USING INVERTED COMMAS, AND MENTIONING SIGNS

In the previous section, it was pointed out that there are several uses for quotation marks in ordinary written discourse, and that the multiplicity of uses gives rise to a form of ambiguity. Beyond this ambiguity, the philosophical

⁸⁴ I am trying to say that if Frege had used asterisks instead of single quotation marks, the philosophical debate would have a different scope than it presently has. Although some of the problems in the debate would be the same, others would be considered much less relevant, e.g., the problems concerning the use of quotation marks in ordinary discourse. (see sections 6 & 7 below)

problems surrounding quotation are further compounded by the fact that the term 'quotation mark' is itself ambiguous.

On one hand, the term 'quotation mark' may be taken as a general term that applies to any set of marks which are employed to indicate that an act of quoting is taking place. In this sense, the left and right guillemets (marks similar to those which appear on the object display lines (2.2.1) and (2.2.2) below) would count as quotation marks, since they are commonly used by French writers to indicate that a passage is a direct quotation.

ODL (2.2.1) «

ODL (2.2.2) »

Moreover, if the term 'quotation mark' is taken this sense, the dipole (an expression similar to the one appearing on the object display line below) would also count as a quotation mark, since it is the forerunner of the guillemet, and was often used in the 16th century to indicate the presence of a quotation.⁸⁵

ODL (2.2.3) >

Finally, italicization would also count (in a strange way) as a mark of quotation, since it also is often used to indicate that quoting is occurring.⁸⁶

⁸⁵ In his book *Pause and Effect: An Introduction to the History of Punctuation in the West* (pp. 57-60), M. B. Parkes describes the history of the dipole, and how it evolved into guillemets and quotation marks. During the 16th century, this convention was employed by printers in several countries, including England, France, and Germany. Further discussion of the dipole occurs below in Chapter II, Part III §3.

⁸⁶ Strictly speaking, it seems strange to call italicization a quotation mark, since the indicating feature is not a distinct mark, but a modification of the properties of the printed expression itself.

On the other hand, the term 'quotation mark' can be taken as equivalent to the term 'inverted comma'. When taken in this way, the term designates specific graphic characters resembling those on the following four display lines.

ODL (2.2.4) “

ODL (2.2.5) ”

ODL (2.2.6) ‘

ODL (2.2.7) ’

In this sense, neither guillemets, diples, nor italicization count as quotation marks.

Once the ambiguity of the term 'quotation mark' is acknowledged, it is obvious that the phrase 'using quotation marks' does not apply to a class of activities characterized by a single form, but instead to a diverse aggregate of activities which are united by series of family resemblances. The following list identifies three distinct kinds of activities that are often, but not always, involved in an act of using quotation marks:

- quoting,
- using inverted commas,
- mentioning an expression.

There are cases of using quotation marks that involve all three, but there are also cases in which one or more of these is *not* involved. More specifically, for each of the activities on the list, one can find an act of using quotation marks that does not involve that activity. This shows that none of these activities can be considered as essential to using quotation marks.

In order to demonstrate the distinctness of the three activities listed above, we need to provide evidence for the following six claims.

01. There are acts of quoting that are not acts of using inverted commas.
02. There are acts of using inverted commas that are not acts of quoting.
03. There are acts of mentioning expressions that are not acts of quoting.
04. There are acts of quoting that are not acts of mentioning expressions.
05. There are acts of using inverted commas that are not acts of mentioning expressions.
06. There are acts of mentioning expressions that are not acts of using inverted commas.

Evidence for Claim 01

01. There are acts of quoting that are not acts of using inverted commas.

The fact that some acts of quoting are achieved through the use of guillemets, diphles and italicization provides sufficient evidence to establish claim 01.⁸⁷

Evidence for Claims 02 and 03

02. There are acts of using inverted commas that are not acts of quoting.
03. There are acts of mentioning expressions that are not acts of quoting.

Evidence for claim 02 comes in two different forms. On the one hand, there is the use of inverted commas for "emphasis."⁸⁸ Clearly in this kind of case, no act of quoting occurs. On the other hand, if one doesn't acknowledge the previous kind of case as legitimate, there are other cases in which inverted commas are used but no act of quoting occurs. For example, the first employment of inverted commas in Frege's essay "Ueber Sinn und Bedeutung," is a case in which no act of quoting occurs.

⁸⁷ There are, of course, other methods of quoting material that do not involve any of the devices mentioned here. The use of different fonts, extended spacing between characters, and block quoting are other devices.

⁸⁸ The use of double inverted commas in this case exemplifies a type of use that does not involve quoting. It is often said, however, that this use is improper and should be avoided in ordinary discourse.

If we were to regard equality as a relation between that which the names 'a' and 'b' designate, it would seem that $a=b$ could not differ from $a=a$ (i.e. provided $a=b$ is true).⁸⁹

Quoting is an activity which has an essentially historical dimension. You cannot quote something unless it has been previously written or spoken. To quote one writer on this point, "Quoting is an action performed by a speaker (or utterance or sentence) only by repeating verbal content of a prior utterance."⁹⁰ In the passage from "Ueber Sinn und Bedeutung" that we are considering, Frege is not repeating the verbal content of a prior utterance, but instead mentioning an expression. As a result, this passage in Frege also supplies sufficient evidence for Claim 03, since Frege is mentioning an expression in this passage but not quoting anything.

Evidence for Claim 04

04. There are acts of quoting that are not acts of mentioning expressions.

Claim 04 is a slightly more controversial claim than the previous three claims; and one might be inclined at first glance to reject it, i.e. to suppose that all acts of quoting essentially involve acts of mentioning. There are, however, many examples of *indirect* quotation in which there is no explicit mention of any of the expressions originally used by the author or speaker. For example, Frege said in "Ueber Sinn und Bedeutung" that in cases of indirect quotation we speak of the sense of what another person expressed, and do not refer to the exact words that

⁸⁹ Frege, *On Sense and Meaning*, p. 56. In this passage Frege mentions the first letter of the Roman alphabet. Another case in which inverted commas are used but no act of quoting occurs is provided by the sentence preceding the quotation. The name of Frege's essay is placed in quotation marks, but the name is neither quoted nor mentioned.

⁹⁰ This quotation is from page one of Wertheimer (2005 unpublished). For more on this point, see Mitchell (1983) and Saka (1998).

were used.⁹¹ Thus, in these kinds of cases, a form of quoting occurs but no mentioning of expressions occurs.⁹²

Evidence for Claim 05

05. There are acts of using inverted commas that are not acts of mentioning expressions.

To establish claim 05, we can point once again to the use of inverted commas as a device to emphasize an expression or to raise suspicions about the signification/use of a term (“scare quotes”). One could also point to cases in which inverted commas are used to indicate titles of articles, or where they are used in works of fiction to distinguish the dialogue of the characters from the narration.

Evidence for Claim 06

06. There are acts of mentioning expressions that are not acts of using inverted commas.

Finally, claim 06 is established by the fact that some writers, editors, and publishers prefer the convention of using of italicization to mention expressions (as opposed to using inverted commas).

⁹¹ The sentence to which this note is attached is an example of a case of quoting without mentioning. After all, Frege didn't write the article in English, and I am only providing the sense of what Frege said about indirect quotation.

⁹² It is likely that some may question whether acts of indirect quotation ought to be counted among acts of quotation at all. The word 'quote' (like many other words) has suffered a change in reference over time. It is derived from the Latin word 'quot' which means "how many," and to quote a text originally involved providing the number of a chapter or verse of the text being referenced. Thus, in its original sense, quoting did not involve mentioning signs, but referring to them by number. If one maintains that quoting necessarily involves the mentioning of signs, then it is likely that one will maintain that indirect quotation is not truly a form of quotation. For our purposes here, however, there is a reason to count indirect quotation as a form of quotation, viz., it has often been treated as such in the philosophical literature (see Capplen and Lepore 1997 for an example). On the other hand, if some claim that this treatment has been a mistake, I would agree with them. My goal is to show how the current philosophical debate over quotation suffers from confusion, and one form of the confusion results from treating diverse and tenuously connected phenomena as if they were characterized by a single form.

So, quoting, using inverted commas, and mentioning signs are (both in theory and in practice) three distinct activities. Sometimes they all occur in a single case of using quotation marks; sometimes only one or two of them occur. It is desirable, however, to demonstrate not only the distinctness of these activities, but also the arbitrariness of the connection between them. For if the connection between them can be shown to be arbitrary or accidental, then we would have a good reason to maintain that their subsumption under a single category is also accidental (or at best based on a family resemblance). And once this latter point is established, we would have good reason to look suspiciously on any theory which tries to formulate a set of general rules which govern all three activities.

In order to establish that the connection among the three activities is accidental, we need to consider the following three connections:

- The connection between acts of using inverted commas and acts of quoting,
- The connection between acts of using inverted commas and acts of mentioning,
- The connection between acts of quoting and acts of mentioning.

It should be obvious that the first two connections are arbitrary. The use of inverted commas for quoting and mentioning is a mere matter of convention, and conventions are by nature arbitrary. This is further supported by the fact that in many cases a different convention is employed (e.g., the use of guillemets or italicization).

On the other hand, unlike the first two connections, the connection between quoting and mentioning is not *wholly* arbitrary. It is true that one can mention without quoting and quote without mentioning; but the possibility of

quoting without mentioning depends upon counting indirect quotation as a form of quotation. Direct quotation, after all, does essentially involve mentioning signs; and it seems that this influenced Frege's decision to adopt the convention of using inverted commas for mentioning signs. His discussion of direct quotation in "Ueber Sinn und Bedeutung," suggests that he saw his own use of inverted commas as based, to at least some degree, upon the existing conventions of ordinary usage. He writes:

If words are used in the ordinary way, what one intends to speak of is what they mean. It can also happen, however, that one wishes to talk about the words themselves or their sense. This happens, for instance, when the words of another are quoted. One's own words then first designate words of the other speaker, and only the latter have their usual meaning. We then have signs of signs. In writing, the words are in this case enclosed in quotation marks. Accordingly, a word standing between quotation marks must not be taken as having its ordinary meaning.⁹³

However, since not all cases of mentioning signs are cases that involve direct quotation, it can be argued that Frege's use of inverted commas for the purpose of merely mentioning signs is not in accord with the established convention—a point that he himself soon recognized.⁹⁴ If Frege had anticipated the philosophical controversy that would eventually arise concerning the use of quotation marks in written discourse, perhaps he would have adopted a different convention for mentioning signs. But, again, Frege did not foresee the problems that lay ahead.

⁹³ Frege, "Ueber Sinn und Bedeutung," pp. 58-59.

⁹⁴ See the quotation from his *Grundgesetze* below in Part III, §4 of this chapter.

§3 DESCRIPTIVE THEORIES AND PRESCRIPTIVE THEORIES

Theories can be divided into two classes: the descriptive and the prescriptive.⁹⁵ Roughly speaking, descriptive theories make claims about the way things *are*, while prescriptive theories make claims about the way things *ought to be*.

Although the distinction between description and prescription is general and applies to all theories (i.e. not only to theories of special disciplines), it is more emphasized and more carefully observed in some areas of inquiry than others. In moral philosophy, for example, the distinction is applied to egoism, yielding the two wholly distinct theories of ethical egoism and psychological egoism.⁹⁶ Ethical egoism is a prescriptive theory according to which a person *should* always act in his own self interest; psychological egoism is a descriptive theory according to which a person *does* always act in his own self interest. The importance of the distinction as applied to egoism is not to be underestimated, since evidence that will justify or refute the descriptive version is often completely irrelevant to the prescriptive version, and vice versa.⁹⁷ As a result, debates over egoism that do not observe the distinction, but vacillate between the two theories as if they were one, are prone to confusion.

Another area where the careful distinction between description and prescription is emphasized is the study of grammar. Descriptive grammarians (or linguists) investigate how language is *actually* used by a group of people, while

⁹⁵ The question as to whether these two classes are mutually exclusive (or disjoint) will be discussed below.

⁹⁶ Rachels, J., *The Elements of Moral Philosophy*, pp. 62-89.

⁹⁷ For example, any person who fails to act in his own self-interest on some occasion is evidence against psychological egoism, but such a person poses no objection to ethical egoism.

prescriptive grammarians create theories about how language *ought* to be used by a group of people. As in the case of the two forms of egoism, the kind of evidence that supports a descriptive theory of grammar is often irrelevant to a prescriptive theory, and vice versa.

All theories of quotation are theories of grammar.⁹⁸ They can be either descriptive or prescriptive.⁹⁹ Any theory of quotation that attempts to describe how quotation marks are actually used, or how they actually work, is descriptive. Moreover, such a theory can be evaluated as true or false. If a descriptive theory fails to accord with the empirical data concerning the actual use of quotation marks, the theory can be judged to be false (at least to the extent that it disagrees with the data); if it agrees with the data, it can be judged to be true.¹⁰⁰ A prescriptive theory about quotation marks, on the other hand, need not concern itself with how quotation marks are actually used.¹⁰¹ On the contrary, a prescriptive theory attempts to *influence* or *direct* actual use, not *describe* it. And when it comes to the issue of how quotation marks work, a prescriptive theory does not describe, but prescribes (or stipulates) how they work. As a result, the adequacy of a prescriptive theory is not measured in terms of truth, but in terms of

⁹⁸ By this I merely intend that every theory of quotation is a theory about a grammatical phenomenon.

⁹⁹ Observing the distinctions made in the previous section, we can now distinguish six different kinds of theories of quotation: descriptive theories about acts of quoting, prescriptive theories about acts of quoting; descriptive theories about using inverted commas; prescriptive theories about using inverted commas; descriptive theories about devices used to mention signs; and prescriptive theories about devices used to mention signs.

¹⁰⁰ Agreeing with the all the current data, of course, is not a sufficient condition for determining the truth of a theory.

¹⁰¹ Although a prescriptive theory need not concern itself with actual usage, many prescriptive theorists will appeal to a precedent in actual usage to help formulate (or even justify) a prescription. More will be said about this below. The main point, however, is that the quality of a prescriptive theory is not measured *simply* in terms of how well it agrees with actual usage (either past, present or future).

efficacy. A good prescriptive theory is one that is effective in attaining some pre-established goal (e.g., ease of use or consistency in application).

The distinction between descriptive and prescriptive theories is not always carefully observed by those developing a theory of quotation. Some vacillate between describing how quotation marks are actually used and prescribing how they ought to be used. As in the case of egoism, the mixing of description and prescription in this way is problematic and a symptom of confusion.¹⁰²

The most serious problem with this type of mixing concerns evaluation and justification. Prescriptive and descriptive theories of quotation must be evaluated and justified according to different criteria, and what counts as an objection to one kind of theory is often irrelevant to the other. As a result, evaluating or justifying a theory of quotation that vacillates between description and prescription is problematic, since the criteria for evaluation and justification will need to be vacillating as well.

There may be some, however, who are inclined to reject any edict that opposes the mixing of description and prescription, because they believe there is an important connection between the actual use of language and the way it ought to be used. This connection is expressed by what John Locke called *the rule of propriety*, which suggests that the correct use of language is partly determined by precedent usage. More specifically, it states that the *proper* signification of word

¹⁰² The confusion is already embodied in the question: *How do quotation marks work?* This question is ambiguous, and may be taken as equivalent to either: *What is it that quotation marks do when actually used?* or *How should quotation marks be used?* The former asks for a description, the latter a prescription.

is partially determined by the way the word *is* and *has been* commonly used.¹⁰³

Locke writes, in regard to the signification of words:

It is true, *common Use*, that is, the rule of propriety may be supposed here to afford some aid, to settle the signification of language; and it cannot be denied but that in some measure it does. Common use *regulates the meaning of Words* pretty well for common Conversation.¹⁰⁴

Thus, in some sense, the rule of propriety provides a bridge across the is-ought gap in grammar—the way a word *ought to be* used is connected to the way it *is* commonly used.¹⁰⁵

The idea that the proper use of language is grounded in precedent is highly intuitive; and something similar to this idea also seems to underlie the logician's process of *explication*. Explication is the process of making a vague concept or a vague term more precise.¹⁰⁶ Carnap explains the process :

The task of making more exact a vague or not quite exact concept used in everyday life or in an earlier stage of scientific or logical development, or rather of replacing it by a newly constructed, more exact concept, belongs among the most important tasks of logical analysis and logical construction. We call this the task of explicating, or of giving an **explication** for the earlier concept; this earlier concept, or sometimes the term used for it, is called the **explicandum**; and the new concept, or its term, is called an **explicatum** of the old one.¹⁰⁷

¹⁰³ Locke's thoughts on this topic should be compared to those in Wittgenstein's later works, where Wittgenstein suggests that the meaning of a word is nothing more than its use.

¹⁰⁴ Locke, J. *An Essay Concerning Human Understanding*, p.479. Italics are original.

¹⁰⁵ It is important to note, however, that the rule of propriety can itself be formulated as a descriptive or prescriptive rule. Descriptive: The proper usage of language *is* determined by precedent usage. Prescriptive: The proper usage of language *ought to be* determined by precedent usage. The descriptive version can be refuted by any case in which proper usage is not determined by precedent usage. On the other hand, when considered in reference to the prescriptive version, the error in such a case points back to the case itself instead locating it within province of the rule. For the prescriptive rule does not say anything about how things *are*, but only about how they *ought to be*.

¹⁰⁶ The term 'explication' can be traced back to the work of Whewell. Whewell saw explication as a process that applied to concepts, whereas Mill applied it to linguistic terms. Likewise, Carnap saw the process as applying first and foremost to concepts whereas Quine saw the process as one applying primarily to linguistic terms.

¹⁰⁷ Carnap, R. *Meaning and Necessity*, p. 8.

Turning to Mill, we find the suggestion that the process of explication *should be* governed by something like the rule of propriety.¹⁰⁸

To give a precise meaning to general names is, then, to fix with steadiness the attribute or attributes connoted by each concrete general name and connoted by the corresponding abstract name. ... This is not difficult in the case of new names; of the technical terms created by scientific inquirers for the purposes of science or art. But when a name is in common use, the difficulty is greater; the problem in this case not being that of choosing a convenient connotation for the name, but of ascertaining and fixing the connotation with which it is already used. ...

It would [...] be a complete misunderstanding of the proper office of a logician in dealing with terms already in use, if we were to think that because a name has not at present an ascertained connotation, it is competent to any one to give it such a connotation at his own choice.

The meaning of a term actually in use is not an arbitrary quantity to be fixed, but an unknown quantity to be sought.

In the first place, it is obviously desirable to avail ourselves, as far as possible, of the associations already connected with the name; not enjoining the employment of it in a manner which conflicts with all previous habits, and especially not so as to require the rupture of those strongest of all associations between names, which are created by familiarity with propositions in which they are predicated of one another. ... The endeavor should be, that all generally received propositions into which the term enters, should be at least as true after its meaning is fixed, as they were before ; and that the concrete name, therefore, should not receive such a connotation as shall prevent it from denoting things which, in common language, it is currently affirmed of. The fixed and precise connotation which it receives should not be in deviation from, but in agreement (as far as it goes) with, the vague and fluctuation connotation which the term already had.¹⁰⁹

Thus, according to Mill, if the explicatum fails to capture the ordinary meaning of explicandum, the logician has abused the discretion afforded to him in the process of explication.

Both the rule of propriety and the process of explication can be viewed as cases (in grammar) where the distinction between description and prescription is

¹⁰⁸ Mill does not mention the term 'explication' in the following passage. He does mention it on the following page, however, attributing its origin to Whewell.

¹⁰⁹ Mill, J.S., *A System of Logic*, pp. 467-469. Bold face mine.

blurred. They suggest, at the very least, that some theories of grammar have both descriptive and prescriptive aspects. If this is so, however, then they constitute potential objections to the claim that every theory of quotation must be either descriptive or prescriptive, but not both.

In response to these kinds of objections, the following facts are worthy of consideration. First, although Locke recognized the rule of propriety, he also had doubts about it—especially concerning its adequacy in guiding the philosophical use of language.

Common use *regulates the meaning of Words* pretty well for common Conversation; but no body having an Authority to establish the precise signification of Words, nor determine to what *Ideas* any one shall annex them, common Use is not sufficient to adjust them to philosophical Discourses; there being scarce any Name, of any very complex *Idea*, (to say nothing of others,) which, in common Use, has not great latitude, and which keeping within the bounds of Propriety, may not be made the sign of far different *Ideas*. Besides, the rule and measure of Propriety it self being no where established, it is often a matter of dispute, whether this or that way of using a Word, be propriety of Speech, or no.¹¹⁰

In this passage Locke places important limitations on the rule of propriety. He restricts its range of application to ordinary discourse, since he does not think *philosophical discourse* should be constrained by the rule. He also points out that the rule itself is nowhere established. In the end, Locke admits that the supposed bridge which spans the is-ought gap in grammar (if it exists at all) is rather shaky and inadequate for philosophical use.

Second, turning to explication, we find further questions about the status of the bridge, since neither Carnap nor Quine thought the process of explication ought to be governed by the rule of propriety. Unlike Mill, both Carnap and

¹¹⁰ Locke, J., *An Essay Concerning Human Understanding*, p. 479.

Quine explicitly reject the idea that the logician is obliged to make the explicatum track the ordinary meaning of the explicandum. Carnap writes:

Generally speaking, it is not required that an explicatum have, as nearly as possible, the same meaning as the explicandum; it should, however, correspond to the explicandum in such a way that it can be used instead of the latter.¹¹¹

And Quine writes:

This construction is paradigmatic of what we are most typically up to when in a philosophical spirit we offer an "analysis" or "explication" of some hitherto inadequately formulated "idea" or expression. We do not claim synonymy. We do not claim to make clear and explicit what the users of the unclear expression had unconsciously in mind all along. We do not expose hidden meanings, as the words 'analysis' and 'explication' would suggest; we supply lacks. We fix on the particular functions of the unclear expression that make it worth troubling about, and then devise a substitute, clear and couched in terms of our liking, that fills those functions. Beyond those conditions of partial agreement, dictated by our interests and purposes, any traits of the explicans come under the head of "don't-cares." Under this head we are free to allow the explicans all manner of novel connotations never associated with the explicandum.¹¹²

From these passages it should be evident that neither Carnap nor Quine viewed explication as a process having both an essential descriptive component and an essential prescriptive component.

Lastly, even Mill, who advocated a more intimate connection between prescription and description, realized that in many cases, such an intimate connection is neither practical nor desirable. Mill writes:

Having laid down the principles which ought for the most part to be observed in attempting to give a precise connotation to a term in use, I must now add, that it is not always practicable to adhere to those principles, and that even when practicable, it is occasionally not desirable.

¹¹¹ Carnap, R., *Meaning and Necessity*, p. 8.

¹¹² Quine, W.V., *Word and Object*, p. 258-259.

Cases in which it is impossible to comply with all the conditions of a precise definition of a name in agreement with usage, occur very frequently. There is often no one connotation capable of being given to a word, so that it shall still denote every thing it is accustomed to denote; or that all the propositions into which it is accustomed to enter, and which have any foundation in truth, shall remain true. Independent of accidental ambiguities, in which the different meanings have no connection with one another; it continually happens that a word is used in two or more senses derived from each other, but yet radically distinct. So long as a term is vague, that is, so long as its connotation is not ascertained and permanently fixed, it is constantly liable to be applied by *extension* from one thing to another, until it reaches things which have little, or even no, resemblance to those which were first designated by it.¹¹³

In this passage Mill recognizes that the rule of propriety must be abandoned when one is attempting to explicate an ambiguous term. And these observations by Mill are pertinent, to the philosophical theories of quotation that have been developed over the past fifty years. For as we have already observed (and will observe further in the following parts of this chapter), there are several different uses for quotation marks in ordinary written discourse. In short, if quotation marks are ambiguous signs, then the attempt to make their proper usage conform to precedent usage should be abandoned. Prescription in this case should not follow description.

With these facts in plain view, we must nevertheless concede that there are some theories in grammar that may legitimately have both descriptive and prescriptive aspects. As generally applied to grammatical theories, the distinction between prescriptive theories and descriptive theories is too categorical. At the same time, because of the ambiguous nature of quotation marks, it is maintained here that a theory of quotation should not be one of them.

¹¹³ Mill, J., *A System of Logic*, p. 473.

A theory of quotation, then, can be either prescriptive or descriptive, but should not be both. And if a single theory does by chance (because the theorist is applying the rule of propriety) involve both prescriptive and descriptive aspects, we can at least require that the theorist clearly partition his theory into its descriptive component and its prescriptive component before evaluation or justification takes place.

§4 ORDINARY DISCOURSE AND PHILOSOPHICAL DISCOURSE

An investigation into quotation will also benefit from drawing a distinction between the use of quotation marks in ordinary discourse and their use in philosophical discourse.

The distinction between ordinary and philosophical language was already briefly discussed in the preceding section. Not only did Locke and Mill recognize the distinction, they also emphasized its importance.¹¹⁴ For the present purpose, however, we are more concerned with classifying *discourses* into ordinary and philosophical, as opposed to the *languages* which are used to compose them.

The distinction between ordinary and philosophical discourses may be drawn in several ways. For our purposes here, the distinction may be drawn roughly by taking into consideration the subject matter of the discourse. The subject matter of a discourse will be considered philosophical if and only if it

¹¹⁴ The distinction, however, neither began nor ended in the works of these two authors. Prior to Locke, for example, the distinction was emphasized by John Wilkins in his *Essay towards a Real Character and a Philosophical Language* (1668). After Mill, the distinction was discussed explicitly in these terms by W. S. Jevons in his *Elementary Lessons in Logic* (1902). Indeed, the idea of a philosophical language has a long history amongst logicians, starting with Leibniz in the Seventeenth Century, revisited by Boole, Mill and Frege in the Nineteenth Century, and continued by Carnap and Quine in the Twentieth Century.

occurs in a philosophical journal, was reviewed in a philosophical journal, is classed among the philosophical works by a library, or *would be* classed among the philosophical works by a library. If the subject matter of a discourse is philosophical, then we may count the discourse as philosophical. On the other hand, if the subject matter is not philosophical, we may count the discourse as non-philosophical. For the purpose of discussing quotation, all non-philosophical discourses will be considered ordinary.¹¹⁵

§5 FORTY-TWO DISTINCT PROGRAMS

By acknowledging the distinctions made in the previous three sections, we find that a theory of about the use of quotation marks can be many things. First of all, it can be either (i) a theory about the use of inverted commas, (q) a theory about the act of quoting, (m) a theory about devices for mentioning signs, or some combination of these: (iq), (qm), (im), (iqm). Secondly, it can be (D) descriptive or (P) prescriptive (but should not be both). Thirdly, it can be a theory about the use of quotation marks in (o) ordinary discourse, (p) philosophical discourse, or (op) both. Assuming that prescriptive and descriptive theories should remain

¹¹⁵ Some may object to equating ordinary discourse with non-philosophical discourse on the grounds that there are many cases of non-philosophical discourses that are far from ordinary. Many journal articles in chemistry or biology, for example, are non-philosophical, but, due to their highly specialized nature, also seem to be improperly classified as ordinary discourses. To reply to this type of objection, it will be noted that I mentioned earlier in this section that there are several ways of distinguishing philosophical discourses from ordinary discourses. I have chosen a way that best facilitates the discussion of quotation. The decision was influenced by the fact that there is an important difference between the way quotation marks are ordinarily used (by laymen and scientists alike), and the way in which philosophers (following Frege's lead) tend to use them. This is the difference we are primarily interested in capturing; and our method of dividing discourse into ordinary and philosophical reflects this. Those, however, who are still troubled by the suggested use of the term 'ordinary' can imagine it replaced by the term 'non-philosophical' in what follows.

mutually exclusive, these distinctions give rise to forty-two distinct programs which are set out and numbered below.

Descriptive Theories

	(i)	(q)	(m)	(iq)	(qm)	(im)	(iqm)
(o)	Program 1 (D,i,o)	Program 2 (D,q,o)	Program 3 (D,m,o)	Program 4 (D,iq,o)	Program 5 (D,qm,o)	Program 6 (D,im,o)	Program 7 (D,iqm,o)
(p)	Program 8 (D,i,p)	Program 9 (D,q,p)	Program 10 (D,m,p)	Program 11 (D,iq,p)	Program 12 (D,qm,p)	Program 13 (D,im,p)	Program 14 (D,iqm,p)
(op)	Program 15 (D,i,op)	Program 16 (D,q,op)	Program 17 (D,m,op)	Program 18 (D,iq,op)	Program 19 (D,qm,op)	Program 20 (D,im,op)	Program 21 (D,iqm,op)

Prescriptive Theories

	(i)	(q)	(m)	(iq)	(qm)	(im)	(iqm)
(o)	Program 22 (P,i,o)	Program 23 (P,q,o)	Program 24 (P,m,o)	Program 25 (P,iq,o)	Program 26 (P,qm,o)	Program 27 (P,im,o)	Program 28 (P,iqm,o)
(p)	Program 29 (P,i,p)	Program 30 (P,q,p)	Program 31 (P,m,p)	Program 32 (P,iq,p)	Program 33 (P,qm,p)	Program 34 (P,im,p)	Program 35 (P,iqm,p)
(op)	Program 36 (P,i,op)	Program 37 (P,q,op)	Program 38 (P,m,op)	Program 39 (P,iq,op)	Program 40 (P,qm,op)	Program 41 (P,im,op)	Program 42 (P,iqm,op)

Of these forty-two programs, there are two that have special importance, viz., programs 21 and 31. Program 21 is of special importance because it is the prominent program that has been pursued in philosophy since 1979, when Donald Davidson published his now famous article, "Quotation."¹¹⁶ In the current debates over quotation, it is generally taken for granted that a theory of quotation should meet the requirements of program 21. This is to say, most current theorists are attempting to establish a single descriptive theory of quotation that accounts for acts of quoting, acts of using of inverted commas, *and* acts of mentioning signs, as these acts occur in *both* ordinary *and* philosophical discourse. As we shall see in the next part of this chapter, there are several reasons for thinking that program 21 was misconceived and that it is highly intractable.

¹¹⁶ Davidson, D., "Quotation" 1979.

Program 31 is the program of pursuing a prescriptive theory concerning devices for mentioning signs in a philosophical discourse. Such a theory has value for those branches of philosophy (like the theory of notation) that take signs as the subject of study. Part IV of this chapter is devoted to setting out a theory which meets the requirements of program 31. Before, however, we turn to the attempt at program 31, we will first take a careful look at the history of quotation, both in ordinary language and in philosophy. Beyond providing evidence for the claim that Program 21 is misconceived and intractable, these histories will inform, and provide the proper context for, the theory presented in Part IV below.

PART III AN HISTORICAL ANALYSIS OF QUOTATION

§1 OVERVIEW

In order to promote a better understanding of the philosophical debate concerning quotation marks, it will be beneficial to examine the debate's historical development, starting with Frege at end of the nineteenth century and working our way up through the beginning of the twenty-first century.¹¹⁷ By considering the history in this way, it will be easier to see how numerous factors, including misunderstandings and confusions, have shaped the current philosophical debate over quotation marks. Before turning to this philosophical history, however, a look at the history of quotation marks as a form of punctuation should prove, for similar reasons, equally beneficial.

¹¹⁷ Although quotation marks were used by philosophers and logicians prior to Frege, I know of no philosophical discussion of their use prior to Frege.

Philosophical discussions of quotation are rarely (if ever) preceded and informed by a thorough historical account of the origin and development of quotation marks—i.e., the history of quotation marks considered as a general form of written punctuation. And the failure to examine this more general history has allowed many philosophers to maintain ideas about the use, function, and nature of quotation marks that are difficult to reconcile with the historical facts. Moreover, many philosophers over the past century have been searching to discover how quotation marks work, as if they were carefully engineered linguistic tools that were designed and created to fulfill a specific function. An examination of the history, however, quickly reveals that the development of quotation marks (and punctuation in general for that matter) was haphazard; and that if quotation marks are to have any *unique* function at all, it will only be a function that we choose to prescribe to them. A reminder from Wittgenstein may prove helpful here:

Philosophers very often talk about investigation, analyzing, the meaning of words. But let's not forget that a word hasn't got a meaning given to it, as it were, by a power independent of us, so that there could be a kind of scientific investigation into what the word *really* means. A word has the meaning someone has given to it.¹¹⁸

§2 SOME PRELIMINARY OBSERVATIONS CONCERNING QUOTATION MARKS

Before delving into the origin and development of quotation marks, I would like to raise three general points which may or may not be obvious.

Point One: Quotation marks are a form of punctuation. (as currently employed)

Point Two: Punctuation is an accidental feature of written language.¹¹⁹

¹¹⁸ Wittgenstein, *The Blue Book*, pp 27-28.

¹¹⁹ Here the word 'accidental' is to be taken in the sense in which it contrasts with 'essential'.

Point Three: Written language differs from spoken language in important ways.

The first of these points (if not obvious already) will become obvious in the following section. In this section we will consider the third and second points, respectively.

Written language differs from spoken language in obvious ways. For example, spoken words originate in the vocal chords of a speaker and are apprehended by the ear; whereas written words originate from the hand of a writer and are apprehended by the eye.¹²⁰ In short, the spoken word and the written word have different objectic properties. One could argue, however, that the differences in their objectic properties are relatively unimportant, since written words have all the same semantic properties as their spoken counterparts, and vice versa.¹²¹ Whether this is so or not, Aristotle held the contrary view. In *De Interpretatione*, Aristotle said:

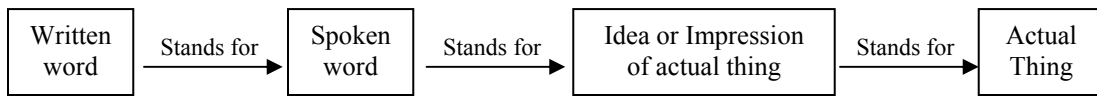
spoken sounds are symbols of affections in the soul, and written marks are symbols of spoken sounds. And just as written marks are not the same for all men, neither are spoken sounds. But what these are in the first place signs of—affections of the soul—are the same for all; and what the affections are likenesses of—actual things—are also the same.¹²²

This passage is often explained in the following way: the written term stands for the spoken term; the spoken term stands for the mental term; and the mental term stands for the actual thing.

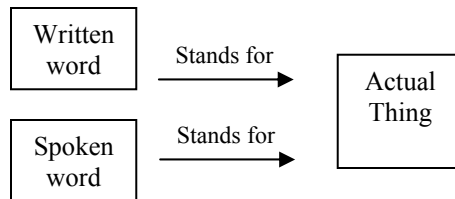
¹²⁰ These differences explain why a deaf person will have difficulty with spoken language, and a blind person with written language.

¹²¹ But do they really? There are, after all, cases in which a spoken expression is ambiguous while its written counterpart is not. Consider: 'John hit his head on the bough' and 'John hit his head on the bow', both of which are pronounced the same.

¹²² Aristotle *De Interpretatione*, p. 25.



Many contemporary philosophers of language would disagree with this scheme, for several reasons. First, they would reject the claim that spoken words stand for ideas; and more to the point, they would reject the claim that written words stand for spoken words. The contemporary view of the matter suggests that both spoken and written words stand directly for actual things.



We may call the contemporary view "the direct and equal view," since on this view the words stand directly for actual things, and the semantic properties of spoken and written words are the same. There are at least two ways to explain the difference between the contemporary view and Aristotle's view; either i) Aristotle was wrong or ii) the semantic function of written words has changed over time. As we will see below, there is evidence to suggest that Aristotle's observations were not wrong when he wrote, but that the semantic function of written language has changed over time.

Florian Coulmas' *Writing Systems of the World* (1989), involves not only a comparative study of different writing systems, but also an investigation into the

origins of writing. In the opening paragraph of this book, Coulmas emphasizes the important differences between written and spoken language.

Writing is the single most important sign system ever invented on our planet. A skeptic may disagree and point out that speech after all is a sign system too, and one that is clearly more important than writing. Such an objection, however, misses the point. Whether or not speech is a product of nature or of the human mind has been a hotly debated question since antiquity, but there is general agreement that writing is an artefact. Many linguists believe that humans beings are born to speak, a belief strongly supported by the fact that there is no society known which lacks speech. ... Writing, on the other hand, is absent from many societies, and we do not consider this an abnormality or essential defect. Writing is a cultural achievement rather than a universal property and as such is much less important than speech for our self-understanding. Anything that is an invention might as well not be there, and writing, unlike speech, falls into this category.¹²³

In this passage, Coulmas emphasizes the fact that, unlike spoken language, writing was an invention. Moreover, research into the history and origins of writing reveals that Aristotle was largely correct in his claim; the alphabetic writing systems that are currently employed in western civilizations grew out of systems that were first developed in Ancient Greece as notations for recording and reproducing spoken discourse.¹²⁴ In other words, during Aristotle's time, written discourse stood to spoken discourse in much the same relation as a musical score stands to the musical performance—the former primarily serves to help record and reproduce the latter.¹²⁵ Indeed, it is no mere coincidence that our alphabetic system allows us to write out anything that is spoken and read aloud anything that is written. These features were designed into the system. An

¹²³ Coulmas, *The Writing Systems of the World*, p. 3.

¹²⁴ Not all writing systems developed as notations for spoken language. The Chinese writing system, for example, is neither alphabetic nor a notation for the spoken word. See Coulmas 1989 for more information on the history and nature of writing systems.

¹²⁵ It should be mentioned here that Nelson Goodman denies that the primary function of the musical score is to facilitate the musical performance. He claims the primary function is to preserve the identity of the work. (See *Languages of Art*, p.128)

alphabetic writing system maps individual letters (which are by themselves meaningless) to individual sounds (which are by themselves meaningless), allowing for the transformation of the spoken word into the written word, and vice versa.¹²⁶ In this sense, a written word in an alphabetic system serves first and foremost as a vehicle to record and reproduce sounds.

This point is further explained by M.B. Parkes in *Pause and Effect: An Introduction to the History of Punctuation in the West* (1993):

In Antiquity the written word was regarded as a record of the spoken word, and texts were usually read aloud.¹²⁷

and:

Instances of silent reading were so rare that the young Augustine was astonished when he encountered Ambrose reading without making a sound.¹²⁸

In these passages, Parks is claiming that as late as the fourth century A.D., the function of the written word was primarily to record and facilitate the reproduction of the spoken word. The silent reading of an alphabetic script, which in our time is more common than reading aloud, was unusual in antiquity.

Indirect (or dependent) meaning is just one of the characteristics of ancient written discourse that was lost in the evolution of western writing. Many of the current features of our writing systems were not features of ancient writing. The spacing between written words, for example, is another feature of our written

¹²⁶ It is helpful to mention that not all writing systems work in this way. The Chinese writing system, for example, is not essentially phonetic; the written signs have no direct connection to any particular pronunciation. The system is ideographic in nature, which means that the written sign has a direct connection to ideas or actual things, independently of any spoken language.

¹²⁷ Parkes, *Pause and Effect*, p. 1. In this passage, Parkes also reinforces the second point mentioned at the outset of this section, viz. that punctuation is a feature of written discourse.

¹²⁸ *Ibid.*, p.9.

language which we take for granted, but which was actually an innovation of seventh century Irish scribes.¹²⁹ Prior to that period, Latin and Greek were usually written in *scriptio continua*, i.e., without word spacing.¹³⁰ Texts written in *scriptio continua*, however, were very difficult to read. As a result, the reader would often insert markings into the text to help facilitate reading. In other words, in antiquity, punctuation was added to a written discourse by the reader, not by the writer. Parkes explains:

When a text was written in *scriptio continua* it required careful preparation before it could be read aloud with appropriate pronunciation and expression. Rendering a text in *scriptio continua* proceeded from identification of the different elements – letters, syllables, words – through further stages to comprehension of the whole work. Reading at first sight was thus unusual and unexpected.¹³¹

There is little evidence before the sixth century that guides to phrasing – punctuation – originated with the author. ... If authors supplied punctuation to a text it was as readers not writers.¹³²

The thesis that Parkes maintains is that punctuation marks were originally placed into a text by the reader to facilitate reading, i.e., they were "aids for inexperienced readers."¹³³ Moreover, even when marks of punctuation began to be added by the author/writer, their use was rarely governed by widely accepted strict rules. The widespread standardization of punctuation (like spelling) was brought about only after the development of printing.

Printers and compositors exerted a large influence on the use and standardization of punctuation. Parkes writes:

¹²⁹ See Parkes, pp. 23-25.

¹³⁰ *Scriptio continua* is a style of writing in which there is no spacing between words.

¹³¹ *Ibid.*, p. 10.

¹³² Parkes, *Pause and Effect*, p. 9.

¹³³ This is the subtitle of the first chapter of Parkes' book *Pause and Effect*.

By the 1580s there is clear evidence that composers were responsible for introducing punctuation marks – especially the semi-colon – to replace others indicated in an author's copy.¹³⁴

and:

By the end of the sixteenth century at least, the written word had become associated in the minds of readers with the printed word, and the conventions of written language had become dominated by those employed in printed texts.¹³⁵

These theses are further supported by C.J. Mitchell, who writes in "Quotation Marks, National Compositorial Habits and False Imprints" (1983):

As late as the seventeenth-century punctuation in handwriting was quite haphazard: the significance of a given mark varied almost as frequently as spelling did ...¹³⁶

and:

Most authors paid little attention to punctuation, and expected the printer to impose order and consistency ...¹³⁷

This examination of the history of our writing systems and punctuation reveals that we are dealing with artifacts. And these artifacts are a product, not of some deity of grammar, but of a haphazard evolution based to a large extent on trial and error. Punctuation in general was originally introduced into a text by the reader, not the writer; and its use was not standardized until after the development of printing. What remains to be shown is that quotation marks, the form of punctuation in which we are primarily interested, resisted standardization more than any other form of punctuation.

¹³⁴ *Ibid.*, p. 53.

¹³⁵ *Ibid.*, p. 56.

¹³⁶ Mitchell, "Quotation marks, National Compositorial Habits and False Imprints," p. 365.

¹³⁷ *Ibid.*, p. 376.

§3 THE HISTORY OF QUOTATION MARKS AS A FORM OF PUNCTUATION

In 1921, Douglas McMurtrie published a note in the *Transactions of the Bibliographical Society* announcing his plan to research the origins and development of quotation marks. McMurtrie, an historian who published numerous articles on the history of printing, wrote:

The feature which I have undertaken to study and report upon is the origin and development of the marks of quotation. As is well known, the practice of printers in any country in indicating quoted passages differs from those in almost every other country. Thus, the French printers use one type of quotation marks; the Italians printers use another; the Germans a third; the Dutch a fourth. There is even difference in style between the printers of England and the United States.

It will also be found that the practice in any country is not what it was fifty or a hundred years ago, and the evolution of practice in each country is both interesting and illuminating.

As there is practically no information on the subject of quotation marks in the existing literature on printing, the only method of study is the examination of hundreds of volumes printed at various dates and the record of the style followed in them with reference to quotation marks. Such a study I am now making, and hope to have the results ready for publication within a year.¹³⁸

In 1926, McMurtrie published the results of his research in the *Gazette of the Grolier Club*, and began his short article:

No other mark of punctuation—or if one should object to the exactitude of that term—no other typographic device or auxiliary has as much interest historically or as much variety in usage as the quotation mark.¹³⁹

This passage echoes his original claim (in 1921) about the lack of an international standard concerning the use of quotation marks. McMurtrie goes on to explain the use of quotation marks in an early text.

The earliest book discovered in which appeared indicia which may properly be termed marks of quotation was printed in 1516 at Strasbourg, Alsace (then in Germany), by Mathias Schurer. It was "De Vitis

¹³⁸ McMurtrie, "The Origin and Development of the Marks of Quotation," pp. 133-134.

¹³⁹ McMurtrie, "Concerning Quotation Marks," p. 177.

Sophistarum" by Flavius Philostratus. The marks consisted of two commas in the left hand margin of each page outside the regular type measure. They were placed at the beginning of each line in which a quoted passage appeared, and were evidently added after the page was set up, because their alignment varies greatly. There was no method of showing just where in a line a quotation began or where it ended. Thus if a cited passage started in the middle of one line, ran through two full lines, and extended through the first two words of the next, the pairs of commas would appear at the left extremity of all four of the lines involved. It should be added that the practice was not always absolutely uniform.¹⁴⁰

McMurtrie points out that quotation marks were originally placed in the margin (not within the page measure) to indicate that a quotation occurs in the passage.¹⁴¹

This practice supposedly dates back as far as antiquity, and suggests that in their original employment, quotation marks were annotation marks, not punctuation marks.¹⁴² As regards the evolution of the practice, McMurtrie writes:

Taking the marks at fifty-year periods, we can trace the gradual transition from the double commas in the page margin to the symbols in use at the present time. The usage has also evolved gradually. First the marks were brought within the type measure, next they were placed to indicate the actual start and termination of the quoted passage, and finally the mark used at the end came to be different (some times the same symbol inverted) from the opening mark. But this transition involves too much detail to be here discussed.¹⁴³

So, over time quotation marks made their way into the page measure and began to function like other forms of punctuation. When this happened, a set of closing quotation marks were also introduced to delimit the scope of the quoted

¹⁴⁰ *Ibid.*, pp. 178-179.

¹⁴¹ Both Mitchell and Parkes confirm this claim. Also, this point should be considered in relation to Davidson's theory below in §8.

¹⁴² Marks of annotation differ from marks of punctuation in that the former usually appeared in the margin (outside of the page measure); and their function was to comment on, or draw attention to, features of the text within the page measure. In short, marks of annotation function like meta-commentary. The theory that quotation marks were originally annotation marks is presented by Parkes. Parkes maintains that the dipole (the ancestor the quotation mark) was originally a mark of annotation which only began to be conceived as a mark of punctuation once it was moved out of the margins and into the page measure. p. 58

¹⁴³ McMurtrie, "Concerning Quotation Marks," p. 180.

expression. McMurtrie concludes his brief article by emphasizing, once again, the lack of a universally accepted practice with regard to the use of quotation marks. He writes:

quotation marks [...] are the only typographic device which is different in practically every country. We thus find quotations indicated one way in England, another way in France, and with yet other and differing methods in Germany, Holland, Sweden, and so forth. There is no other element of punctuation of which the same is true, with the limited exception of the inverted exclamation point and question mark placed at the beginning of sentences in Spanish printing.¹⁴⁴

Two later studies by C.J Mitchell (1983) and M.B. Parkes (1993) make reference to McMurtrie's work, and investigate the history of quotation in greater detail.¹⁴⁵ Mitchell's work is a brief article which focuses primarily on the use of quotation marks in eighteenth century printing. The basic thesis of his article is:

...that quotation marks appeared in characteristically different ways in different parts of eighteenth-century Europe, and to argue that if a work has an imprint stating it was printed in one region but has quotation marks characteristic of another region, then the imprint is probably false.¹⁴⁶

Mitchell's work is based on the assumption that the use of quotation marks in printed works was determined by the printer/compositor, not the author of the work; and that compositors in different countries had different practices. He attributes regional standardization, nevertheless, to the advent of printing.

The origins and development of quotation marks are obscure. The occasional use of marks of some kind seems to be a very ancient custom,

¹⁴⁴ McMurtrie, "Concerning Quotation Marks," p. 181.

¹⁴⁵ In the previous (section §2), where the history of punctuation (in general) was considered, the work of Mitchell and Parkes was already introduced. In the present section, which only deals with the history of quotation (a specific kind of punctuation), their work is considered again, but after McMurtrie's work, since the history of the research is being treated chronologically.

¹⁴⁶ Mitchell, "Quotation Marks, National Compositorial Habits and False Imprints." p. 360

but modern practice, systematic and largely obligatory, seems to have followed upon the invention of printing.¹⁴⁷

According to Mitchell, the use of quotation marks in eighteenth century printed texts was primarily governed by the habits of printers, not authors; but he goes on to claim that printers themselves used these marks without much conscious thought. He writes:

Printers' indifference to quotation marks reached its peak in the surprising fact that in many of their illustrations of the cases in which held the type, with a separate compartment for each letter or symbol, they omitted to show a compartment for double commas or guillemets. We can hardly expect that they paid quotation marks any more thought when actually using them.¹⁴⁸

Our sample shows quotation marks in half the works printed during the eighteenth-century, in a wide and still evolving variety of shapes and patterns, yet writers, scholars, printers and type designers gave them little thought. Quotation marks had in many respects dipped below the level of conscious thought.¹⁴⁹

If Mitchell is correct in his claims, the use of quotation marks in the eighteenth century was governed largely by the unconscious habits of compositors. This is a point that raises further doubts about the possibility of a discovering *the* rule which governs how quotation marks are used, and how they work.

The history of quotation marks is also discussed by M.B. Parkes in *Pause and Effect*. The scope of Parkes' work is much wider than McMurtrie's or Mitchell's; he is concerned with punctuation in general, and he considers texts that were written before the development of printing.

¹⁴⁷ *Ibid.*, p. 362.

¹⁴⁸ *Ibid.*, p. 377.

¹⁴⁹ *Ibid.*, p. 378.

According to Parkes, both inverted commas and guillemets are descendents of the *diple*, a mark that was used in Antiquity and during the Middle Ages as a form of annotation.¹⁵⁰ He writes:

In Antiquity [the *diple*] had been inserted in the margins by readers in order to draw attention to something noteworthy in the text. In the seventh century Isidore described what came to be its principal function throughout the Middle Ages, when he related how it was used when copying works of writers of the Church as one of the ways to indicate the testimony of Scripture.¹⁵¹

Thus, the distant ancestor to the quotation mark was merely a pointing device used to capture the reader's attention. Moreover, it is not clear that the use of the *diple* in the Middle Ages should be considered as *mentioning* signs of scripture. It seems more appropriate to view them as indicating that passages from scripture are occurring. By the ninth century, the marks were used to not only to indicate passages from the scripture, but also to quote items previously written by other important figures in the church.¹⁵²

It was under the influence of sixteenth century printers that the *diple* was re-stylized and turned into a character resembling the inverted comma.

During the sixteenth century the *diple* was employed as a *nota* in the margins of printed books as well as manuscripts. In type the *diple* was represented by a pair of the semicircular comma-marks which had appeared with roman type faces, a device which would enable a reader familiar with the double mark in manuscript to identify it as a *diple*. At first the *nota* was printed in the margins outside the regular type measure, and, as in manuscripts, opposite each line of text containing part of a quotation.¹⁵³

¹⁵⁰ A sample of this type of mark can be found on ODL(2.2.3).

¹⁵¹ Parkes, *Pause and Effect*, pp. 57-58.

¹⁵² Parkes, p. 58

¹⁵³ *Ibid.*, p. 58.

During the same century, the new marks were eventually taken out of the margin and placed directly in the text like other punctuation.

Towards the end of the sixteenth century the comma-marks representing the *diple* were removed from the margins and set within the page measure. ... the *nota* could now be set up in type with the text, rather than added later. This was a crucial stage in the transformation of the *diple* from an annotation mark to a mark of punctuation, but further development was generated by changes of use.¹⁵⁴

Parkes explains further how the commas gradually took on a new use based on certain accidental features of their original use.

Because the *diple* was used to indicate quotations from authorities it became one of several methods employed to identify gnomic utterances or *sententiae*, ... For the same reason the *nota* acquired emphatic significance, and, like italic type, was employed for emphasis even where there was no quotation.¹⁵⁵

One last development of the sixteenth century was the use of the commas to indicate direct speech as opposed to previously written discourse. Parkes writes:

In the 1570s a major development took place in English usage. By further extension of the employment of the *diple* to indicate quotations it appears alongside passages containing direct speech.¹⁵⁶

There were further innovations in the seventeenth and eighteenth centuries.

Various conventions were proposed to distinguish direct quotation from indirect quotation, and quotations of written language from quotations of spoken language. In the seventeenth century, for example, some French printers apparently used the *diple* exclusively for quoting spoken discourse, and employed italics for quoting written discourse.

¹⁵⁴ *Ibid.*, p. 58.

¹⁵⁵ *Ibid.*, pp. 58-59.

¹⁵⁶ *Ibid.*, p. 59.

In the seventeenth century French printers had placed the *diple* within the measure to indicate attributions of speech (direct or indirect), as opposed to quotations from written texts, which were printed in italic.¹⁵⁷

And we are told that in some eighteenth century works, "double commas were used for direct speech and single commas for reported speech."¹⁵⁸ The eighteenth century is also the period where quotation marks, as we know them, came into use.

At the beginning of the eighteenth century English printers transformed the comma marks used for the *diple* into a new punctuation symbol which we may properly call 'quotation marks'. As a first stage in this new development they repeated the nota by inserting inverted commas in the text immediately before the passage of direct speech or quotation to 'open' it. The second stage was to insert raised commas in the text at the end of the passage to 'close' it.¹⁵⁹

As mentioned earlier, the arrangement and style of quotation marks in eighteenth century printed works still varied considerably from printer to printer, and their function varied as well.

The histories provided by McMurtrie, Mitchell, and Parkes reveal the haphazard evolution of quotation marks, and thereby cast doubt on any program that seeks to discover *the uniquely correct* theory of how quotation marks work. Another thing to notice about these histories is that none of them discusses the use of quotation marks for the purpose of mentioning expressions. This kind of use, which is currently standard in philosophical discourse, is not even recognized by the historians of punctuation; which further supports the view that the use of quotation marks in philosophical discourse is something quite distinct from their use in ordinary discourse. In the following sections, I turn to examine the history

¹⁵⁷ *Ibid.*, p. 60.

¹⁵⁸ *Ibid.*, pp. 59-60.

¹⁵⁹ *Ibid.*, p. 59.

of this philosophical use, along with the history of the debate which grew up around it.

§4 THREE ERAS OF QUOTATION IN PHILOSOPHICAL DISCOURSE

The history of the philosophical debate concerning quotation can be roughly divided into three eras.¹⁶⁰ The first era is *the logical era*; it lasts about fifty years, beginning with Frege's work in the 1890s and continuing through the 1940s with the publication of Quine's *Mathematical Logic* (1940) and Tarski's *Introduction to Logic* (1941). During this era, discussions of quotation occur primarily as brief digressions in logical works focused primarily on some other logical topic. As a result, most of the people who wrote about quotation during this era were logicians; and their interest in quotation was primarily connected with the need to mention signs for the purpose of logical exposition.

The second philosophical era of quotation is *the era of critique and transition*, beginning in the mid to late 1940s and continuing up through the early 1970s. This era is roughly characterized by a growing dissatisfaction with two distinct, but related, traditions that emerged in the logical era. The first tradition is simply Frege's convention of using of inverted commas; the second tradition is the adoption of Quine's terminology to mark the distinction between *using* a word and *mentioning* it. During this era, it becomes more common for discussions of quotation to occur in journal articles wholly devoted to the topic of quotation.

Moreover, the authors of these articles were often not logicians facing the

¹⁶⁰ This division is not perfect. There are people who wrote during the latter eras who are best classified as working in the logical tradition of the logical era. The division, nevertheless, captures the general trends rather well.

challenge of mentioning signs, but epistemologists, philosophers of language, philosophers of mind, etc., who were familiar with Frege's convention and Quine's terminology, but dissatisfied with them.¹⁶¹

The third era is *the linguistic era*; it begins in 1979 with the publication of Davidson's article "Quotation," and continues to the present. The work of this era is dominated by program 21, or the search for the correct theory about "how quotation marks work."¹⁶² Most of the discussions in this era involve setting out various theories of quotation and providing counter-examples to any theory which the author rejects.

During all three eras, the philosophical question, whether quantifiers can bind variables that fall within quotation marks, was debated. This problem was first raised by Tarski in "The Concept of Truth in Formalized Languages," (1935) and was readdressed by Quine in "Notes on Existence and Necessity" (1943). Quine, however, treated the problem as just one variant of the more general problem of quantifying into referentially opaque contexts, and this more general problem has a history of its own. The history presented here does not attempt to trace the history of the debate over quantifying into referentially opaque contexts, nor the history of the debate over whether quantifiers can reach variables within quotation marks, but will address this aspect of the philosophical debate concerning quotation only in passing.

¹⁶¹ Here I distinguish logicians from other types of philosophers. To be considered a logician, I would say that one must do more than learn logic, use logic, have an interest in logic, or even write and article or two about logic. I consider Carnap, Quine, Church, and Boolos to be logicians, since they not only wrote books on formal logic, but proved new theorems, regularly published articles in the *Journal of Symbolic Logic*, and were considered authorities on the subject. Philosophers like Sellars, Linsky, and Davidson, although well versed in logic, would not be logicians.

¹⁶² For a discussion of program 21, see Part II, §5 of this of this chapter.

§5 THE LOGICAL ERA (THE ERA OF PROGRAM 31)

The philosophical problem of quotation has its origin in the work of logicians. The most influential discussions of quotation began to appear in the mid-thirties and early forties among logicians like Carnap, Tarski and Quine. And it is worth noting, once again, that none of these early discussions occur in journal articles devoted to quotation. More often than not, they are short commentaries or digressions in texts concerning formal logic or the philosophy of logic.

The origin of the philosophical problem of quotation, however, dates back even further than the 1930s. As Tarski indicates in his article "The Concept of Truth In Formalized Languages," Leśniewski was seriously engaged with these issues more than a decade earlier.

The considerations which I shall put forward in this connexion are, for the most part, not the result of my own studies. Views are expressed in them which have been developed by S. Leśniewski in his lectures at the University of Warsaw (from the year 1919/1920 onwards), in scientific discussions and in private conversations: this applies, in particular, to almost everything which I shall say about expressions in quotation marks and the semantical antinomies. It remains perhaps to add that this fact does not in the least involve Lesniewski in the responsibility for the sketchy and perhaps not quite precise form in which the following remarks are presented.¹⁶³

This passage suggests that much of Tarski's thought on quotation was influenced by Leśniewski's earlier work. But in order to discern the true origin of the philosophical problem of quotation, we need to go back even further, to the late

¹⁶³ Tarski, "The Concept of Truth in Formalized Languages," pp. 154-155.

nineteenth century and the work of Frege. In his 1893 *Grundgesetze Der Arithmetik*, Frege wrote:

The frequent use made of quotation marks may cause surprise. I use them to distinguish the cases where I speak about the sign itself from those where I speak about what is meant by it. Pedantic as this may appear, I think it necessary. It is remarkable how an inexact mode of speaking or writing, which perhaps was originally employed only for greater convenience or brevity and with full consciousness of its inaccuracy, may end in a confusion of thought, once that consciousness has disappeared. People have managed to mistake numerals for numbers, names for things named, the mere devices of arithmetic for its proper subject matter. Such experiences teach us how necessary it is to demand the highest exactness in manner of speech and writing. And I have taken pains to do justice to such demands, at any rate wherever it seemed to be of importance.¹⁶⁴

With this passage we reach the real starting point of our inquiry, the origin of the contemporary philosophical debate about quotation. Once again, it is important to note that Frege discusses quotation marks within a more substantial work concerning the foundations of mathematics. He was not writing a book or article about quotation. On the contrary, he was merely explaining how he was using quotation marks to avoid certain kinds of confusions. It is also worth noting that his usage was deviant enough from the ordinary usage of the time to warrant a cautionary note to the reader. Because of this cautionary note, many attribute the origin of the use of quotation marks in this way to Frege. Nevertheless, we must be careful in our characterization of the origin of Frege's convention.

It would be wrong to think that Frege's use of quotation marks was wholly unprecedented. Before Frege, the same use of quotation marks occurred in other forms of literature; and Frege's comments in "Ueber Sinn und Bedeutung" suggest that he saw his own usage as an extension of the common usage. Moreover, the

¹⁶⁴ Frege, *Grundgesetze Der Arithmetik*, p. 131.

use Frege makes of quotation marks in his logical writings was quite common in other logic texts of the period (e.g., Whately's *Elements of Logic* (1826), Mill's *A System of Logic* (1843), Boole's *The Laws of Thought* (1854), Venn's *Symbolic Logic* (1881), Carroll *Symbolic Logic*, (1896).) Perhaps the biggest difference between Frege and these other authors was that he was more self-consciously aware of his use, which may have led him, in turn, to a more systematic and consistent application.

By the first half of the twentieth century, Carnap, Tarski, and Quine fully appreciated Frege's worry about confusing signs with the things they stand for. In 1934, Carnap wrote:

If an expression of the object-language is being discussed, then either this expression must be written in inverted commas, or its syntactical designation (without inverted commas) must be used. But if the syntactical designation is what we are talking about, then it, in turn, must be put into inverted commas. Later on we shall show how very easily the neglect of this rule, and the failure to differentiate between symbols and the objects designated by them, leads to error and obscurity.¹⁶⁵

In 1940, Quine also strongly echoed Frege's warning. In a now famous passage in his *Mathematical Logic*, Quine wrote:

In the literature on the logic of statements, and in other foundational studies of mathematics as well, confusion and controversy have resulted from failure to distinguish clearly between an object and its name. Ordinarily the failure to maintain this distinction is not to be attributed to any close resemblance between the object and the name, even if the object happens to be a name in turn; for even the discrimination between one name and another is a visual operation of an elementary kind. The trouble comes rather in forgetting that a statement about an object must contain a name of the object rather than the object itself. If the object is a man or a city, physical circumstances prevent the error of using it instead of its name; when the object is a name or other expression in turn, however, the error is easily committed.

¹⁶⁵ Carnap, *The Logical Syntax of Language*, p. 18

As an illustration of the essential distinction, consider these three statements:

- (1) Boston is populous,
- (2) Boston is disyllabic,
- (3) 'Boston' is disyllabic.

The first two are incompatible, and indeed (1) is true and (2) false. Boston is a city rather than a word, and whereas a city may be populous, only a word is disyllabic. To say that the place-name in question is disyllabic we must use, not that name itself, but a name of it. The name of a name or other expression is commonly formed by putting the named expression in single quotation marks; the whole, called a *quotation*, denotes its interior. This device is used in (3), which, like (1), is true. (3) contains a name of the disyllabic word in question, just as (1) contains a name of the populous city in question. (3) is *about* a word which (1) *contains*; and (1) is about no word at all, but a city. In (1) the place-name is *used*, and in this way the city is *mentioned*; in (3) a quotation is used, and the place-name is mentioned. We mention *x* by using a name of *x*; and a statement about *x* contains a name of *x*.¹⁶⁶

This passage is historically important, not merely because it is one of the earlier statements that pays allegiance to Frege's initial concern, but also because it introduces historically important terminology: the now widely accepted and influential terminology of *use* and *mention*.¹⁶⁷

In 1941 Tarski corroborated the story of his fellow logicians when he published his *Introduction to Logic*. writing:

In order to avoid doubts [about whether we are discussing a sign or the thing the sign stands for], it is well to make clear to oneself a very

¹⁶⁶ Quine, *Mathematical Logic*, p.23.

¹⁶⁷ 1940 was a pivotal year for Frege's convention and quotation. An examination of his published writings reveals that Quine's usage of quotation marks prior to 1940 differs from his usage from 1940 onward. Prior to 1940, he uses double inverted commas to mention expressions; and he also used them for other things as well (for example, in his 1934 review of Carnap's *Logical Syntax of Language*, he uses quotation marks to mention concepts as well as words). In 1940, with the publication of *Mathematical Logic*, there was a marked change. He switched to single quotation marks for mentioning signs, and the convention is more rigorously followed. Since Carnap and Tarski were both visiting Harvard in 1939-1940 (where Quine was lecturing), it is reasonable to speculate that (a) there were discussions of quotation with Carnap and Tarski, and (b) these discussions had some influence on Quine's practice. The new usage (i.e., new for Quine) is debuted in *Mathematical Logic*, along with quasi-quotation.

important principle upon which the useful employment of language is dependent. According to this principle, whenever, in a sentence, we wish to say something about a certain thing, we have to use, in this sentence, not the thing itself but its name or designation.¹⁶⁸

And then:

...we will make it a rule that every expression should differ (at least in writing) from its name.

The problem arises as to how we can set about to form names of word and expressions. There are various devices to this effect. The simplest one among them is based on the convention of forming the name of an expression by placing it between quotation marks.¹⁶⁹

These passages, when taken together, begin to explain how a certain prescriptive rule about the use of quotation marks—one that started with Frege—began to take on the appearance of a grammatical law. Three exceptionally prominent logicians, all taking their cue from one of the founders of modern logic, said this is how quotation marks are to be used. It is not surprising, then, that the rule acquired a certain authority.

§6 THE ERA OF CRITIQUE AND TRANSITION (PHASE ONE)

The logicians' story about the use of quotation marks made an impression, and quickly became elevated to the status of lore.¹⁷⁰ One indication that the story was beginning to be perceived by some as inviolable doctrine can be gleaned from Carnap's *Introduction to Semantics and Formalization of Logic* (1942):

By adding quotes to an expression (sign, word) of a language, a name for that expression is constructed in the metalanguage for that language. ... Concerning the necessity of distinguishing between an expression and its name, whether formed with the help of quotes or in some other way,

¹⁶⁸ Tarski, *Introduction to Logic and to the Methodology of the Deductive Sciences*, p. 58.

¹⁶⁹ *Ibid.*, pp. 59-60.

¹⁷⁰ In his 1979 article "Quotation," Davidson uses the term 'lore' to describe the doctrine.

compare Frege [Grundgesetze] I, p.4; [Syntax] §42. **The requirement of the distinction should of course not be pendentally exaggerated.** There is no objection to all kinds of shorter and simpler formulations, provided the reader can have no practical doubt as to what is meant.¹⁷¹

This passage suggests more than a hint of caution concerning the implementation of Frege's convention. Moreover, it soon became obvious that, despite its pedigree, the official story was not quite as straightforward as it was made out to be. The theory was one thing—putting it into practice was another. Carnap's development of autonymous symbols¹⁷² and Quine's development of quasi-quotation¹⁷³ were two early signs that Frege's original rule, if not wholly unworkable, was at least not wholly adequate to meet all the requirements for a rigorous exposition of logic.¹⁷⁴

In addition to the incompleteness of the rule, there were also problems concerning its consistent application. For example, in his 1947 review of the second printing of Quine's *Mathematical Logic*, Church points out an inconsistency in Quine's own use of quotation marks. He wrote:

On page 25, lines 23-24, an inaccurate application of quotation marks—perhaps the only such in the book—remains uncorrected. Quine here quotes a passage from a mathematical textbook to illustrate confusion between use and mention, but offers an amendment of it which fails to remove the confusion. The passage is, in fact, not easily set right, even with the aid of syntactical variables and of Quine's device of quasi-quotation in addition to ordinary quotation; thus it may be used to illustrate the difficulties faced by any attempt to secure precision in

¹⁷¹ Carnap, *Introduction to Semantics and Formalization of Logic*, p. 237. (bold facing is mine)

¹⁷² Carnap allows signs to be their own names, in certain situations. In *The Logical Syntax of Language* he writes, "When a symbol is used ... in this way as a name for itself (or more precisely, as a name for its own symbol-design), we call it an *autonymous* symbol" p. 17. A brief discussion of Carnap's autonomous use of symbols occurs in Chapter I, Part III, §2 of this work.

¹⁷³ Quine's quasi-quotation provides the flexibility of mentioning types of expressions having a certain logical form without mentioning any specific expression having that form. For further details, see *Mathematical Logic*, pp. 33-37.

¹⁷⁴ Both of these amendments address different weaknesses in the original tale.

ordinary mathematical writing regarding the distinction of use and mention.¹⁷⁵

The exact nature of the problem spotted by Church is difficult to explain in writing, and Church doesn't even make an attempt to explicate the details in his review; but it is worth noting that Quine eventually modified the questionable passage for the 1951 revised edition of the work. This suggests, at any rate, that Quine came to recognize the passage as problematic. The most remarkable thing about Quine's error (if it was indeed an error) is that he commits it in his very attempt to warn the reader about committing this very kind of error. Here, if at any point, Quine must have been fully conscious of the distinction between use and mention; and therefore any errors concerning use and mention must be attributed to something beyond failure to take the distinction seriously. As Church suggests, this is strong evidence of the difficulties faced by anyone who attempts to use quotation marks in a consistent and rigorous way.

In addition to Church's review, there was another publication in 1947 that deserves to be mentioned here: Hans Reichenbach's *Elements of Symbolic Logic*.¹⁷⁶ There are three different places in this text where Reichenbach discusses the topic of quotation; but the most historically significant passage is the one in which he sets out his convention of token quotes. He writes:

We can interpret the function of the phrase 'this token' as an operation similar to the operation of the quotes explained in §3; the new operation will be symbolized by *token quotes*. Whereas the ordinary-quotes operation leads from a word to the name of that word, the token-quotes

¹⁷⁵ Church, A Review of Quine's *Mathematical Logic*. p. 56.

¹⁷⁶ Carnap's *Meaning and Necessity* was also published in this year, and it contains a few passages concerning quotation. These passages, however, are not exceptional from the perspective of the history.

operation leads from a token to a token denoting that token. Let us use little arrows for the token quotes; then the sign

$$\backslash a \swarrow \quad (1)$$

represents, not the name for the token 'a' in (1) but a token for it. (1) is not a name because the token (1) is a reflexive token and cannot be repeated; thus

$$\backslash a \swarrow \quad (2)$$

not only is a token different from (1), but also refers to a different token.¹⁷⁷

In this passage we find Reichenbach introducing a distinct convention for mentioning sign tokens as opposed to sign types. The need to develop such a convention points, once again, to a certain incompleteness in Frege's original convention.¹⁷⁸

By the late forties and early fifties, the difficulties in implementing Frege's convention had begun to be widely perceived; and discussions of quotation had moved beyond logic texts and into philosophical journals like *Mind* and *Analysis*. In 1948, Geach criticized Strawson for his misuse of quotation marks (*Mind* Vol. 57 No. 228); in 1949 he made a similar criticism of Carnap (*Mind* Vol. 58, No 232). These criticisms had a somewhat hostile tone, and in response R.M. Martin came to Strawson's defense. He wrote:

¹⁷⁷ Reichenbach, *The Elements of Symbolic Logic*, pp. 284-285.

¹⁷⁸ In 1948, Quine published a book review of Reichenbach's book in *The Journal of Philosophy* (vol. 45, No. 6, pp. 161-166). In that review Quine criticizes Reichenbach's use of quotation marks. He writes:

Repeated lapses of rigor are to be noted in the use of quotation marks; e.g., "Let 's' be the next formula . . . 'r' may contain free variables" (p. 175). A correct presentation would require metamathematical variables in place of the letter-quotations, and, in complex cases, recourse to quasi-quotation or an equivalent convention. Does the author use quotation thus loosely in an effort merely not to overwhelm beginners? No, I fear his confusion is genuine. (pp. 162-163)

Mr. Geach takes Mr. Strawson to task for failing to observe [the use-mention] distinction. Not wishing to enter into the controversy between them, I should merely like to point out several passages in which Mr. Geach himself fails to observe the distinction properly.¹⁷⁹

Martin then proceeded to show how, in the article that criticizes Strawson,

Geach *uses* signs that really should be *mentioned*.¹⁸⁰ After pointing out

Geach's own shortcomings, Martin concluded his commentary by writing:

The distinctions involved here are of the utmost importance for clarity in logical writing. They go back primarily to Frege, were neglected by Russell, and have been emphasized by such logicians as Hilbert, Lesniewski, Tarski, Carnap, Church and others ; but even relatively clear-minded philosophers often fail to use them correctly.¹⁸¹

In this last passage we find Martin extolling the importance of Frege's convention,

while simultaneously noting the difficulties in implementing it properly. This

attitude toward Frege's convention should be compared with Church's in 1947

(above) and again with Church's in 1950, when he wrote in a joint review of both

Geach's and Martin's articles:

The reviewer agrees with Martin's emphasis on the need for rigor rather than with Geach's concluding recommendation to employ the natural languages without attempting refinement of them. Nevertheless the sins against rigor in these matters which may be found in some of the writings of Carnap, of Strawson (criticized by Geach XIV, 203(1)), and that of Geach himself seem to show that quotation marks are often a rather clumsy instrument for the distinction of use and mention—even when supplemented, as Martin recommends, by Quine's device of quasi-quotation.¹⁸²

¹⁷⁹ Martin, "Mr. Geach on Mention and Use," p. 523. (bracketed material is mine)

¹⁸⁰ I do not supply the detailed nature of these errors, since they are fairly complicated and involve references to other papers which are themselves fairly technical. My purpose in treating these cases are twofold: 1) to show that there were problems with implementing Frege's convention, and 2) to show that there was an awareness of those problems. Martin also criticizes another view of quotation that Geach presents in his attack on Strawson, but this issue is not directly related to the history which is unfolding.

¹⁸¹ *Ibid.*, p. 524.

¹⁸² Church, "On Rigour in Semantics,; Mr. Geach on Mention and Use," p. 151.

Here we find Church beginning to weaken his allegiance to Frege's convention (although not his concern for maintaining the use-mention distinction). And six years later, in his *Introduction to Mathematical Logic*, his allegiance was virtually broken. He wrote:

Following the convenient and natural phraseology of Quine, we may distinguish between *use* and *mention* of a word or symbol. In "Man is a rational animal" the word "man" is used but not mentioned. In "The English translation of the French word *homme* has three letters" the word "man" is mentioned but not used. In "Man is a monosyllable" the word "man" is both mentioned and used, though used in an anomalous manner, namely autonomously.

Frege introduced the device of systematically indicating autonomy by quotation marks, and in his later publications (though not in the *Begriffsschrift*) words and symbols used autonomously are enclosed in single quotation marks in all cases. This has the effect that a word enclosed in single quotation marks is to be treated as a different word from that without the quotation marks—as if the quotation marks were two additional letters in the spelling of the word—and equivocity is thus removed by providing two different words to correspond to the different meanings. Many recent writers follow Frege in this systematic use of quotation marks, some using single quotation marks for this purpose, in order to reserve double quotation marks for their regular use as punctuation. As the reader has long since observed, Frege's systematic use of quotation marks is not adopted in this book. But we may employ quotation marks from time to time, especially in cases in which there might otherwise be real doubt of the meaning.¹⁸³

So Church decided against implementing Frege's convention in his own book on formal logic. Beyond that, there are other important things to note in this passage—things which foreshadow a good deal of the debate that was to come. In particular, we find Church presenting an example in which a word is *both* used *and* mentioned. This kind of example would prove to be more fascinating once the debate over quotation had left the province of logic and entered the territory of the philosophy of language.

¹⁸³ Church, *Introduction to Mathematical Logic*, pp. 61-62.

The initial realization that a term could be simultaneously used *and* mentioned does not occur with Church in 1950, but dates back at least to Quine's 1943 example 'Giorgione was so-called because of his size'. (See Quine 1943)¹⁸⁴ Nevertheless, many attributed to the logicians the thesis that the distinction between use and mention was exclusive, despite examples and explicit statements which clearly suggested the contrary.¹⁸⁵

Another early statement warning against construing the use-mention distinction as exclusive is found in Geach's "On Names of Expressions" (1950):

While it is always necessary to distinguish between an expression and its name, it is a mistake to oppose mention and use as though mention of an expression could never include use of it.¹⁸⁶

The history reveals, however, that these early statements by Church and Geach failed to make a lasting impression on the philosophical community. As a result, many future writers on quotation would re-discover the non-exclusivity of the distinction, and then attempt to wield this as an objection to the logician's view.¹⁸⁷

A few other articles published in the fifties deserve mention. The first is "Quotation Marks, Sentences, and Propositions" published in 1950 by Wilfrid Sellars. This article deserves mention not because it was exceptionally influential, but because it anticipates what eventually came to be known as

¹⁸⁴ In his analysis of the example, Quine reveals that the occurrence of the term 'Giorgione' is not purely designative (in 1953—not "purely referential"). Although he never explicitly states the term 'Giorgione' is both used and mentioned in the example, the recognition that the term refers while not being purely referential amounts to the same thing. Moreover, Quine's amendment to the example shows how it is possible to eliminate cases of simultaneous use and mention, so that each occurrence involves either one or the other, but not both.

¹⁸⁵ In "Reference and Modality," for example, Quine explicitly denies that quotation marks *must always* destroy referential occurrence. (Quine 1953 p. 141) This point about Quine was made by Ori Simchen (Simchen 1999 p. 326)

¹⁸⁶ Geach, "On Names of Expressions," p. 388.

¹⁸⁷ In the following section (§7) we find Garver, Christensen and Searle among those who make non-exclusivity part of their attack on the logicians' view of quotation marks.

Davidson's demonstrative theory of quotation. Sellars develops and distinguishes two distinct varieties of quotation: *pragmatic quotation* and *syntactic quotation*.

A pragmatic quotation is created by flanking an expression with asterisks; a syntactic quotation is created by flanking an expression with inverted commas. In a pragmatic quotation, the asterisks function like a descriptive phrase that incorporates a demonstrative term, and the demonstrative term refers to the shape of the expression within the asterisks. In syntactic quotation, the inverted commas function like additional letters to create the name of the expression within the inverted commas. In short, syntactic quotation produces a name, while pragmatic quotation results in exhibiting a sample of a shape correlated with a demonstrative term that points to that shape. Sellars writes:

The quotation marks which serve in the construction of such ego-centric descriptions [...] might well be called "ego-centric quotes." Since, however, the theory of ego-centric particulars belongs to pragmatics, I shall call them *pragmatic quotes*. In the following argument, wherever a given usage of quotation marks is clearly intended to be a case of pragmatic quotation, we shall replace the ordinary quotation marks by asterisk.¹⁸⁸

and then:

Quotation marks are also used (by the logician) to form the *names* of expressions. We must distinguish between *pragmatic* or ego-centric use of quotation marks and the non-ego-centric or *syntactical* use. In the case of the former, an explication of their token-reflexive character would show that the quotation marks are *mentioned* as well as *used*. In the syntactical usage, on the other hand, quotations marks are *used* but not *mentioned*, the quotation marks together with the object inside them being used as the name of, for example, an individual constant of language L. In this usage, the quotation marks serve as syntactical devices indicating that the item named is a linguistic entity, that it belongs to the linguistic domain. It follows that where syntactical quotes alone are being used, the linguistic entity cannot—as in the case of pragmatic quotation—be identified, *merely on the basis of the fact of*

¹⁸⁸ Sellars, "Quotation Marks, Sentences, and Propositions," pp. 516-517.

quotation, with the class of shapes exemplified by the ink marks between the quotes. Any reference to this class must be separately specified.¹⁸⁹

Sellars moves on from these passages to develop the more radical hypothesis that "*syntactical* quotes are the names of *linguistic* functions." His ultimate goal is to draw metaphysical conclusions about the nature of sentences and propositions. For our purposes, it is sufficient to note that in 1950 Sellars had distinguished pragmatic quotation from syntactic quotation, which is tantamount to distinguishing the naming theory of quotation from the demonstrative theory.¹⁹⁰ It is also worth noting that Sellars thinks that the expression involved in a pragmatic quotation is *both* used *and* mentioned.

Another article published in the fifties that deserves acknowledgement is Leonard Linksy's 1950 article "On Using Inverted Commas."¹⁹¹ In the opening paragraph, Linksy explains that:

The purposes of this note are to point out some apparent confusions in the use of inverted commas in referring to linguistic expressions, and to suggest a convention restricting the use of this device. Adherence to the proposed convention would result in considerably greater clarity of expression although the restriction which it imposes is, we believe, not an onerous one.¹⁹²

Linksy hopes to reinterpret Frege's convention so as to eliminate some of the inadequacies that are a result of the standard interpretation. First, he

¹⁸⁹ *Ibid.*, pp. 518-519.

¹⁹⁰ The idea that an expression flanked by quotation marks refers in some way to the shape of the flanked expression is one that is commonly associated with Davidson and his demonstrative theory of quotation (1979). Without doubt, Davidson's work was very influential in the history of the philosophical problem of quotation. On the other hand, the idea was clearly entertained by Sellars almost thirty years earlier, and can even be found in the early works of Tarski (although he rejected it).

¹⁹¹ Patrick Suppes *Introduction to Logic*, published in 1957, contains a clear and helpful discussion of both quotation marks and the use mention-distinction. This work, however, contains relatively little that is new from the historical perspective.

¹⁹² Linksy, "On Using Inverted Commas," p. 232.

acknowledges the distinction between Reichenbach's token quotes and ordinary quotation marks. He then proposes his new convention:

The proposed convention is then:

(A) *An expression obtained by enclosing a sign event in inverted commas is a word event which refers ambiguously to the membership of the sign design to which the sign-event belongs.*

We shall later need a third device for constructing names of sign-designs. For this purpose dots will be used to enclose an event of the design which we desire to name. We shall, for example, use sign events similar to $\backslash \bullet \text{of} \bullet /$ as names for the sign-design of which any 'of' is a member.¹⁹³

Linsky is using Carnap's terminology here.¹⁹⁴ We can think of a sign event as a sign token, a sign design as a class of similar sign tokens, and a word event as a sign token that can function in a sentence in the capacity of a word.¹⁹⁵ Thus, what Linsky is proposing is that expressions within inverted commas are ambiguous names, or more specifically, that they are variables which range over the set of all expressions that are geometrically similar to the expression within the inverted commas. They refer, not to a *class* of sign tokens, but to *some or all members of a class of sign tokens*. Dotted expressions, on the other hand, are proper names of classes.¹⁹⁶ Thus, in summary, we get the following:

- (i) $\backslash a /$
- (ii) $\bullet a \bullet$
- (iii) ' a '

The expression on line (i) is the name of the token between the arrows on line (i); the expression on line (ii) is the name of a class of tokens geometrically similar to

¹⁹³ *Ibid.*, p. 233.

¹⁹⁴ See Carnap's *Introduction to Semantics and Formalization of Logic*.

¹⁹⁵ All word tokens are sign tokens, but some sign tokens are not word tokens. A token of the sign of addition, for example, is a sign token but not a word token.

¹⁹⁶ This use of dots appears to be different from the use that Sellars makes of them in 1963.

the token between the dots; and the expression on line (iii) is a variable (an ambiguous name) ranging indiscriminately over the members of the class named by the expression on (ii). Another way of looking at it is as follows: the things named by the expressions on lines (i) and (iii) are members of the thing named by the expression on line (ii).

In 1951, Church replied to Linsky's article, writing:

For the use of inverted commas (i.e. quotation marks) he urges the convention: (A) *An expression obtained by enclosing a sign-event in inverted commas is a variable event whose range is the sign-design to which the sign event belongs.*

For use in even a semi-formalized meta-language, the proposed convention may be found to lead to difficulties either because of the large variety of ranges of variables which it demands or because the anomalous feature that, for a given range, only one variable (-design) is provided. But in the reviewer's opinion a more serious objection is that it conflicts with the better-established convention: (B) *An expression-design formed of a sign design enclosed in inverted commas is a proper name of that sign-design.* There is also an advantage of simplicity which (B) has over (A), in dealing entirely with sign-designs in abstraction from sign-events.¹⁹⁷

The most surprising thing about this passage is that Church's most serious objection to Linsky's proposal is based on the fact that convention (B) is better established than (A). Instead of evaluating the merits of Linsky's proposal, it suffices for our purpose here to merely take note that, like Reichenbach, Sellars, and Quine, he attempted to deal with the shortcomings of Frege's convention by developing a more elaborate set of conventions for mentioning signs.

In the mid-to-late fifties there were other articles that addressed issues of quotation. For example, in 1955 L.J. Cohen and A.C.Lloyd published their article "Assertion Statements," in which they suggested the convention of using double

¹⁹⁷ Church, Review of "On Using Inverted Commas," pp. 208-209.

quotation marks for direct quotation and single quotation marks for indirect quotation.¹⁹⁸ And in 1957, Elizabeth Anscombe's Analysis Puzzle #10 stimulated further interest in quotation and set off a series of articles about quotation marks and the name relation.

§7 THE ERA OF CRITIQUE AND TRANSITION (PHASE TWO)

The period ranging from 1960 through the mid 1970's witnessed further innovations for mentioning signs and a barrage of criticisms of the use-mention distinction. In some cases, innovation was combined with critique; in others there was mere innovation or mere critique.

Wilfrid Sellars' 1963 article "Abstract Entities" is a case involving only innovation. Expanding on Frege's convention, Sellars employed two new conventions for mentioning linguistic entities. In 1950, Sellars had employed asterisks to distinguish what he called *pragmatic quotation* from *syntactic quotation*.¹⁹⁹ In 1963, he went back to the drawing board and employed three different kinds of quotation expressions: *dot quotes*, *asterisk quotes* and regular double inverted commas. Sellars explains his use of these different kinds of expressions in a footnote:

I shall use dot quotes to form the names of the expressions—in the sense to be explicated—which is [sic?] realized in English by the sign design illustrated between them. I shall use asterisk quotes to form the name of the sign design illustrated between them, thus *red* is the name of the design which in English is the written word "red." These conventions will be clarified and made more precise in the course of the argument.²⁰⁰

¹⁹⁸ According to Parks 1991 pp. 59-60 a similar convention was entertained as far back as the 18th century.

¹⁹⁹ "Quotation marks, sentences and propositions" see previous section for a discussion.

²⁰⁰ Sellars, "Abstract Entities," p. 229.

This passage does not give an entirely clear explanation of how these expressions are used (as Sellars admits); it requires further explanation. The first thing that needs to be recognized is that Sellars is not using asterisks as he did in 1950. In his 1963 work, asterisk expressions are used as names of *written* words, as opposed to *spoken* words.²⁰¹ And words within double inverted commas become names of words *generally considered*, which means that they neither name the written word nor the spoken word specifically—they name a word considered without regard to its medium of expression. Sellars's use of dot quotes takes the level of generality up a notch: these name linguistic expressions considered without regard to any specific language.²⁰² The things named by dot expressions are similar to concepts; they are not grounded in any specific language. They differ from concepts, however, since Sellars insists that the things designated by dot expressions are linguistic expressions. An additional passage from Sellars' article may help clarify these ideas.

Redness, as a first approximation, is the word •red• construed as a linguistic kind or sort which is capable of realization or embodiment in different linguistic materials, e.g., *red*, *rot*, and *rouge*, to become the English word “red,” the German word “rot,” and the French word “rouge.” Expressions in this rarified sense I have called—borrowing Peirce's term but putting it to a different, if related, use—linguistic *types*. Thus •red• is a type which is shared by the English word “red,” the German word “rot,” and the French word “rouge.”²⁰³

²⁰¹ In 1950, asterisk expressions were used for *pragmatic quotation*. These expressions were not names, but involved a demonstrative phrase combined with a displayed object.

²⁰² If this seems confusing or hard to understand, it should be noted that the main point of Sellars' article is to present the theory that universals and abstract objects are really linguistic expressions. This is a form of nominalism; and the peculiarity involved with the designata of the dot expressions is a direct result of the peculiarity of this metaphysical theory.

²⁰³ *Ibid.*, pp. 229-230.

In this passage we find Sellars using all three types of expressions. It should be noted that this particular use of dot expressions was not only unprecedented, but also never imitated.²⁰⁴ A large part of its uniqueness, of course, results from the strange linguistic entities that dot quotations are supposed to designate.

The use of asterisks specifically to mention written expressions (to the exclusion of spoken expressions) is also an innovation worthy of note. A written word clearly has different properties from its spoken equivalent; and a set of distinct conventions for mentioning these two distinct kinds of words is desirable.²⁰⁵

In 1965, Newton Garver published his article "Varieties of Use and Mention." This article presents a critique of the use-mention distinction, rejects the name theory of quotation, and suggests innovations with regard to Frege's convention. It is therefore, in many respects, an important work in the history of quotation.

Garver begins his critique of the use-mention distinction by suggesting that (as originally conceived by Quine) the distinction assumes that expressions within quotation marks are only mentioned and not used.²⁰⁶ He writes:

[the use-mention] distinction suggests that there are instances of "pure mention," where the ordinary use of the symbol mentioned is wholly irrelevant. This suggestion, which we might call the Postulate of Pure Mention, attractive because of the sharpness and simplicity it gives to the original distinction, challenges us to find instances of "pure" mention.

²⁰⁴ Linky's use of dot expressions appear similar, but they have different designata. For Linky, such expressions designate a class of objects having a certain shape.

²⁰⁵ In Part IV of this chapter a system of conventions for mentioning signs is developed which accommodates this distinction.

²⁰⁶ In 1999, the Ori Simchen labels this formulation of the use-mention distinction *the malignant version*, and distinguishes it from the what he calls the *benign version*. The benign version acknowledges that the use-mention distinction is not exclusive. Moreover Simchen provides evidence that Quine advocated the benign version. See (Simchen 1999, p. 325-326).

The most plausible place to look is among the paradigms for the distinction between use and mention. Hence it seems reasonable to suppose that in the sentence "‘Cat’ is a noun" the word ‘cat’ is *just* mentioned. If so, then it must be arbitrary, and dictated by convenience rather than necessity, that the word ‘cat’ appears as a part of the symbol
 (1) ‘cat’.

If a person is mentioned, for example, it is obvious that he need not be a part of the device used to mention him (though he may be, in conjunction with a gesture); nor need he even be a living human being. Similarly in the case of words, it cannot be necessary for the word itself to be part of the symbol used to mention it, if the instance is one of pure mention. Thus the inscription

(2) cat

cannot really be the word ‘cat’ when it occurs as a part of the symbol (1), if (1) is an instance of pure mention; it must rather be an arbitrary index, and the fact that it has the same shape as inscriptions of the *word* ‘cat’ cannot be essential to the way in which (2) serves as an index to show which word is mentioned when we use (1). The point is often put by saying that (1) is a “(proper) name” of the word ‘cat’.²⁰⁷

Garver proceeds to develop an argument against the Postulate of Pure Mention., which I reformulate as follows (taking the first three premises from the previous passage and the fourth premise from a passage below):

- P1) The current understanding of the use-mention distinction is adequate
 only if the Postulate of Pure Mention is correct.
- P2) If the Postulate of Pure Mention is correct, then symbols between quotation marks are just mentioned and not used.
- P3) The symbols between quotation marks are just mentioned and not used only if their occurrence is arbitrary and quotation expressions are proper names
- P4) Quotation expressions are not proper names.
- C) The current understanding of the use-mention distinction is inadequate.

This argument is clearly valid; and the first three premises are derived from the previously quoted passage. The fourth premise, which claims that quotation expressions are not proper names, is established through the reasoning in the

²⁰⁷ Garver, "Varieties of Use and Mention." pp.230-231.

following passage (the numbers in this quotation below refer back to the display lines in the previous quotation).

I cannot recognize (1) as denoting the word 'cat' unless I recognize (2) to be a word, and more particularly, to be that very word which is being mentioned; and then the ordinary use of (2) is not wholly irrelevant, for to recognize something as a word is to recognize that it has a regular use in a language. Therefore (1) must be some rather interesting *function* of (2) rather than a *name* of (2), if as accords with usage, we mean by "name" a symbol that can be recognized and understood without understanding or recognizing its parts. So (1) is not an instance of pure mention²⁰⁸

Garver's reasoning in this passage is a bit puzzling; but it can be reformulated as follows.

- P5) Quotation mark expressions are proper names only if there is no function that takes one from the quotation expression to its designatum.
- P6) If there is no function that takes one from the quotation expression to its designatum, then we cannot always recognize the designatum of a quotation expression.
- P7) We can always recognize the designatum of a quotation expression.
- C) Quotation mark expressions are not proper names. (this is the fourth premise of the previous argument)²⁰⁹

It should be apparent that Garver's first attack on the use-mention distinction is closely tied to his rejection of the *proper name theory of quotation*.²¹⁰ His second attack on the distinction is related to what he calls the *Postulate of*

Comprehensiveness. He explains this postulate as follows:

A second source of trouble is that the use-mention distinction, once stated, comes to be regarded as exhaustive as well as exclusive. This view which I shall call the Postulate of Comprehensiveness, receives its

²⁰⁸ *Ibid.*, p. 231.

²⁰⁹ Although the argument as reconstructed is obviously valid, it is not obvious that all the premises are true. In particular, (P5) is suspicious because it rests upon a criterion for proper names which is epistemological instead of grammatical.

²¹⁰ Even though Garver was one of the first philosophers to attack the proper name theory of quotation, he did not refer to the theory with that description. The term 'the proper name theory of quotation' was established by Davidson in his 1979 article "Quotation."

most serious challenge from a typical simple explanation of what a word means, such as might be conveyed by the meaning-statement

(3) The meaning of 'courage' is – steadfastness in the face of danger.

For the phrase 'steadfastness in the face of danger' cannot be straightforwardly regarded as either used or mentioned in (3), and in certain respects it must be regarded as both.²¹¹

Garver's thesis in this part of his critique is not original. It had long been recognized, even by some of the greatest proponents of the use-mention distinction, that there are occurrences where terms are both used and mentioned.²¹² Because the conclusion is not controversial, Garver's argument against the Postulate of Comprehensiveness will not be rehearsed.

Nevertheless, a convention that he develops in the course of this argument is worthy of mention. Garver explains his innovation in the following passage.

Existing notations are too poor to allow us to represent [statements about meanings] perspicuously. ... The trouble with single quotes is that they enable us to refer to words, whereas we wish to refer to meanings of words. Let us therefore invent a notation, using double slanted lines, which will enable us to refer to meanings:

Whenever X is a linguistic expression of a sort that can be said to have a meaning, the statement expressed by the formula 'The meaning of X is //X//' is trivially true.

Whenever X and Y are linguistic expressions of a sort that can be said to have a meaning, the statement expressed by the formula 'The meaning of X is //Y//' is true if X and Y have the same meaning.²¹³

In this passage we find Garver developing a convention for mentioning the meaning (the sense) of an expression. In disciplines where one often writes about signs and their meanings, such a convention is without doubt useful. As for the origin of this convention, Garver attributes it to Max Black. He writes:

²¹¹ *Ibid.*, p. 232.

²¹² See (Quine 1943 or 1953), (Geach 1950), and (Church 1956 p. 61) for a few examples.

²¹³ Garver, "Varieties of Use and Mention" p. 236.

The notation of using double slanted lines is adapted from one discussed in a seminar of Max Black's in 1956-57 at Cornell University and recorded in the mimeographed reports of that seminar.²¹⁴

It appears, however, that a similar conventions were employed even before 1956.

In a review of Garver's article, David Kaplan points out several existing conventions that are similar to the double slash convention.

The utility of this new symbolism is further demonstrated by tackling a portion of Russell's argument against Frege [...]. Like Church, the author finds no deeper confusion beneath the confusions of mention and use. Fans of Russell's argument will consider this discussion a useful first step in the right direction.

Other writers who have discussed Russell's argument have each introduced their own notational devices for the meaning of a phrase. Thus, using the notation of Garver, Butler, Searle, and the reviewer respectively, we have //‘punctual’// = *punctual* = §punctual§ = ^mpunctual^m. It would be well to standardize what is clearly a useful notation. But perhaps this awaits standardization of the notion. It should be noted that Garver's double slanted lines stand for a true function from expressions to meanings, whereas an expression enclosed by asterisks, squiggles, or m's exhibits that peculiar use common to the components of quotation names.²¹⁵

Since the article in which Ronald Butler employs his asterisk convention was published in 1954, something similar to Garver's convention was already in print for over ten years before Garver's publication.²¹⁶

The multiplicity of similar conventions identified by Kaplan is a phenomenon worthy of note. As Kaplan explains, none of these earlier conventions were ever established as the standard in the literature (we now know that Garver's convention failed in this regard as well); and this seems to reflect the

²¹⁴ *Ibid.*, p. 238 n.)

²¹⁵ Kaplan, Review of "Varieties of Use and Mention," p. 145.

²¹⁶ Butler's article is "The Scaffolding of Russell's Theory of Descriptions," in *The Philosophical Review*, Vol. 63, No. 3, pp. 350-364 (1954). Butler credits the idea of using asterisk expressions to mention meanings to Church.

general trend concerning new conventions—the same convention (with or without minor differences) is often rediscovered time and time again.²¹⁷

Another article from the same period that critically examines the use-mention distinction is Niels Christensen's "The Alleged Distinction between Use and Mention" (1967). Unlike Garver, who attempted to clarify misunderstandings about the use-mention distinction, Christensen takes a stronger stance and claims that philosophers should "give up the use-mention distinction."²¹⁸ The main thesis of Christensen's article is stated in the following passage:

What I want to argue is that it is not necessary, in general, to mention a linguistic expression in order to say something about it. On the contrary, in most cases where we manage to talk about linguistic expressions we do so by actually producing them—that is, using them in an anomalous way. Consequently, the alleged distinction between use and mention, when applied to particular cases, is more often a distinction between different kinds of use.²¹⁹

In this passage we find Christensen explicitly rejecting the claim made by Quine and Tarski that mere objects cannot function as part of a sentence.²²⁰ In a later passage he argues for the plausibility of using *heterogeneous sentences* to talk about linguistic expressions.²²¹ He writes:

The logician is apt to think that if we want to say something about an object we must use a name or description of that object, but this is apparently a prejudice for which we can find no support. It does not seem to hold true without qualification regarding objects in general, and it is certainly untrue with respect to linguistic expressions. Whenever we want to speak of objects that are not present, we are forced to use names or descriptions, but when the object is present we can call attention to it

²¹⁷ Two exceptions to this trend are Frege's convention itself, and Quine's quasi-quotation.

²¹⁸ See Christensen 1967 p. 367.

²¹⁹ Christensen, "The Alleged Distinction between Use and Mention." p. 358.

²²⁰ In essence, Christensen is rejecting the sentential homogeneity thesis which states that every object used in a sentence must (a) have semantic properties, and (b) employ some of those properties. For a discussion of the sentential homogeneity thesis, along with the *de re* and *de signo* uses of signs, see Chapter I, Part III, §2.

²²¹ For a further discussion of heterogeneous constructs, see Chapter I, Part III, §2.

by other means—for example, by pointing at it. Standing in front of a Studebaker, there is no need of saying, "This car is a Studebaker." We can simply point at it and say, "A Studebaker!" without use of any name or description.²²²

Christensen's view about mentioning objects by producing them leads him in turn to reject the proper name theory of quotation in favor of the demonstrative theory.

He writes:

we cannot regard [quotation marks] as name-forming devices; they function rather like the pointing finger by calling our attention to the very object about which we want to say something, and for this reason have produced.²²³

In addition to arguing against the proper name theory of quotation, Christensen recognizes three types of uses for linguistic expressions. Beyond the two types recognized by the medieval logicians, Christensen recognizes what he calls *suppositio semantica*. He explains this new type of use in the following passage.

When [...] we want to say that two words have the same meaning, we could phrase this information in this way:

(5) 'Oculist' means the same as 'eye doctor.'

Leaving aside the question in what capacity 'oculist' occurs, it is obvious that 'eye doctor' does not occur as a mere sound-and-letter complex the properties of which we say something about as we did about 'Boston' in (3). On the contrary, it occurs as a sound-and-letter complex *with* a definite meaning, though it is not used to refer to or say something about an eye doctor. Accordingly, 'eye doctor' occurs neither *materialiter* nor *formaliter*, but is an excellent example of an occurrence in *suppositio semantica*. In general it seems that any linguistic expression may be used or occur in at least three capacities, as a mere sound-and-letter complex in *suppositio materialis*, as an expression with meaning, but not referring, in *semantica*, and as a referring expression in *formalis*.²²⁴

²²² Christensen, p. 360.

²²³ *Ibid.*, p. 361.

²²⁴ *Ibid.*, p. 364. The reference made to (3) in this quotation is not crucial to understanding the passage. Nevertheless, for the reader's convenience, (3) reads as follows:

(3) 'Boston' is disyllabic.

This example occurs on p. 23 of Quine's *Mathematical Logic*, as well as in Christensen's article.

Instead of scrutinizing the details of Christensen's position and arguments, it will be sufficient here to note that, like Garver, he was one of several philosophers who in the 1960s criticized the use-mention distinction and rejected the account of Frege's convention put forward by Quine and Tarski.

In 1969, many of the arguments and criticisms presented by Garver and Christensen were echoed by John Searle, in the fourth chapter of his book *Speech Acts*. Like Garver and Christensen, Searle claims that the use-mention distinction (as traditionally conceived) is confused, and rejects the proper name theory of quotation. He writes:

Thus consider the difference between:

1. Socrates was a philosopher; and
2. "Socrates" has eight letters.

...

A very confused account of the distinction between the use and the mention of expressions is so commonly held that it is worth trying briefly to clarify the matter. It is generally claimed by philosophers and logicians that in a case like 2 the word "Socrates" does not occur at all, rather a completely new word occurs, the proper name of the word. Proper names of words or other expressions, they claim, are formed by putting quotation marks around the expression, or rather, around what would be the expression if it were a use of the expression and not just a part of a new proper name. ...

I find this account absurd. And I believe it is not harmlessly so but rests on a profound miscomprehension of how proper names, quotation marks, and other elements of language really work.²²⁵

Although much of what Searle writes in this passage was already said by others, there is one feature of this passage that anticipates, and is characteristic of, works written during the subsequent era (i.e., the linguistic era of quotation). The last sentence of this passage suggests that there is a way that quotation marks "really work." This assumption is made explicit by Searle (it is perhaps implicit in the

²²⁵ Searle, *Speech Acts*, p. 74.

works of authors like Garver and Christensen); and it is also explicitly maintained by most of those who worked/are working on program 21 during the linguistic era of quotation. This assumption is historically important, because it is closely tied with a crucial change in the conception of the philosophical problem of quotation. With this assumption, the philosophical problem of quotation begins to turn into the problem of how quotation marks are used in ordinary language. Indeed, further passages from Searle reveal that he anticipates that solutions to the philosophical problems of quotation would come from an understanding of how quotation marks work in ordinary language:

“Well” it might be said, “why can’t we just adopt it as a convention that quotation marks around a word make a new word out of it, the proper name of the original?” One might as well say, why not adopt it as a convention that in the sentence “Snow is white” “is” is the name of my grandmother. The fact is, we already have conventions governing the use of quotation marks. Anyone wishing to introduce a new convention owes us first an account of how it squares with such existing conventions, and secondly, what motivates the introduction of the new convention. But first, since we already have perfectly adequate use-mention conventions, it is not clear how the proposed new convention is going to relate to them without inconsistency.²²⁶

The first thing to notice is Searle's response to the logician who asks why we cannot simply adopt it as a convention that quotation marks around an expression make a proper name. His response seems to be that quotation marks are already governed by conventions. But we know, after examining the history of punctuation, that "no other mark of punctuation ... has as much variety in usage as the quotation mark."²²⁷ Moreover, even if the conventions governing the use of quotation marks in ordinary language were firmly and clearly established, that

²²⁶ *Ibid.*, p. 76 (This passage from Searle should be compared to passages from Locke and Mill in Part II, §3 of the current Chapter.)

²²⁷ McMurtrie 1934 p. 3

would not be a serious objection to the basic idea behind the logicians' use of quotation marks. The most serious objection that could be made would be that they chose the wrong set of marks for their task, since quotation marks already had a different use in ordinary language. In other words, Searle's response to the logicians' is inadequate.²²⁸

In 1974, Susan Haack published her article "Mentioning Expressions." In this article Haack provides a critique of the use/mention distinction, sets out what she calls the logical block theory of quotation, provides arguments against the logical block theory, and champions the view that quotation expressions involve a function.²²⁹ In addition to these things, Haack provides a comprehensive survey of the different devices for mentioning expressions.

Haack identifies four devices for mentioning expressions: definite descriptions; proper names; italics; and quotation marks. Starting with definite descriptions, she notes they admit of further subdivision:

Some definite descriptions denote in virtue of contingent features of the expressions to which they refer, features such as, for instance, the location of those expressions... Other definite descriptions work rather differently, by exploiting the structure of the expressions to which they refer. ... I shall refer to these, following Tarski, as *structural descriptions*. Given a structural description, it is a straightforward matter to discover what expression it denotes. This virtue of structural descriptions I shall refer to as the *recoverability of their denotata*.²³⁰

²²⁸ Christensen considers a similar a similar kind of response from the logician, but unlike Searle, he recognizes the consistency of logician's position. He wisely writes: "the ideal counterargument would be to show that the logician's position is inconsistent, but unfortunately I cannot see how contradictions, can be derived from it." (Christensen 1967 p. 361)

²²⁹ 'The logical block theory of quotation' is the name that Haack gives to the theory of quotation developed by Tarski and Quine. As set out, the logical block theory is more or less the same as the proper name theory. And Haack's arguments against the logical block theory are very similar to the arguments presented in Garver (1965) and Christensen (1976) against the proper name theory.

²³⁰ Haack, "Mentioning Expressions," pp. 277-278. An example of a structural description offered by Haack is "The sentence consisting of the words consisting of the 12th, 9th, 15th,

Haack points out that, given a structural description of an expression, we can usually figure out which expression it mentions. This is not the case, however, when proper names are employed. She writes:

...an important feature of the ordinary uses of proper names is that there is no systematic way of discovering whom a proper name denotes. Thus, proper names, if used as a device for mentioning expressions, would lack the virtue of recoverability.²³¹

And considering italicization and quotation in turn, she notes that both of these devices seem to have the virtue of recoverability.

Italicisation, like structural description but unlike proper names, has the virtue of recoverability. The denotation of an italicised expression is the unitalicised expression. ... And quotation seems, on the face of it, also to have the virtue of recoverability: the denotation of a quotation expression is the quoted expression.²³²

Beyond recoverability, Haack also considers the devices for mentioning expressions with regard to the characteristic of iterability. She points out that unlike the other devices, italicization is not iterable.

Italicisation has, however, the disadvantage that it is not *iterable*. If one wishes to refer to an italicised expression, one will have to employ some other device than italicisation – structural description, perhaps, or quotation. Since one might very well need a means of referring to expressions which themselves refer to expressions, for example in the kind of investigation in which I am now engaged, this seems a serious drawback.²³³

Thus, the results of Haack's survey can be summed up in the following chart:

14th, 10th, 1st, 18th, 5th 6th, 9th, 5th, 18th, 3rd, 5th, letters of the English alphabet, in that order." This description denotes the sentence 'Lions are fierce'. (Haack 1976 p. 278)

²³¹ *Ibid.*, p. 279.

²³² *Ibid.*, p. 280. In this passage, Haack employs the terms 'quotation expression' and 'quoted expression'. This terminology was explained in a preceding passage as follows "By putting quotation marks around an expression one forms another expression which denotes the original expression. In what follows, I shall call the denoted expression 'the quoted expression', and the denoting expression the 'quotation expression'." (Haack 1976 p. 280)

²³³ *Ibid.*, p. 280.

Devices for Mentioning Signs and Their Characteristics

	Ordinary Description	Structural Description	Proper Name	Italicization	Quotation
Recoverability of Denotatum	No?	Yes	No	Yes	Yes
Iterable	Yes	Yes	Yes	No	Yes

The type of investigation that Haack provides is, without doubt, useful for anyone who plans to develop a unified system for mentioning expressions. Her distinctions and terminology will be used in the next part of this chapter, where such a system is set out.

The final work to be considered in the era of critique and transition is Umberto Eco's 1976 work, *A Theory of Semiotics*. This work (unlike any of the other works mentioned in this history) is intended to be a discourse on signs; and it is written in the spirit which sees the study of signs as an autonomous discipline. There is no discussion of the use-mention distinction in the work; but in a brief note before the introductory chapter Eco sets out and explains several graphic conventions that he employs for the purpose of mentioning signs and their properties. The note in its entirety reads:

Single slashes indicated something intended as an expression or a sign-vehicle, while guillemets indicate something intended as content. Therefore /xxxx/ means, expresses, or refers to «xxxx». When there is no question of phonology, verbal expressions will be written in their alphabetic form. However, since this book is concerned not only with verbal signs but also with objects, images or behavior intended as signs, these phenomena must be expressed through verbal expressions: in order to distinguish, for instance, the object automobile from the word automobile, the former is written between double slashes and in italic. Therefore //automobile// is the object corresponding to the verbal expression /automobile/, and both refer to the content unit «automobile».

Single quotation marks serve to emphasize a certain word; double marks are used for quotations. Italic denotes terms used in a technical sense.²³⁴

One of the merits of Eco's system is that it assigns unique functions to a number of devices that ordinarily have multiple overlapping functions. For example, italicization is ordinarily used in many ways, including quoting, the introduction of technical terms, and emphasis. Eco reserves the use of this device for "denoting that terms are used in a technical sense."²³⁵ Similarly, double inverted commas are often used for mentioning expressions, for direct quotation, and to enclose words used in a special way, but Eco reserves this device exclusively for quotation. In principle, the idea of assigning a unique function to each device is commendable. In his actual employment of these devices, however, Eco does not always conform to what he says in his note.

When it comes to mentioning signs, Eco does not follow Frege's convention of using single quotation marks. He reserves single quotation marks for indicating emphasis, and chooses to flank an expression with single forward slashes when he wants to mention it. Like Frege, however, he fails to introduce unique devices for mentioning sign types as opposed to tokens, or written signs as opposed to spoken ones.

Eco's system begins to appear even more problematic when we consider his use of guillemets and double forward slashes. Guillemets are used to refer to the content of a sign. But his idea of content is quite general, encompassing both the sense of

²³⁴ Eco, *A Theory of Semiotic*, p. xi.

²³⁵ Here his choice of words is questionable. 'indicates' seems more appropriate than 'denotes'. And although Eco claims that he uses italics when a term is being used in a technical sense, there are many instances in the work where italicization is used in other ways. He often uses it for emphasis (p. 65 for example), or for indicating the title of a book (p. 75 for example). And, as is obvious from the passage reproduced above, it is also used between double forward slashed expressions.

a sign and its referent. Thus, although the operation of guillemets appears to be unique, the duality involved in the idea of content makes it questionable whether it really is. The problems with Eco's system can be glimpsed by trying to figure out what the sentence:

/«automobile»/ means, expresses, or refers to ««automobile»»

says. That the sentence must be true on Eco's account is obvious from that fact that it is a mere substitution instance of Eco's general rule.²³⁶ Revealing the lack of clarity concerning what this sentence says, however, is merely another way of saying that we have no idea what guillemets are really doing in this system.

As for Eco's use of double slashes, there are several problems that need to be noted. First, it is clear that these expressions refer to something; but what?

Again, he writes:

... in order to distinguish, for instance, the object automobile from the word automobile, the former is written between double slashes and in italic. Therefore *//automobile//* is the object corresponding to the verbal expression /automobile/, and both refer to the content unit «automobile». (Eco 1976 p.xi)

This is, without doubt, a confusing passage. It would appear that double slashed expressions refer to non-linguistic objects that are signs. And these non-linguistic objects that are signs have a referent. The peculiar thing, however, is what Eco says about their referents; for on one interpretation, it would appear that they refer to themselves. Consider the object on the following object display line.

ODL (2.3.1) *//automobile//*

²³⁶ By the substitution of the expression '«automobile»' for 'xxxx' in Eco's general rule.

The object on ODL (2.3.1) supposedly refers to a non-linguistic object having a motor, wheels, seats, windows etc., whereas the object on the following display line refers to a linguistic object.

ODL (2.3.2) /automobile/

Regardless as to whether the thing referred to by the object on ODL(2.3.2) is written, spoken, a token or a type, it is linguistic, nonetheless. And it would appear that this linguistic object refers to a non-linguistic object having a motor, wheels, seats, windows etc.. Thus, since (i) the non-linguistic object having a motor, wheels, seats, windows etc., refers to same thing as the linguistic object, and (ii) the linguistic object refers to a non-linguistic object having a motor, wheels, seats, windows etc., the non-linguistic object must refer to itself. And this cannot be what Eco had in mind.

One way of reinterpreting this passage so that the convention makes sense is to take Eco as talking about connotation instead of reference. In this way, we may say that the object composed of a motor, wheels, etc., connotes the same thing as the linguistic object 'automobile'. In other words, both the word and the thing call forth the same ideas. The problem with this interpretation is that Eco explicitly states that they "refer" to the same thing.

There are further problems with Eco's convention. Consider the object on the following display line.

ODL (2.3.3) *cat*

If we wanted to mention this object in Eco's system, we would use an expression resembling the expression on the next object display line.

ODL (2.3.4) */cat/*

But, what if we wanted to mention the object on ODL (2.3.4)? In that case we would be forced to use an object resembling the object on ODL (2.3.5).

ODL (2.3.5) *//cat//*

Unfortunately, the object on ODL (2.3.5) already has a *different* assignment in Eco's system (although it is not exactly clear what that assignment is). Thus, Eco's system has the flaw that it is not possible to mention the name of an italic expression without using signs ambiguously. Eco should be credited for his attempt to work out a system for mentioning signs; but his system is inadequate in many ways.²³⁷

§8 CHANGING THE SUBJECT

In the second half of the twentieth century, philosophical discussion of quotation, which had begun in the first half of the century among formal logicians who were concerned about mentioning signs, slowly lost touch with its logical roots. By the end of the era of critique and transition, we find ordinary language philosophers like Searle criticizing the logicians' convention because it fails to accord with the conventions that govern the use of quotation marks in ordinary language. As time passed, the trend toward viewing the problem as one concerned with ordinary language continued; and in 1979, with the publication of

²³⁷ In his 1986 edition of his book *Semiotics and the Philosophy of Language*, Eco no longer employs the double slash convention. As for the slash and the guillemettes, he writes, "In the course of this book, I use (as I did in *A Theory of Semiotics*) single slashes to indicate expressions' guillemets indicate the corresponding content. Thus */x/* means, or is an expression for, «x». However, when it is not strictly necessary to stress such a distinction (that is, when words or sentences are used as expressions whose corresponding content is taken to be understood), I simply use italics." (Eco 1986 p. ix)

Donald Davidson's article "Quotation," the philosophical problem of quotation was finally reframed so that it no longer accurately reflected the logicians' original concerns. In Davidson's hands, the philosophical problem of quotation becomes the problem of a formulating a descriptive theory that explains how quotation (taken in the widest, most general, sense) works in ordinary language.

The influence of Davidson's article is not to be underestimated. As Marga Reimer put it:

The publication of Donald Davidson's 1979 paper 'Quotation' revolutionized the way philosophers of language thought about quotation. Indeed, since the publication of that paper, much of the philosophical literature on quotation has been concerned largely with Davidson's views on the matter.²³⁸

What Reimer wrote in 1996 is still true today. The philosophical problem of quotation as currently conceived and debated is the problem framed by Davidson.

Davidson begins his famous article on quotation by considering the logicians' accounts of quotation.

Tarski, in 'The Concept of Truth in Formalized Languages' examines the possibilities for an articulate theory of quotation marks, and decides that one is led at once to absurdities, ambiguities, and contradictions. Quine writes in *Mathematical Logic*, 'Scrupulous use of quotation marks is the main practical measure against confusing objects with their names ...' ... And Church, while praising Frege for his careful use of quotation to avoid equivocation, himself eschews quotation as 'misleading', 'awkward in practice ... and open to some unfortunate abuses and misunderstandings'. There is more than a hint, then, that there is something obscure or confused about quotation. But this can't be right. There is nothing wrong with the device itself. It is our theories about how it works that are inadequate or confused.²³⁹

²³⁸ Reimer, "Quotation Marks: demonstratives or demonstrations?" p. 131

²³⁹ Davidson, "Quotation," p. 80.

In this passage we find Davidson laying down two assumptions that are fundamental to program 21.²⁴⁰ One assumption is that there is a certain way that quotation works; another is that it is the philosopher's task to formulate a descriptive theory that explains how quotation works.²⁴¹ With these assumptions in place, Davidson moves ahead, attempting to show that the logicians' account of quotation is inadequate for the task.

Davidson begins his attack on the logicians' account by focusing on what he considers to be their commitment to the exclusivity of the use-mention distinction. He continues:

It is often said that in quotation, the quoted expressions are mentioned and not used. The first part of this claim is relatively clear. It is the second part, which says quoted expressions aren't used, that seems suspect. Why isn't incorporation into quotation one use of an expression?²⁴²

Davidson fails to provide a direct quotation from any of the logicians in which the exclusivity of the use-mention distinction is stated explicitly. Davidson tells us that "it is often said," but he does not tell us by whom it has often been said, nor does he provide any reference to where it has been said.²⁴³ Nevertheless, attributing the exclusivity thesis to the logicians, Davidson proceeds to offer counter-examples from ordinary language in which the exclusivity thesis is clearly violated.

²⁴⁰ A discussion of program 21 can be found in Chapter II, Part II, §5 .

²⁴¹ It is important to note that the term 'quotation' as used here involves all the ambiguities noted in Chapter II, Part II, §2 . Also, although Davidson does not explicitly say he is seeking a descriptive theory, the idea that there is a way that quotation works, and that our current theories fail to explain how it works, suggests a descriptive approach.

²⁴² Davidson, "Quotation," p. 80.

²⁴³ Quine and Church seem to explicitly deny the thesis. (See Quine 1953 and Church 1950)

Davidson's next move attempts to tie the logicians to the exclusivity thesis through their commitment to the proper name theory of quotation. He writes:

... there is a way, now standard, of giving support to the idea that in quotation the quoted material is not used. This is the interpretation of quotation proposed by Tarski as the only one he can defend. According to it a quotation, consisting of an expression flanked by quotation marks, is like a single word and is to be regarded as logically simple. The letters and spaces in the quoted material are viewed as accidents in the spelling of a longer word and hence as meaningless in isolation. A quotation mark name is thus, Tarski says, like the proper name of a man. I shall call this the *proper-name theory* of quotation. Church attributes the same idea, or at least a method with the same consequences, to Frege.²⁴⁴

Once Church, Tarski, and Frege have been identified as supporters of the exclusivity thesis through their advocacy of the proper name theory, Davidson moves on to add Quine to the list:

Quine has repeatedly and colourfully promoted the idea of the quotation as unstructured singular term. Not only is there his denial, already cited, that quotations are descriptions, but the claim that the letters inside the quotation marks in a quotation occur there '... merely as a fragment of a longer name which contains, beside this fragment, the two quotation marks'.²⁴⁵

With the logician's account of quotation thus construed, Davidson proceeds to lay down the final crucial assumption of program 21:

The merit in [the logicians'] approach is the emphasis it puts on the fact that the reference of a quotation expression cannot be construed as owed, at least not in any normal way, to the reference of the expressions displayed within the quotation marks. But it seems to me that as an account of how quotation works in natural language, the approach is radically deficient.²⁴⁶

This passage, I claim, is where the subject matter of philosophical problem of quotation was effectively changed, and a new era had begun.

²⁴⁴ Davidson, "Quotation" pp. 81-82.

²⁴⁵ *Ibid.*, p. 82.

²⁴⁶ *Ibid.*, p. 82.

To clarify the difficulties in Davidson's characterization of the problem, consider a counterfactual situation. Suppose that Frege had used asterisks instead of single inverted commas when he wanted to mention signs. In that case, the use of asterisks would clearly have been a technical device of logical/philosophical discourse—one used for mentioning signs. The function of the asterisks would then be determined by what Frege *said* their function was, and since he was not as specific as he could have been in this regard, there would still be philosophical issues surrounding the use of asterisks (for example, whether quantifiers could bind a variable within asterisks). But: would there have been the temptation to search for a unified theory describing the basic principles that govern both (i) asterisks as used in philosophical discourse and (ii) quotation marks as used in ordinary discourse? There are reasons to think that the connection between the two phenomena would be too tenuous to tempt anyone. First of all, since the asterisks would clearly have been a conventional device governed by prescribed rules, the search for a descriptive theory encompassing both asterisks and quotation marks would have seemed misguided from the start.²⁴⁷ Secondly, once asterisks replace quotation marks, as used by Frege, a large part of the superficial resemblance between Frege's device and an act of direct quotation is lost.²⁴⁸

The tenuous nature of the connection becomes more obvious once the previous passage from Davidson is reconstructed by replacing the term 'quotation'

²⁴⁷ This claim is further supported by the fact that no one who pursues program 21 includes Quine's quasi-quotation (or any of the other strictly formal devices developed by logicians for mentioning signs) as belonging among the phenomena to be explained.

²⁴⁸ Although Frege used quotation marks in the way he did because he thought he was doing something that was related to direct quotation (this is suggested in "Ueber Sinn und Bedeutung" for example), he clearly realized that his use of quotation marks was deviant enough to require a warning and explanation to his readers of his *Grundgesetze der Arithmetik*.

with the term 'asterisk' in the places where he is talking about the philosophical use of quotation marks.

The merit in [the logicians'] approach to [asterisks] is the emphasis it puts on the fact that the reference of [an asterisk expression] cannot be construed as owed, at least in any normal way, to the reference of the expressions displayed within the [asterisks]. But it seems to me that as an account of how quotation works in natural language, the approach is radically deficient.

So reconstructed, this passage reveals in a more obvious way that Davidson changed the subject.

It is, of course, impossible to know for certain what would have happened if Frege had used asterisks instead of quotation marks to achieve his end. But if this minor typographical change would have prevented Davidson and the many who followed him from getting embroiled in a debate over the correct theory of quotation as used in both philosophical and ordinary discourse, the debate as it stands is misconceived.²⁴⁹

²⁴⁹ In Davidson's defense, one could point out that Frege and Tarski both seemed to consider the logical/philosophical use of quotation marks as related to ordinary usage. What is more, one could provide the following passage as evidence that Tarski thought the proper name theory was completely in accord with ordinary usage.

With [the proper name] interpretation, which seems to be the most natural one and completely in accordance with the customary way of using quotation marks, partial definitions of the type (3) cannot be used for any significant generalizations. ... (Tarski 1935 p. 160)

Referring to a passage like this, one could argue that Davidson didn't change the subject at all; the task of explaining how quotation works in ordinary language was a project that goes back as far as Tarski's 1935 paper.

There is, nevertheless, a way of reading this passage from Tarski that weakens this type of defense. All one needs to do is place emphasis on the word 'seems' and then claim that by the terms 'customary way', Tarski meant the customary way in logic texts, not the customary way in ordinary language. In fact, following Davidson's own *Principle Of Charity*, it would seem that we ought to read the passage from Tarski in this way, since reading it the other way results in Tarski saying something that is false (and perhaps obviously false).

In the end, whether or not Tarski confused Frege's convention with the ordinary use of quotation marks, there is reason to think that Quine did not. A study of his application of the device reveals that Quine recognized an important difference between Frege's convention and the

§9 THE LINGUISTIC ERA

Even if the program that Davidson launched was conceived through a misunderstanding, his demonstrative theory of quotation, along with the subsequent debate that ensued, deserves at least brief consideration.

Davidson outlines his theory of quotation in the following sentence.

Quotation is a device used to refer to typographical or phonetic shapes by exhibiting samples, that is, inscriptions or utterances that have those shapes.²⁵⁰

A more detailed account runs:

..what I propose is that those words within quotation marks are not, from a semantical point of view, part of the sentence at all. It is in fact confusing to speak of them as words. What appears in quotation marks is an *inscription*, not a shape, and what we need it for is to help refer to its shape. On my theory, which we may call the *demonstrative theory* of quotation, the inscription inside does not refer to anything at all, nor is it part of any expression that does. Rather it is the quotation marks that do all the referring, and they help refer to a shape by pointing to something that has it. On the demonstrative theory, neither the quotation as a whole (quotes plus filling) nor the filling alone is, except by accident, a singular term. The singular term is the quotation marks, which may be read 'the expression of a token of which is here'. Or to bring out the way in which picturing may now be said genuinely to be involved: 'the expression with the shape here pictured'.²⁵¹

The first thing to point out about Davidson's demonstrative theory is that most of the basic ideas of this theory had been suggested by others. In the 1930's, for example, Tarski had already suggested that quotation names involve reference to expressions having a certain shape:

ordinary use of quotation marks. After 1939, Quine strictly used single inverted commas for Frege's convention, while reserving double inverted commas for their ordinary use. This further tells against Davidson's critique, since all of the passages that Davidson addresses from Quine are passages in which Quine is discussing the use of single inverted commas.

²⁵⁰ Davidson, "Quotation" p. 79.

²⁵¹ *Ibid.*, p. 90.

with the above interpretation quotation-mark names must be regarded as general (and not as individual) names, which denote not only the series of signs in the quotation marks but also every series of signs of like shape. In order to avoid both objections of this kind and also the introduction of superfluous complications into the discussion, which would be connected among other things with the necessity of using the concept of likeness of shape, it is convenient to stipulate that terms like 'word', 'expression', 'sentence', etc., do not denote concrete series of signs but the whole class of such series which are of like shape with the series given; only in this sense shall we regard quotation-mark names as individual names of expressions.²⁵²

There is no acknowledgment of Tarski's suggestion, however, when Davidson sets out this aspect of the demonstrative theory. Beyond Tarski, we see that the important aspects of Davidson's demonstrative theory were more or less suggested by Sellars' 1950 account of pragmatic quotes:

A moment's reflection leads to the conclusion that
'chameau'
has the force of a type of descriptive phrase of which another example
would be the following:

the shape of which the ink-object to the right is an instance	}	chameau
--	---	---------

Now it is clear that an explication of the above descriptive phrase would show it to involve a demonstrative term ..²⁵³

and Christensen's 1967 account of quotation:

... we cannot regard [quotation expressions] as name-forming devices; they function rather like the pointing finger by calling our attention to the very object about which we want to say something, and for this reason have produced. ...

I do think it possible to show that it is much less plausible to regard 'Boston' 'as a name than as an actual production of a sign material within demonstrative quotation marks.²⁵⁴

²⁵² Tarski, "The Concept of Truth in Formalized Languages," p. 156 note.

²⁵³ Sellars, "Quotation Marks, Sentences, and Propositions," p. 516.

²⁵⁴ Christensen, "On the Alleged Distinction between Use and Mention," p. 361.

Thus the most we can say about Davidson (assuming he was not familiar with any of these other accounts) is that he discovered the demonstrative theory independently of these earlier accounts. He also deserves credit for making the theory popular and giving it its current name.

Davidson's theory not only failed to be original; it also seems problematic when considered in the context of the history of quotation. After all, according to Davidson, the "words within quotation marks are not, from a semantical point of view, part of the sentence at all." He claims that "the singular term is the quotation marks" which means that the *quotation marks* function as a constituent part of the sentence, while the object between them (the quoted expression) might just as well be out in the margin (its function is purely exhibitiv). Again, he writes:

Quotation is a device for pointing to inscriptions (or utterances) and can be used, and often is, for pointing to inscriptions of utterances spatially or temporally outside of the quoting sentence. ... The device of pointing can be used on whatever is in range of the pointer... (Davidson 1979 p. 91)

But as a theory about how quotation marks are used in ordinary language, this is plainly inconsistent with the historical facts. For as we saw in §3 above, it was the quotation marks which were originally placed in the margin outside of the page measure, while the quoted expressions were always inside the page measure. Davidson's theory is clearly false when considered as a theory about the use of quotation marks in ordinary language prior to the eighteenth century (for how could the subject term of a sentence be in the margin?). Davidson would have to argue that the use of quotation marks changed radically in two hundred years, so

that by the twentieth century, the quoted expression could now go in the margin while the quotation marks were confined within the page measure. Anyone who maintains that such a radical transformation in usage occurred owes us at least an explanation of how, why, and when it occurred.

In fact, however, is doubtful that any such transformation ever took place. History reveals that the use of quotation marks in ordinary language was never governed by strict rules; and the same is true today. Davidson's theory is not the true theory about the function of quotation marks in ordinary language, but a creative theory which suggests one way quotation marks could be interpreted. It seems, then, that Davidson had not adequately investigated the history of quotation—neither the general history, nor the history of the philosophical problem. If he had done some careful historical work, his work on quotation would likely have been very different.

It is typical of articles written in the linguistic era to contain minimal, if any references to the work produced in the preceding era. Most the articles written during this era refer to work from the logical era, but then jump directly to Davidson. Davidson's own neglect of the history seems to have been contagious.²⁵⁵

Under Davidson's influence, the philosophical problem of quotation became wedded to program 21. And the challenge among philosophers in the new era was to come up with the correct theory of how quotation works *across the board*. In 1985, we find Laurence Goldstein getting with the program:

²⁵⁵ This is natural, in some sense. If the authority on a subject fails to recognize a portion of its history, those who follow the authority are likely to overlook it as well.

Quotation may appear too trivial a topic to trouble philosophers. Yet an adequate theory of quotation has proved elusive, and catching this minnow should provide bigger fish to fry.²⁵⁶

And in his 1988 article "Quotation," we find Jonathan Bennett joining the program:

I shall argue that the truth about how quotation works has points of resemblance with both the spelling theory and demonstrative theories, though it is not a mere combination of elements from those two.²⁵⁷

Goldstein and Bennett proposed their own modified versions of Davidson's demonstrative theory; and not only his program, but his theory, was winning the day. But in 1992, with the publication of Corey Washington's article "The Identity Theory of Quotation" a formidable rival to the demonstrative theory appeared on the scene. Washington argues that "Davidson's demonstrative theory is false,"²⁵⁸ and that "Davidson's suggestion that quotation marks are mentioning expressions must be rejected."²⁵⁹ In place of Davidson's theory, Washington recommends the identity theory of quotation, which maintains "that in quotation, expressions are used to mention themselves, and that this correlation is rule-governed."²⁶⁰ Washington distinguishes the identity theory from the proper name theory, and attributes the origin of the former to Frege. Interestingly, even though Washington thinks the theory originates with Frege, he also thinks that it explains the use of quotation marks in ordinary language.

After Washington, we find Manuel Garcia-Carpintero, arguing against Washington's identity theory in "Ostensive signs: Against the Identity Theory of

²⁵⁶ Goldstein, "The Title of This Paper is 'Quotation'," p. 137.

²⁵⁷ Bennett, "Quotation," p. 399.

²⁵⁸ Washington, "The Identity Theory of Quotation" p. 605.

²⁵⁹ *ibid* p. 590.

²⁶⁰ *ibid* p. 583.

Quotation."(1994) Like Goldstein and Bennett, Carpintero proposes a version of Davidson's demonstrative theory. Two years later, in 1996, Marga Reimer claims that "Davidson's theory makes the mistake of conflating demonstratives with demonstrations,"²⁶¹ and attempts to find a theory lying somewhere between the identity theory and the demonstrative theory. All these papers are written in the spirit of program 21.

In 1997, the parameters of program 21 were more explicitly defined by Herman Cappelen and Ernie Lepore. Recognizing the variety of phenomena falling under the term 'quotation', they write:

There are at least four varieties of quotation, including, pure, direct, indirect, and mixed. A theory of quotation, we argue, should give a unified account of these varieties of quotation.²⁶²

From this passage, it is evident that Cappelen and Lepore assume that the various phenomena have enough in common to be subsumed under single unified theory. This, of course, is a very questionable assumption. Nevertheless, they proceed to develop a hybrid theory of quotation that combines aspects of Davidson's demonstrative theory of direct quotation with aspects of his theory of indirect quotation.²⁶³

Considering the possibility that these different phenomena are too diverse to be explained by a single theory, Cappelen and Lepore write:

Here we strongly disagree with [Barbara] Partee (1973) who both expresses doubt about whether "quotation is part of natural language" (p. 410) and explicitly says that what we are calling pure and mixed quotation should "be treated separately" from direct quotation. (p. 411)

²⁶¹ Reimer, "Quotation Marks: demonstratives or demonstrations?" p. 134.

²⁶² Cappelen and Lepore, "Varieties of Quotation," p. 429

²⁶³ Davidson's theory of indirect quotation can be found in his 1968 article "On Saying That."

But a year later, in light of Savas Tsohatzidis' counterexamples to their theory, Lepore and Cappelen attempt to distance themselves from the claim that their (or any) theory of quotation can account for all usage.²⁶⁴ The opening statement of their reply to Tsohatzidis runs:

Speakers do wild thing with quotes and even though the theory in "Varieties of Quotation" is unique in that it unifies a wide variety of quoting devices (pure, direct, indirect, and mixed), we did not claim that every usage can be accounted for by a single theory.²⁶⁵

Two other papers in this era propose new theories of quotation. The first is Paul Saka's 1998 paper "Quotation and the Use-Mention Distinction." In this paper Saka proposes what he calls *the Disambiguated Ostension Theory of Quotation*. Providing arguments against the name theory, Davidson's demonstrative theory, and Washington's identity theory, Saka explains his own theory:

The Disambiguated Ostension Theory of Quotation consists of two components. First, it assumes that the capacities for both use and mention stem from the same source, namely from the fact that the human mind associates a multiplicity of deferred ostensions with any exhibited token, thus giving rise to pragmatic ambiguity. ... While this first component allows for a pragmatic use-mention distinction, the other component of the Disambiguated Theory claims that quote marks formally announce that mentioning is taking place.²⁶⁶

²⁶⁴ It is not possible to give a detailed explanation of Tsohatzidis' counterexamples that would make sense to the reader without first giving a detailed explanation of the theory put forward by Cappelen and Lepore. Since these explanations would be technical and take up a lot of space, I refer the reader directly to the original articles for a clarification of the details of this debate. In brief, Cappelen and Lepore's Hybrid Theory of Quotation suggests using "same saying" and "same tokening" relations to analyze quotations involving mixed quotation (mixed quotations are cases which involve both indirect and direct quotation in the same sentence). Tsohatzidis provides several examples involving mixed quotation that cannot be adequately handled by their theory. One set of counterexamples deal with quoting someone in a language in which he never spoke or wrote. For example: Socrates said that the unexamined life "is not worth living for a human." The second set of counterexamples deal with cases where the person being quoted said something that is false. For example: Alice said that this five meters long bar "is ten meters long." In these cases, the result of the Hybrid Theory will have Alice stating a contradiction.

²⁶⁵ Cappelen and Lepore, "Reply to Tsohatzidis," p. 665.

²⁶⁶ Saka, "Quotation and the Use-Mention Distinction," p. 132

Over time, however, it appears that Saka has come to endorse a version of the identity theory (see Saka 2006)

In 1999 Roger Wertheimer published "The Apposition Theory of Quotation." Unlike many others working on quotation in this era, Wertheimer seems more in touch with the history of quotation:

Quotation marks came in only after the printing press, and even today their use is sporadic outside the literature of logic and linguistics. Their main (but not sole) function, much stressed by logicians like Frege and Quine, is disambiguation, making it unmistakable that what they surround is on display.²⁶⁷

Wertheimer is not exactly correct in his claim that quotation marks came in only after printing, but he is exactly correct in his claim that use of quotation marks in ordinary language is "sporadic." Wertheimer summarizes his theory in the following passage:

On this appositional theory of quotation, the enquoted (*qua* unenquoted) is a sense-perceptible object, like a sentence-embedded colour patch, produced and put on display to facilitate reference to something identifiable by and with it, specified by the noun phrase to which the enquoted is an apposition. The markers are syntactic devices without semantic content, signaling that the enquoted is being so displayed.²⁶⁸

Like Saka, Wertheimer rejects Davidson's claim that quotation marks have a semantic value.²⁶⁹

There were, of course, other important and valuable papers published on quotation during the linguistic era (see Simchen 1999, Truncellito 2000, and

²⁶⁷Wertheimer, "Quotation Apposition," p. 515.

²⁶⁸*Ibid.*, p. 519.

²⁶⁹ What does it mean to say that quotation marks have a semantic value? It means that they are equivalent to some word or phrase that has meaning. On Davidson's view, they are equivalent to a demonstrative pronoun. Those who reject the semantic view see quotation marks as a form of punctuation and thus a syntactic device.

Recanati 2001 for examples). For the most part, however, they all contribute to the debate as framed by Davidson.

The trend toward viewing the philosophical problem of quotation as a problem concerned with ordinary language reached its peak in 2003. In that year, the *Belgian Journal of Linguistics* organized a thematic conference and devoted an entire journal issue solely to the subject of quotation. Philippe De Brabanter summarizes the state of the discipline in his introduction to that issue.

This thematic issue of the *BJL* originated in the renewed interest in quotation-related matters over the last fifteen years or so. This period has seen the publication of an impressive list of significant papers, especially in journals devoted to the philosophy of language. These papers have aimed at doing mainly three things: recapitulating and assessing existing theories of quotation, submitting new problems that any account of quotation should be able to deal with, and developing new theories capable of addressing these issues.²⁷⁰

This passage provides further evidence that current philosophical work on quotation has been concerned primarily with searching for a unified theory of quotation (program 21).

The leading scholars of quotation were invited to the conference and were asked to write articles concerning the following seven examples of quotation.

- i) Gerald said that he would "consider running for the Presidency".
- ii) Politicians, with their speeches on "la fracture sociale", will simply promise reforms and still more laws.
- iii) If you were a French academic, you might say that the parrot was *un symbole du Logos*.
- iv) Each tablet in the war cemetery would commemorate Monsieur Un Tel, *lâchement assassiné par les Allemands*, or *tué*, or *fusillé*, and then an insulting modern date : 1943, 1944, 1945.
- v) Descartes said that man "is a thinking substance".
- vi) Like Luther, Lucian Freud seems to attest that "Here I stand, I can do no other."

²⁷⁰De Brabanter, "Introduction" p. 1.

- vii) Naturally John Lennon was expelled and sent to art school, "so I can fail there as well".²⁷¹

One interesting thing about these examples is that *none* of them involves the use of quotation marks according to Frege's convention. Another is that they all involve cases in which the quotation expression is *both* used *and* mentioned. Finally, all except the fifth example are actual occurrences taken from ordinary language. Again, this is more evidence of how far the current philosophical debate over quotation has drifted from the concerns of the logicians who initiated the original discussion.

§10 THE PROBLEMS WITH PROGRAM 21

The goal of program 21 is to establish a single descriptive theory of quotation that accounts for acts of quoting, acts of using of inverted commas, *and* acts of mentioning signs, as these acts occur in *both* ordinary *and* philosophical discourse. Although this is the dominant program pursued by philosophers and linguists who currently work on quotation, there is reason to think that this problem is intractable, and that program 21 should be abandoned in favor of a different program.

One reason for abandoning program 21 is that it confuses the philosophical use of inverted commas with their ordinary uses. And as we saw in §8 above, there are good reasons to treat these uses separately. The philosophical use originated as a technical device for mentioning signs in formal logic, and often does not involve quoting at all. Moreover the temptation to search for a

²⁷¹ *Ibid.*, p. 2.

unified theory that accounts for both uses is based largely on a superficial resemblance, i.e., the fact that both employ the same typographical marks. If Frege had used asterisks instead of inverted commas for mentioning signs, his device would have clearly been a technical device of formal logic governed by prescriptive rules; and in that event it is doubtful that anyone would have sought a single descriptive theory that explained the use both of asterisks and of inverted commas.

Philosophers who concede that Frege's convention is really something distinct from the ordinary use of quotation marks may decide to forget about the philosophical use of inverted commas and pursue a theory that explains how quotation works in ordinary language. By dropping the philosophical dimension, program 21 turns into program 7, or the program of establishing a single descriptive theory of quotation that accounts for acts of quoting, acts of using of inverted commas, and acts of mentioning signs, as these acts occur in ordinary discourse. But the potential for success in the pursuit of program 7 is also doubtful.

First of all, mentioning signs, using inverted commas, and quoting are three distinct acts that only sometimes overlap.²⁷² So a search for a single theory that explains all three is questionable. Secondly, an examination of the history of quotation reveals that the use of quotation marks in ordinary language has exhibited a great deal of variety.²⁷³ The search for a single theory conflicts with that variety. Thirdly, program 7 searches for a descriptive theory of quotation;

²⁷² This point is argued in Part II, §2 of the current chapter.

²⁷³ This point is argued in Part III, §2 of the current chapter.

but the defense of a given theory often reduces to the mere choosing of one possible interpretation of quotation marks over another. Thus, perhaps quotation marks are like the duck/rabbit and there really "is no fact to be discovered but only a choice to be made."²⁷⁴ Lastly, even in their ordinary employment the use of quotation marks seems to be a matter of convention. So to search for a theory of how they work is to search for a convention. But this is not what philosophers who are searching for a descriptive theory of quotation are doing. They are not attempting to discover, for example, how the convention arose. Instead, they often try to figure out how quotation works by creating examples and testing them against their intuitions. This kind of approach is inappropriate if the goal is to come up with a descriptive account of a convention. Since program 7 is a sub-program of program 21, all these reasons tell against the plausibility of the latter program as well.

Of course, even if program 21 was founded on a misunderstanding, and is hopelessly intractable, it would be a mistake to dismiss all the work produced under it as worthless. Many of the articles produced under the auspices of Davidson's framework have value nonetheless. There are many fine distinctions and insights to be found in this literature; and many of these distinctions and insights are valuable to those pursuing program 31.

²⁷⁴ Here I borrow a phrase from Susan Haack.

PART IV
A PRELIMINARY NOTATION FOR THE THEORY OF NOTATION

§1 OVERVIEW

In the preceding parts of this chapter, I gave an historical survey of quotation marks and other conventions for mentioning signs. For the remainder of this chapter I leave quotation marks behind (along with the numerous theories about how they work) and turn to the project of developing a preliminary system of notation for mentioning signs. Before setting out the actual graphic conventions of this notation, I will first consider both the intended application of the system and its requirements. In this way I may avoid potential misunderstandings of, and irrelevant objections to, the system.

§2 ON THE INTENDED APPLICATION OF THE SYSTEM

The system of notation for mentioning signs (i.e. the sign notation) developed below is designed to satisfy both specific *practical* and general *theoretical* demands. As a practical tool, it is designed primarily for the very specific purpose of facilitating the theory of notation (to which this present work is intended as a groundwork). For in order to make certain advances in the theory of notation, one must first have the means to specify the structure of a sign system precisely; and part of that specification involves stating precisely which sign/objects are to be counted among the members of the model set.²⁷⁵ The sign notation developed below will allow for this. Frege's convention, will not be used, partly because of the longstanding philosophical controversy surrounding it,

²⁷⁵ Roughly speaking, a model set is the set of things that are counted among the signs of a sign system. It is to be distinguished from the target set which is the set of things to be signified.

and partly because the convention fails to recognize many important distinctions among signs.

Beyond its practical application, the system is designed to be capable of addressing a variety of theoretical problems likely to be ignored by those who are interested only in practical matters. For example, it is a legitimate theoretical problem whether it is possible to create a sustained discourse on signs that involves no occurrence of a sign that is simultaneously both used and mentioned. Another problem (related but different) is whether it is possible to create a discourse on signs in which no token of a sign is used constitutively *de re* in one place, but used *de signo* in another.²⁷⁶ These problems, however, are primarily theoretical in nature. From the practical perspective, they barely constitute problems at all.²⁷⁷ Indeed, the necessity of carefully marking the use–mention distinction in written discourse through the use of Frege's convention has been rejected by those who approach the problem of mentioning signs from the purely practical perspective.²⁷⁸ This is largely because those who see the problem as practical often rediscover what as Augustine pointed out long ago in *De Magistro*, viz. that using reason and paying attention to context are often sufficient to determine whether a sign is used or mentioned. Thus, as a remedy to the

²⁷⁶ A discussion of the constitutive use of objects as well as the *de re* and *de signo* use of signs occurs in Chapter I, Part III, §2.

²⁷⁷ These problems perhaps have practical intrigue in computer science, since ambiguities cannot be as easily resolved by a machine that processes the value of an expression based solely on its objectic properties. Indeed, those interested in HCI (human computer interface) have recently taken interest in the use-mention distinction, and have been drawn into the philosophical problem of quotation. See "The Use-Mention Distinction and Its Importance to HCI" by Anderson, Okamoto, Josyula, and Perlis (1999).

²⁷⁸ See Christensen 1967, p. 359, Saka 1998 p. 118, and Cappelen and Lepore 1999 p. 743, for a few examples of those who deny that the use of Frege's convention is necessary to avoid confusion between use and mention.

It is possible, however, that this system (or a similar one) may eventually find a wider practical application in certain areas of philosophy, or other fields of inquiry that investigate signs. Such an extension of its practical application, however, would be more than what was originally intended for the present system. Peculiar as it may seem, there are reasons for designing the system so that it is unlikely to gain a wider practical application.²⁸¹

Finally, it should be stressed that the system developed below is only preliminary. It is but a first draft of a project that will doubtlessly require a good deal of revision as further results accrue. For notational and conceptual advances must keep pace with one another, and as our knowledge about the theory of notation grows, additions and modifications to the system are likely to be required.

§3 ON THE REQUIREMENTS OF THE SYSTEM

Generally speaking, the requirements that are imposed on any notation can be divided into *requirements of content* and *technical requirements*. Setting out the requirements of content involves making a list of all the things and distinctions that the notation must be capable of signifying. The technical requirements, on the other hand, place demands on how that content is expressed. The technical requirements are further divided into *semantic requirements*,

This is barely intelligible without inverted commas and punctuation. With Frege's help, it becomes intelligible:

(1') John where Jack had had 'had', had had 'had had'; 'had had' had had a better effect on the teacher.

²⁸¹ Some of these reasons are considered below in §3.4

syntactic requirements, and *pragmatic requirements*. Each of these requirements of the system will be considered in turn.

§3.1 CONTENT REQUIREMENTS

Foremost on the list of things that must be mentionable by the sign notation are words. But what is a word?²⁸² Without getting bogged down in the many deep and troubling metaphysical problems posed by this question, we may make the somewhat superficial observation that words may be either spoken or written.²⁸³ And although when talking of words one often chooses to overlook this distinction, there are other occasions when one desires to mention only the spoken word or only the written word. This is especially important for the theory of notation, which is interested in how the objectic properties of a sign relate to its semantic properties; for the objectic properties of the spoken word are quite different from the objectic properties of the written word. Thus, the system requires one device for mentioning spoken words, another device for mentioning written words, and a third device for mentioning words without regard to whether they are written or spoken.

²⁸² Bertrand Russell devoted the whole first chapter of *An Inquiry into Meaning and Truth* to this question. The answer, according to Russell, is that words are classes or universals. He also discusses the several troubles with defining the specific class that is a certain word. In the end, he concludes that speaker intention is important when discerning whether a particular utterance or inscription is a member of a certain word. See Russell 1940 pp. 23-25.

²⁸³ There are, of course, words that are spelled out in Braille which seem to be different from what one is inclined to imagine when thinking of written or spoken words. And this leads to the question of whether there could be words apprehended through the sense of smell or taste. Imagine, for example, a system in which different kinds of liquors are correlated to the different letters of the alphabet: a shot of whisky corresponds to the letter 'd', a shot of tequila corresponds to the letter 'r', a shot of vodka corresponds to the letter 'u', a shot of Jagermeister corresponds to the letter 'n', and a shot of Sambuca corresponds to the letter 'k'. If these shots were lined up in order, and tasted, we might say that they formed the word 'drunk'.

Another important distinction is the distinction between word tokens and word types. On some occasions we want to mention a particular word token, while on other occasions we want to mention a word type. And there are further occasions when we want to talk neither about a specific token nor about the type but, instead, generally about every individual token of a given type. The system will need distinct devices for achieving these ends too.

The distinctions between the written and the spoken, and types and tokens, apply not only to words, but to other signs as well. Sentences, because they are normally composed of words, can be written or spoken, and admit of the type-token distinction. Other signs, like single letters or special symbols, also admit of these distinctions. The devices formulated to handle words should be applicable in these other cases as well.

A sign token necessarily has semantic properties; and in most cases those semantic properties are correlated *only* with a subset of the sign token's objectic properties. A specific token of the written word 'man' can be written in ink, engraved in stone, or carved out of wood; but such differences in the token's substrate are normally (although not necessarily) irrelevant to its semantic properties. Likewise, font type, size, color, capitalization, italicizing, bold facing and other variations in the objectic properties of a written word normally are not associated with any unique semantic properties.²⁸⁴ However, an author may choose on occasion to attach significance to some of the objectic properties of a

²⁸⁴ The use of italics for mentioning signs, of course, is an exception to this rule.

sign that are normally semantically irrelevant.²⁸⁵ Whenever this happens, the need arises to distinguish and mention these different species of the sign. Another requirement of the system to be developed, then, is that it have a device capable of realizing this end.

In addition to mentioning aspects of a sign's objectic nature, it often happens that one wants to mention a semantic property of a sign. For example, sometimes one wants to mention the concept or meaning associated with word, or the thought or proposition associated with a sentence. The system should have a device for doing so. It might also be thought that a device is required for mentioning the denotatum of a sign, but this is normally not required, since the use of the denoting sign itself can (and should) serve this purpose.

There are further distinctions that a notation for mentioning signs might be required to accommodate—distinctions that depend on certain highly suspect metaphysical and epistemological assumptions. For example, if a distinction is maintained between phenomenal objects (objects as they exist in consciousness) and physical objects (objects as they exist external to the body), devices that capture this distinction would be required of the system as well. Moreover, if such a distinction is maintained, not only would sign tokens admit of the distinction, so that we would be forced to distinguish the phenomenal sign token as it exists in consciousness from the physical sign token as it exists external to

²⁸⁵ The capitalization of certain words to signify a deviant use is an example of this. For a concrete example, see Susan Haack's, *Evidence and Inquiry*, p. 186. In this work Haack uses the word 'foundationalism' written all in capital letters to stand for the thesis that epistemic justification is not purely conventional; she uses the same word written in lower case italics to stand for thesis that epistemology is an a priori discipline; and the word written in normal lower-case letters for any theory of epistemic justification that posits a distinction between basic and derived beliefs, and a one-directional support relation.

body, but mere objects would likewise admit of the distinction, and we would then be required to have devices for mentioning phenomenal mere-objects and physical mere-objects.

It might be argued that the theory of notation need not concern itself with such distinctions, since they are irrelevant to the study of sign systems and their characteristics. Whether this is so is a matter not easily settled. But is worth noting that the theory of notation is very much concerned with the structural characteristics of signs and sign systems. And one very important structural characteristic of a sign system is the number of elements in its model set. Furthermore, granting the distinction between phenomenal and physical sign tokens, it turns out that the cardinality of the set of phenomenal sign tokens would often be greater than the cardinality of the set of physical sign tokens, since one and the same physical sign token would often give rise to multiple phenomenal tokens. Whether such a difference could have important or interesting consequences is a issue that could only be investigated by granting the initial distinction and engaging in further inquiry on the subject. And such inquiry would be greatly facilitated by devices for marking the distinction between phenomenal and physical objects. On the other hand, refusing to admit the distinction, along with the devices to mark it, will surely do much to block the way of inquiry concerning such matters. The requirement of the system to mark this distinction, then, can be considered as only a conditional one, and will not be pursued at this time.

With the various distinctions thus spelled out, the specific items that must be mentionable by the system are listed as follows.

- (a) sign tokens
- (b) sign types
- (c) written signs
- (d) spoken signs
- (e) intensional content (concepts/meanings, propositions)
- (f) sign characteristics

The items that could be included are:

- (g) impression types associated with signs
- (h) objects external to the body associated with signs

§3.2 SEMANTIC REQUIREMENTS

Among the semantic requirements of the system are Mill's two requisites for any philosophical language, viz., (i) precise signification and (ii) effability.²⁸⁶

The first requirement (*the precision requirement*) demands that the signs introduced be neither ambiguous nor vague in their signification (at least to the degree that this is possible). The second requirement (*the effability requirement*) demands that no item counted among the content requirements in the preceding sub-section be left without a corresponding sign.

In addition to these two principal requirements, we may add *the generality requirement*, i.e., the requirement that general signs be introduced to facilitate instances where one wishes to mention not a specific item, but a group of items sharing a certain characteristic. For example, the generality of the term 'parent' is useful in cases in which one prefers to attribute characteristics that apply to both

²⁸⁶ These requirements were discussed more fully in Chapter I, Part IV, §3.

mothers and fathers. Likewise, a general device that will allow one to attribute characteristics to written and spoken words indiscriminately will also be useful.

The last semantic requirement may be called *the parity requirement*. This requirement can be divided into two sub-requirements: *the compatibility requirement* and *the incompatibility requirement*. The compatibility requirement demands that the features (of the signs) that are chosen as significant be compatible if the things they signify are compatible. Conversely, the incompatibility thesis demands that the features (of the signs) be incompatible if the things they signify are incompatible. Taken together, these two conditionals are equivalent to the parity requirement: the features (of the signs) that are chosen as significant should be compatible if and only if the features that they signify are compatible. The compatibility requirement would be violated, for example, by a system which demands that the numerals of even numbers be written in blue ink, while the numerals of prime numbers be written in red ink, since the number two is both even and prime.²⁸⁷ A system which violates the incompatibility requirement would be one which demands that the written numerals of even numbers be italicized and the written numerals of odd numbers be bold faced, since a numeral can be both simultaneously bold faced and italicized, but a number cannot be both odd and even.

A violation of the compatibility thesis will often lead, in turn, to a violation of the effability requirement, and can be considered a serious flaw in the system. A violation of the incompatibility thesis, on the other hand, is a much less heinous offense. As a result, only the compatibility requirement will be strictly

²⁸⁷ The example presupposes that a numeral be written completely in one color or another.

imposed on the system. The incompatibility requirement will be accommodated only when feasible.

§3.3 SYNTACTIC REQUIREMENTS

The primary syntactic requirement placed on the system is to state the conditions under which a sign or a combination of signs is well-formed. Since, however, the system will be designed as an extension of natural language, it is not possible to state the conditions of a well-formed expression precisely. The requirement of well-formed-ness in this case must be weakened to specifying how the new signs are to be integrated into natural language. This involves stipulating the part of speech for every new sign, or, in the case where a sign is a mere abbreviation for a phrase, to explain how the sign can be translated into its natural language equivalent.

§3.4 PRAGMATIC REQUIREMENTS

The pragmatic requirements on a system must always take into consideration the users of the system; and they are also largely determined by the system's intended application and goals. The first requirement is the *production requirement* which demands that the signs that are chosen for the system be easy enough to produce and reproduce. If the materials required to produce or reproduce a sign are either scarce, or require a great effort and expense to generate, the system may be considered pragmatically inadequate. For example, any system that required the employment of signs sculpted out of lunar rock would run counter to the production requirement. And in some cases, initial production may be a simple matter, while large scale reproduction remains

problematic. This tends to be the case with the employment of color as a semantically relevant feature in printed materials, since the production of a single document in color presently poses few problems, while the wide-scale reproduction of such a document tends to raise financial issues. Sometimes, however, there are pragmatic reasons for violating the production requirement. Scarcity of materials is desirable feature if one desires to impose ineffability upon the masses; and one legitimate reason for doing so is that by constraining the application of the system, the preservation of the intended signification of the signs can be insured. After all, once a device is employed in wider circles, there is greater potential for its misapplication, which in turn leads to a modification of the signification that was originally intended.

Another pragmatic requirement placed on a system of signs is *the learning requirement*, i.e., the degree of difficulty involved in learning to interpret and express oneself in the system should be appropriate to its degree of usefulness. The easier it is to learn, the less useful it needs to be; while the more difficult it is to learn, the more useful it needs to be. Two features that a system for mentioning sign might possess which are directly related to the learning requirement are *iterability* and *recoverability of the denotata*.²⁸⁸ If the device chosen to mention a sign is iterable, then one only needs to learn a single rule in order to express any number of items of a certain type. Likewise, if the device chosen to mention a sign has the property of recoverability of the denotata, one only needs to learn a rule in order to be capable of interpreting a potentially infinite number of

²⁸⁸ These concepts are discussed above in §7 of the previous part of this chapter.

expressions. The system developed below, then, should employ devices that are iterable and have the property of recoverability.

One final pragmatic requirement of the system is that the devices chosen for mentioning signs should not have different applications in ordinary use. In other words, they should involve the novel use of unfamiliar signs as opposed to the novel use of familiar signs, or the deviant use of familiar signs. (Frege's convention fails this requirement.)

§4 THE OSTENSION NOTATION

The basic idea behind the ostension notation for mentioning signs was first suggested by Sellars (1950), who used asterisks to form what he called *pragmatic quotation*.²⁸⁹ The basic idea was also suggested by Christensen (1967); although the origin of the idea is commonly attributed to Davidson (1979). Something reminiscent of Reichenbach's token quotes (Reichenbach 1947) can also be found in what follows.

The first thing to note about the devices of this system is that their applicability is restricted to mentioning objects (or types of objects) that can appear on a written page. The general device consists in flanking a written object with a pair of pointing fingers. Consider, for example, the object on the following object display line.

ODL (2.4.1) 🖐️ man 🖐️

The object on ODL (2.4.1) is an example of an *ostension expression*. As a general convention, we stipulate that an ostension expression formed with a pair of red pointing fingers refers to the written token to which the red fingers point.

²⁸⁹ For a more detailed discussion of Sellars' device, see Part 3, §6 of this chapter.

A pair of fingers are taken as equivalent to a demonstrative pronoun, and thus as a singular term. An object between a pair of pointing fingers is to be viewed as a mere object (like objects on object display lines), and as not contributing anything grammatical to the sentence.²⁹⁰ Indeed, we stipulate that it is not a proper part of the sentence at all, although it occurs in close proximity to the sentence. The pair of pointing fingers constitutes all that is semantically relevant in an ostension expression. Because of certain logical complications that can arise with the iteration of a device of this type, it is also stipulated that pointing fingers are not iterable, i.e., the system does not permit the use of an ostension expression to mention an ostension expression, nor a pointing finger on its own.²⁹¹

On many occasions one wants to mention a written word type, instead of a written word token. Although types are abstract objects, one can refer to a type by pointing to a token that instantiates the type. There are, however, problems with this strategy, since a single token instantiates many types. As Jonathan Bennett pointed out:

Any displayed token has countless features, and so is of countless different kinds. Therefore, to say
 the inscription-type instantiated here: sheep
 or, what amounts to the same thing,
 the inscription-type each token of which is like this: sheep
 is to leave things open to an intolerable degree. That is what I call the problem of relevant features. It urgently confronts [Davidson's] demonstrative theory, which must be amplified so as to meet it.²⁹²

²⁹⁰ A further point that should be noted is that no punctuation that belongs to the discourse itself, should occur between the pointing fingers.

²⁹¹ George Boolos has pointed out how the iteration of Frege's convention and similar types of devices can lead to ambiguity. The simplest way of avoiding the problem is to restrict iterability in these cases, and provide for it other cases. See Boolos, *Logic, Logic, and Logic*, pp. 392-394, for further details of the problem. Ostension expressions can be mentioned, however, by using object display lines or the Box Notation, described below.

²⁹² Bennett, "Quotation," p. 403. David Truncellito also recognizes and addresses this problem in his paper "Which Type is Tokened by a Token of a Word-Type?" (2000).

Thus, in order to mention a type, it is not sufficient to point at a token of that type,. As Bennett puts it, one must have a way of indicating the "relevant features" of the mentioned type. There is, however, an important difference between Bennett's task and mine. His task is to *describe* the relevant features that are picked out by quotation expressions as used in ordinary language, while my task is merely to *prescribe* the relevant features that are picked out by ostension expressions.

The type mentioned by a pair of pointing will always be exemplified by the token within those pointing fingers. A pair of pointing black fingers will be used to mention types of strings of alphabetic characters (including spaces and punctuation marks) without regard to font type, font style (italicization and/or bold facing), font size, capitalization, color, or any other font variations.²⁹³

Consider the object on the following object display line:

ODL (2.4.2) ☞ man ☞

This (if placed in the suitable context) refers to the written word type that is composed of the 13th, 1st, and 14th letters of the Roman alphabet, in that order.²⁹⁴

It should be noted that since pointing black fingers always mention strings of characters, the result of placing a non-character between them results in an ill-formed expression.

²⁹³ The notation can also be used to mention strings of ideograms or other types of written characters. They need not necessarily be alphabetic.

²⁹⁴ Thus, black pointing fingers work in much the same way that Bennett proposes for quotation expressions. See Geach (1957) and Bennett (1988) for earlier works that have already worked out the basic idea behind this device.

















Like black pointing fingers, blue fingers will be used to mention types of strings of characters. The blue fingers, however, indicate a wider set of the relevant features beyond mere spelling and punctuation. Included among the relevant features of the mentioned type are font type, font style, capitalization, and color. Font size in this case, remains irrelevant to the type. Consider, for example, the object on the following display line.

ODL (2.4.3)  man 

If placed in the suitable context, this object would mention the written word type which is composed the 13th, 1st, and 14th letters of the lower-case Roman alphabet, in Times New Roman font. All tokens of the type have the color black and are neither italicized nor bold-faced.

It should be obvious that additional varieties of ostension expressions could be formulated—varieties which pick out types of expressions characterized by different relevant features. For example, one could use purple pointing fingers to mention a type of alphabetic string, with sensitivity to italicization and font size, but not font type, capitalization, color, boldfacing etc.. The three types of ostension expressions presented above are formulated with some of the more salient relevant features of written expressions in mind.

In order to reinforce the understanding of red, black, and blue ostension expressions, the following list of corollaries is provided.

- | | |
|--------------|--|
| Corollary #1 |  man  ≠  man  (difference of location in space) |
| Corollary #2 |  man  =  man  |
| Corollary #3 |  man  ≠  man  (difference in color) |
| Corollary #4 |  man  ≠  man  (difference in style—bold facing) |

Corollary #5	$\langle \text{man} \rangle \neq \langle \text{MAN} \rangle$ (difference in case)
Corollary #6	$\langle \text{man} \rangle \neq \langle \textit{man} \rangle$ (difference in style—italic)
Corollary #7	$\langle \text{man} \rangle \neq \langle \text{man} \rangle$ (difference in font type)
Corollary #8	$\langle \text{man} \rangle = \langle \text{man} \rangle$
Corollary #9	$\langle \text{man} \rangle = \langle \text{man} \rangle$
Corollary #10	$\langle \text{man} \rangle = \langle \text{man} \rangle$
Corollary #11	$\langle \text{man} \rangle = \langle \text{MAN} \rangle$
Corollary #12	$\langle \text{man} \rangle = \langle \textit{man} \rangle$
Corollary #13	$\langle \text{man} \rangle = \langle \text{man} \rangle$
Corollary #14	$\langle \text{man} \rangle$ is a token of $\langle \text{man} \rangle$
Corollary #15	$\langle \text{man} \rangle$ is a token of $\langle \text{man} \rangle$
Corollary #16	$\langle \text{man} \rangle$ is a proper-subtype of $\langle \text{man} \rangle$

§5 THE BOX NOTATION FOR MENTIONING WRITTEN SIGNS

The box notation for mentioning signs involves a conglomerate of ideas, most of which were suggested elsewhere. Instead of using inverted commas or pointing fingers, the notation employs a variety of boxes having different semantic functions. The idea of using a box is suggested, to some degree, by Geach (1957), Goldstein (1985), and Bennett (1988); although a more explicit and thorough suggestion of the idea occurs only in Boolos (1998). The current notation, however, was developed independently of any of these earlier works. Concerning the semantic functions of the boxes, a variety of the ideas and distinctions are suggested by many previous works and will be acknowledged in turn.

The general device consists in surrounding a written object with a box. The first thing to note about the devices of this system is that their applicability is *not* restricted to mentioning objects or types of objects that can appear on a

written page. Moreover, unlike ostension expressions, *box expressions* can be used to mention ostension expressions. Consider, for example, the object on the following object display line.

ODL (2.4.4) $\boxed{\text{man}}$

The object on ODL (2.4.4) is an example of a box expression. As a general convention, I stipulate that a box expression formed with a solid thin black line designates *a set*. The set designated by a solid thin black box expression is the set of tokens composed of all the same alphabetic characters of the token in the box (in that order including spaces and punctuation marks) without regard to font type, font style, font size, capitalization, color, or any other font variations. In the case under consideration, the set mentioned is the set of written tokens consisting of the 13th, 1st and 14th letters of the Roman alphabet. Every token of ☞man☞ is a member of $\boxed{\text{man}}$; and every member of $\boxed{\text{man}}$ is a token of ☞man☞ . The rule cannot be generalized, however, since box expressions can be used to mention ostension expressions, but ostension expressions cannot.

From the grammatical perspective, a plain box expression functions as singular term that designates a particular set; and in fact, such an expression does not mention any signs at all. In order to say something about the tokens which are members of the set designated by a black boxed expression, one can use objects similar to those on the following display lines.

ODL (2.4.5) $\Pi \in \boxed{\text{man}}$
ODL (2.4.6) $\Sigma \in \boxed{\text{man}}$
ODL (2.4.7) $\forall \in \boxed{\text{man}}$
ODL (2.4.8) $\exists \in \boxed{\text{man}}$

The object on ODL(2.4.5) will function as a plural noun phrase with an embedded quantifier that collectively mentions every member of man.²⁹⁵ The object on ODL(2.4.6) will also function as a plural noun phrase with an embedded quantifier which mentions at least two members of man. They are equivalent to the noun phrases on the following two display lines, respectively.

ODL (2.4.9) All members of man
ODL (2.4.10) Some members of man

The objects on ODL(2.4.7) and ODL(2.4.8) will function as singular noun phrases, and are equivalent to the following noun phrases on the following two display lines, respectively.

ODL (2.4.11) Any member of man
ODL (2.4.12) Some member of man

The basic idea behind the semantic roles of these box expressions was suggested by Linsky (1950). Roughly speaking, Linsky used dotted expressions (a token flanked with dots) to designate sets of tokens, and he suggested using inverted commas to mention the members of such a set ambiguously.²⁹⁶

Unlike ostension expressions, box expressions are iterable. Thus the object on the following display line mentions a set whose members are box expressions.

ODL (2.4.13) man

²⁹⁵ From this point on, whenever I talk about the semantic values of objects on display lines, it is to be assumed that those objects would have those values if taken off the display line and placed in the appropriate context where they can function de signo.

²⁹⁶ See Part II, §6 of this chapter for a more detailed account of Linsky's system.

The object on ODL (2.4.4) is a member of the set designated by the object on ODL (2.4.13). It should be noted, however, that the latter object does not designate the former, nor does it designate a set of sets; it only designates *a set* of written objects, viz, a set of all box expressions containing a token of $\langle \text{man} \rangle$. If one wants to mention the members of the set, one will use an expression similar to one of the following objects, according to the interpretations stated above.

ODL (2.4.14)	$\Pi \in$	$\langle \text{man} \rangle$
ODL (2.4.15)	$\Sigma \in$	$\langle \text{man} \rangle$
ODL (2.4.16)	$\forall \in$	$\langle \text{man} \rangle$
ODL (2.4.17)	$\exists \in$	$\langle \text{man} \rangle$

On occasion, one wants to mention a specific token of a written expression. Red pointing fingers can be used to this end in many cases, but not in the cases in which the expression to be mentioned is itself an ostension expression (since iterability of pointing fingers was disallowed because of possible ambiguity). Solid thin line red box expressions can be used to for this purpose. Consider the object on the following display line.

ODL (2.4.18) $\langle \text{man} \rangle$

Like all boxed expressions, this object designates a set; but in this case the designated set is the singleton set whose only member is the token within the red box.²⁹⁷ If one wants to refer to the member of a certain singleton set, one can use either of the two objects occurring on the display lines below.

ODL (2.4.19)	$\forall \in$	$\langle \text{man} \rangle$
ODL (2.4.20)	$\exists \in$	$\langle \text{man} \rangle$

²⁹⁷ Although Linsky employed Reichenbach's token quotes to mention individual tokens, he had no convention for mentioning a set whose only member was a particular token.

Like black box expressions, red box expressions are iterable, and they always function as singular noun phrases, with an embedded quantifier.

Finally, if one wants to refer to written expressions having certain relevant features, a solid thin line blue box expression can be used. The expression on the following display line designates a set of written tokens composed of the 13th, 1st and 14th letters of the Roman alphabet, with sensitivity to font type, font style, capitalization, and color.²⁹⁸

ODL (2.4.21) man

Like black box expressions, the tokens of the set can be mentioned by the objects on the following display lines.

ODL (2.4.22) $\Pi \in$ man

ODL (2.4.23) $\Sigma \in$ man

ODL (2.4.24) $\forall \in$ man

ODL (2.4.25) $\exists \in$ man

Thus solid thin blue box expressions are either plural or singular noun phrases with embedded quantifiers.

In order to reinforce the understanding of solid thin red, black, and blue box expressions, the following list of corollaries is provided.

Corollary #17 man \neq man

Corollary #18 man = man

Corollary #19 man \neq *man*

Corollary #20 man \neq man

Corollary #21 man = man

²⁹⁸ When setting out his dotted expressions for mentioning sets of tokens, Linsky was not sensitive to the problem of relevant features. As it is not clear whether Linsky's dotted expressions function more like black, or blue box expressions.

Corollary #22	$\boxed{\text{man}} = \boxed{\text{man}}$
Corollary #23	$\boxed{\text{man}} = \boxed{\text{man}}$
Corollary #24	$\boxed{\text{man}} \subset \boxed{\text{man}}$
Corollary #25	$\boxed{\text{man}} \subset \boxed{\text{man}}$
Corollary #26	$\forall \in \boxed{\text{man}} \in \boxed{\text{man}}$
Corollary #27	$\exists \in \boxed{\text{man}} \in \boxed{\text{man}}$
Corollary #28	$\text{☞ man ☞} \in \boxed{\text{man}}$
Corollary #29	$\boxed{\text{man}} = \boxed{\text{MAN}} = \boxed{\text{man}}$
Corollary #30	$\boxed{\text{man}} \neq \boxed{\text{MAN}}$
Corollary #31	$\boxed{\text{man}} \neq \boxed{\text{man}}$
Corollary #32	$\boxed{\text{man}} \neq \boxed{\text{man}}$

§6 THE BOX NOTATION FOR MENTIONING SPOKEN SIGNS

Spoken signs, considered as objects, are quite different from written signs; moreover one cannot, for example, point to a spoken word. As a result, ostension expressions cannot be used to mention spoken words (or more generally, spoken signs). Corrugated box expressions similar to the one on the following object display line will be used to designate sets of sound sequence tokens.

ODL (2.4.26) $\boxed{\text{man}}$

The set of tokens designated by the object on ODL (2.4.26) includes any sound sequences that would ordinarily be transcribed by a token of ☞ man ☞ , without regard to pitch, accent, duration, intonation, volume, etc.. Tokens of this set can be mentioned by using any of the following objects in accordance with the interpretations given above.

ODL (2.4.27) $\Pi \in \boxed{\text{man}}$

ODL (2.4.28) $\Sigma \in$ man

ODL (2.4.29) $\forall \in$ man

ODL (2.4.30) $\exists \in$ man

In situations where one wants to mention a particular pronunciation of a spoken word, or two different spoken words with the same spelling (heteronyms) one can place the phonetic spelling of a spoken word in a corrugated box to form the set of those more specific sound sequences.²⁹⁹

ODL (2.4.31) /'ɔ:gəsti:n/

ODL (2.4.32) /ɔ:'gʌstɪn/

ODL (2.4.33) /'dezət/

ODL (2.4.34) /dɪ'zə:t/

The object on ODL (2.4.31) designates one set of pronunciations of Augustine's name, while the object on ODL (2.4.32) designates another. The object on ODL (2.4.33) designates one set of pronunciations of desert while the object on ODL (2.4.34) designates another. Corrugated boxes are iterable in principle, since given any box expression, there is a pronunciation for it. But I won't do that here.

In order to reinforce the understanding of corrugated box expressions, the following list of corollaries is provided.

Corollary #33 /'ɔ:gəsti:n/ \subset Augustine

Corollary #34 /ɔ:'gʌstɪn/ \subset Augustine

Corollary #35 /ɔ:'gʌstɪn/ \neq /'ɔ:gəsti:n/

²⁹⁹ The system of phonetic spelling employed in these examples is the system adopted by the *Shorter Oxford English Dictionary*, Fifth Edition.

Corollary #36 $\boxed{\text{Augustine}} \cap \text{Augustine} = \emptyset$

§7 THE BOX NOTATION FOR MENTIONING SIGNS WITHOUT REGARD TO WHETHER THEY ARE WRITTEN OR SPOKEN

Although written words are clearly distinct kinds of objects from spoken words, their semantic functions are the same.³⁰⁰ This allows one to think of a word as neither inherently a written object nor inherently a spoken one—it allows one to think of it as something other. But what? Clearly having the same semantic function is not sufficient for counting two objects as the same word, since different words often have the same semantic function.³⁰¹ Stating the identity conditions for words considered as either written or spoken is no thoughtless exercise. Fortunately, such a definition is not essential here. What is required is merely a device capable of mentioning words thus considered. For this purpose dashed box expressions will be employed.

ODL (2.4.35) man

Dashed box expressions designate a set of sign tokens, viz. the set that is the union of a solid black box expression and a corrugated box expression. Stated more briefly in set notation, $\text{man} = \boxed{\text{Man}} \cup \text{Man}$. In order to mention tokens of the set, objects similar to the following will be employed.

ODL (2.4.36) $\Pi \in \text{man}$

ODL (2.4.37) $\Sigma \in \text{man}$

³⁰⁰ As noted in Part III, §2 of this chapter, the ancients thought that written words were signs of spoken words. On this view, written words would have different semantic properties from spoken words.

³⁰¹ Consider, for example, dog and Hund , two different words with the same semantic functions.

ODL (2.4.38) $\forall \in \text{man}$
 ODL (2.4.39) $\exists \in \text{man}$

In order to reinforce the understanding of corrugated box expressions, the following list of corollaries is provided.

Corollary #37 $\text{Augustine} \subset \text{Augustine}$
 Corollary #38 $\text{Augustine} \subset \text{Augustine}$
 Corollary #39 $\text{Augustine} \subset \text{Augustine}$
 Corollary #40 $\text{Augustine} \subset \text{Augustine}$

§8 THE BOX NOTATION FOR MENTIONING THE MEANINGS OF SIGNS

The idea of developing a device for mentioning the meaning of a sign (as opposed to the sign itself, or the things denoted by the sign) was suggested by Garver (1965), and others.³⁰² For this purpose, slashed box expressions will be employed.

ODL (2.4.40) Man

The black slashed box expression on ODL (2.4.40) will be used to designate the set of concepts associated with $\forall \in \text{man}$.³⁰³ If a written propositional sign is placed within a slashed box, the resulting expression designates set of associated propositions. Likewise, the object on the following display line will be used to designate the set of concepts associated with $\forall \in \text{man}$.

ODL (2.4.41) Man

³⁰² Church, Searle, and others.

³⁰³ This means that the set of concepts associated with a slashed box is always defined by those associated with the written sign.

The individuation of meanings, whether concepts or propositions, is a notoriously difficult problem; and further difficulties are posed by the fact that a particular sign can be ambiguous, having more than one concept or proposition associated with it. At the other extreme, some have claimed that certain signs have no connotation, but are purely denotative.³⁰⁴ The development of a notation for mentioning meanings, by itself, is not sufficient for remedying these problems. Indeed, the problems surrounding meanings will need to be resolved before, or at the same time as, the development of an adequate notation for mentioning them precisely.

At the same time, it is hard to deny that many signs are associated with concepts and propositions. And it is possible to mention these concepts and propositions, whatever they may be, with the following objects.

ODL (2.4.42)	$\Pi \in$ Man
ODL (2.4.43)	$\Sigma \in$ Man
ODL (2.4.44)	$\forall \in$ Man
ODL (2.4.45)	$\exists \in$ Man
ODL (2.4.46)	$\Pi \in$ Man
ODL (2.4.47)	$\Sigma \in$ Man
ODL (2.4.48)	$\forall \in$ Man
ODL (2.4.49)	$\exists \in$ Man

³⁰⁴ See Haack 1978, pp. 56-73, for a further discussion of views about signs without connotation.

§9 ON THE STRENGTHS OF THIS SIGN NOTATION

This system of notation has several advantages over Frege's convention and the other conventions developed over the past century. The first strength is that it employs unfamiliar signs; and in this way, it avoids a good part of the philosophical debate surrounding the correct theory of quotation. The use of unfamiliar signs also prevents misinterpretation that can occur when familiar signs are used in a novel or deviant way.

Another strength of the notation is that it can draw finer distinctions among the signs to be mentioned than Frege's convention or any of the other devices can. Consider, for example, a few claims from Quine, which employ Frege's convention:

- (1) 'dreary' rhymes with 'weary'.³⁰⁵
 (2) 'Boston' has six letters.³⁰⁶

Since rhyming is a relation that holds only between sounds, only spoken words can stand in the rhyming relation. (1) can be distinguished by the box notation in the following way:

- (1') $\forall \epsilon$ dreary rhymes with $\forall \epsilon$ weary .
 (1'') $\forall \epsilon$ dreary rhymes with $\forall \epsilon$ weary .

(1') is false while (1'') is true. As for (2), it is obvious that only written words are composed of letters. Thus, (2') below is true, while (2'') is false.

- (2') $\forall \epsilon$ Boston has six letters .

³⁰⁵ Quine, *Methods of Logic*, p. 50.

³⁰⁶ Quine, *Mathematical Logic*, p. 24.

(2") $\forall \epsilon$ Boston has six letters.

A further strength of this notation is its systematic nature. Although many of the basic ideas of the system were already around, there has been no attempt at unifying all the ideas and distinctions into a single system with uniform expression.

The final advantage concerns iterability and recoverability. The system allows for these features while simultaneously avoiding the potential ambiguity that can arise concerning the scope of a mentioning expression.

§10 ON THE WEAKNESSES OF THIS SIGN NOTATION

Unlike devices that merely flank an expression, boxes completely enclose an expression. Enclosure over flanking offers benefits with regard to scope and potential ambiguity; but these advantages are slightly offset by the fact that box expressions cannot span several lines of text without being broken into pieces.

Other potential weakness of the system involve the learning and production requirements. The use of color made by the system presents certain obstacles to production, which, although not insurmountable in theory, can be practically problematic. As technology advances, however, this problem will become less noticeable (indeed, it is a less serious problem now than it was twenty years ago). As for the ease of learning to interpret the system, it should be noted that learning to decipher a new notation that employs unfamiliar signs always poses problems. In this particular case, however, the systematic use of

features like colors and shapes to mark similar distinctions in different cases helps alleviate some of these difficulties.

CHAPTER III ON THE NATURE OF SIGNS

PART I

TALES OF PHILOSOPHY (THE CONFUSIONS OVER SIGNS)

The scene: Mr. David Sewis "Sue-us" is on trial for damages to Mr. Roy Sorehandson. Mr. Sorehandson is suing Mr. David Sewis for pain and suffering, medical expenses, and loss of livelihood, caused by irreparable damage to Mr. Sorehandson's right hand. Mr. Sorehandson is also suing for the complete balance of a retail purchase.

[The prosecuting attorney, Keith HeNose (context specialist), calls Mr. Roy Sorehandson to the witness stand. The bailiff asks Mr. Sorehandson to raise his right hand and repeat the oath "I promise to tell the truth, the whole truth, and nothing but the truth." Mr. Sorehandson, holding his right hand lamely in the air, repeats the words of the bailiff and takes the stand]

Attorney HeNose: Mr. Sorehandson, can you please explain the series of events that led up to the severe damage incurred to your right hand?

Sorehandson: It all started one evening when I was browsing the internet, looking for a special anniversary gift for my wife. Let me add that at the time, I had just relocated to New Hampshire. As a result, I was a little short on cash. So I typed the words 'cheap special gift' into my web browser and that's how the link to Ontological Surplus, the business owned by Mr. David Sewis, came up on my screen. I double clicked on the link and it took me to the Ontological Surplus home page.

Attorney HeNose: Did you browse around on Mr. Sewis's website?

Sorehandson: Yes, and I found a picture of a rather nice diamond necklace that I thought would be a perfect gift for my wife. It said the necklace was \$150.00. Moreover, there was no sales tax, and shipping was free! So, I typed in my credit card number and my mailing information. There's nothing like shopping in the age of the internet.

Attorney HeNose: Did you ever receive the necklace that you paid for?

Sorehandson: No, I did not. A few days later a parcel arrived at my home, addressed from Ontological Surplus. I was excited to receive the package, but when I opened the box, it was empty! There was no diamond necklace, only a packing slip embedded in a bunch of Styrofoam nuggets!

Attorney HeNose: I see. And what did you do then?

Sorehandson: I called the 1-800 number of Ontological Surplus, but the operator said the number was no longer in service. Quite concerned, I got in my car and drove for several hours until I reached Boston, where Mr. Sewis operates his retail store. When I entered the store, I was surprised to find that all the shelves and display cabinets were empty. I

went up to the counter where I found Mr. Sewis tending the cash register. I explained my situation to him. I explained how I paid for a diamond necklace, but received only a box filled with a packing receipt and Styrofoam nuggets.

Attorney HeNose: And how did Mr. Sewis respond to your complaint?

Sorehandson: He told me that I received exactly what I ordered, since I ordered a *possible diamond necklace* as opposed to an actual one. He then brought me over to his computer and proceeded to show me that the diamond necklace I ordered was on the "possible objects" page of the website.

Attorney HeNose: A possible object?! How did you respond when you found out you had purchased a possible object?

Sorehandson: I asked him what a possible object was. He explained that possible objects are more or less just like actual objects except for the fact that they lack the property of existence in the actual world. He reassured me, however, that the necklace I purchased had the property of existence in some *near* possible world. Moreover, he reassured me that I got a great value, taking into consideration the price of the diamond, its weight, its clarity, its cut, its color, and the nearness of the possible world. He insisted that the nearness of the possible world is the most important factor when it comes to calculating the value of possible diamonds. Then he attempted to explain what he meant by the *nearness* of possible worlds, but it sounded like a crude sales pitch to me.

Attorney HeNose: Did he say anything else?

Sorehandson: Yes. I thought his sales tactics would never end. He then tried another method of convincing me that my purchase was a sound investment. He explained how certain Ivy League philosophers were on the verge of discovering a proof that we live in an S5 universe. Once the proof was complete, my *merely possible diamond necklace* would automatically be upgraded to a *necessarily possible diamond necklace*. According to David Sewis, the value of the necklace would go through the roof. At this point, I started to suspect some serious fraud.

Attorney HeNose: What happened then?

Sorehandson: I mustered up my most incredulous stare and I laid it on him hard and heavy. I assured Mr. Sewis that I did not want a necklace that exists in some possible world. I told him I wanted something that exists in *THIS* world.

Attorney HeNose: And how did Mr. Sewis respond?

Sorehandson: Sensing my dissatisfaction, he tried yet another method of reconciling me to my purchase. He walked over to the cash register where he kept a manila folder. He flipped through the contents of the folder until he found a piece of paper, which he then

handed to me. On that piece of paper was a story about a possible diamond necklace, a story allegedly written by Mr. Sewis himself.

[Attorney HeNose walks over to his own file folder and picks out a piece of paper and hands it to Sorehandson]

Attorney HeNose: Would you say that this is a faithful copy of the story that Mr. Sewis handed you?

[Sorehandson's eyes move quickly across the paper]

Sorehandson: Yes. That is the story he handed me.

[Attorney HeNose takes the paper from Mr. Sorehandson and brings it over to the Honorable Judge X]

Attorney HeNose: Your Honor, the prosecution would like to submit this document to the court as evidence.

[Attorney HeNose hands the following document to the Judge]

THE STORY OF A POSSIBLE NECKLACE

BY DAVID SEWIS

Once upon a time there was a possible diamond necklace owned by the Greek Goddess Aphrodite. But Apollo shootafar stole it from her and gave it to the mere mortal Helen. This angered the mighty Zeus. He took the necklace and threw it across the skies, its diamond sparkling like lightning in its brilliance as it flew. But then it fell to the ground with a thundering crash!! The possible necklace was driven down into the depths of Hades. And thus it was lost to both gods and men for thousands of years.

It was discovered once again, by Wiglaf, Beowulf's most faithful retainer, after he and Beowulf had slain a fire-breathing dragon and pillaged its lair. The necklace became quite the heirloom, and was considered a great prize, to be worn around many famous necks. Although she did not deserve it, King Arthur gave it to Guinevere; and some scholars hypothesize that she was thinking about the necklace during her act of betrayal. Then the necklace was stolen from Guinevere, and Sherlock Holmes was put on the case. He recovered the possible necklace in almost no time at all. The possible diamond necklace presently resides in the land of Oz. There it is encased in a secure vault made of Reardon steel. It is guarded day and night by the wizard himself, who lives happily ever after.

The End

Attorney HeNose: Mr. Sorehandson, what did Mr. Sewis say after he handed you the story of the possible necklace?

Sorehandson: He told me that I was now the proud owner of a *fictional possible diamond necklace*. He said that he would throw this necklace into the deal with no additional cost to me.

Attorney HeNose: A fictional possible diamond necklace!? What is that?

Sorehandson: According to Mr. Sewis, fictional possible objects are a bit more ontologically robust than mere possible objects. Unlike mere possible objects (or even necessarily possible objects for that matter), fictional possible objects have the property of existence in *this* world. He then proceeded to explain the ontological status of fictional entities in greater detail. He explained that although my fictional possible diamond necklace exists in this world, it depended in a rigidly historical way on its author. He then suggested that I make several Xerox copies of the story, and place them in a safety deposit box at my local bank. According to Mr. Sewis, I had in my hands the only copy of the story, upon which the existence of the fictional possible necklace was generically constantly dependent. He explained that if the document should by some chance be destroyed before any copies were made, the fictional possible necklace would be destroyed along with it.

Attorney HeNose: Did he say anything else?

Sorehandson: There was some kind of caveat about the story being stored in his or my own memory, but I interrupted him before he could finish his sales pitch. I asked him whether my \$150.00 bought me the copyright to the story.

Attorney HeNose: How did Mr. Sewis reply?

Sorehandson: He explained that I owned the possible diamond necklace and the fictional possible diamond necklace, but the copyright to the story belonged to him.

Attorney HeNose: What did you say?

Sorehandson: I told Mr. Sewis I wanted to return the possible necklace that I purchased. I told him I wanted my money back.

Attorney HeNose: And how did Mr. Sewis respond to your demands?

Sorehandson: He told me that Ontological Surplus has a restocking fee of 20% on all returned merchandise!

[The faces of the jury members express surprise, bordering on disbelief]

Attorney HeNose: How did you react?

Roy. S: I was furious! I told him I would see him in court! And then I stormed out of the store, slamming the door as I walked out. Unfortunately, the shock from the slamming door reverberated throughout the empty store, causing the sign on the façade of the building - which, I might add, was negligently secured - to fall off just as I walked beneath it. The massive sign, which read "Ontological Surplus," came crashing down, knocked me over, and crushed my right hand. Due to this incident, I can no longer use my right hand, which is essential for my work; I am a writer. Now, I can neither write nor type with any proficiency. My career's ruined.

Attorney HeNose: Thank you Mr. Sorehandson. I have no further questions.

[Attorney HeNose returns to his seat and the defense attorney approaches the witness stand]

Defense Attorney: Mr. Sorehandson, I must admit that your story about the possible necklace is quite entertaining. But while you were telling your story, I noticed that you never mentioned the fact that, ultimately, you gave the possible necklace to your wife on your anniversary. You never said a word about that. You did gift wrap the box and present it to your wife over dinner, correct?

Sorehandson: Um.

Defense Attorney: Furthermore, wasn't your wife surprised by the exotic gift? Didn't she say something like, "This necklace you bought me, it's out-of-this-world!"

Sorehandson: I must admit, those were precisely her words; but she said them with a rising intonation so as to express a question as opposed to an exclamation. They were not words of delight.

[The defense attorney turns to the jury]

Defense Attorney: Ladies and Gentlemen of the jury, knowing these circumstances, how can Mr. Sorehandson expect a full refund for his purchase? Indeed, how can he rightfully expect any refund at all? I think it's clear that Mr. Sorehandson's plea for a full refund must be denied. But, the refund is only a minor issue. Let us move on to the more serious charges.

[The defense attorney turns back to Sorehandson]

Defense Attorney: Mr. Sorehandson, do you know anything about Munchausen's disease?

Sorehandson: Yes, I am familiar with that disease.

Defense Attorney: Very good. Suppose a man is faking that he has a damaged right hand. Furthermore, suppose his motivation for faking is two-fold:

- (i) he enjoys the sympathy he receives from others
- (ii) he sees this faking as a solution to his financial problems.

According to your understanding of Munchausen's disease, would this man have the disease?

Sorehandson: On account of the first condition, I would be forced to say he does have the disease.

Defense Attorney: Suppose that a man did have Munchausen's disease. Would his testimony about his reputed disabilities be credible?

Sorehandson: No, I suppose that such testimony would not be credible.

Defense Attorney: A-ha! Suppose, Mr. Sorehandson, that you in fact have Munchausen's disease. Could we conclude that your testimony here today is not credible?

Sorehandson: Yes, I guess that would follow.

Defense Attorney: But one cannot testify that one's testimony is not credible, for if it is not credible, then it is, and if it is, then it is not! Therefore, if we supposed that you had Munchausen's disease, a paradox would ensue. Thus, we can conclude that you do not have it. Moreover, if you are faking the injury to your right hand, it must be in full awareness of the financial benefit you seek from Mr. David Sewis.

Attorney HeNose: I object, your Honor!

The Honorable Judge X: Sustained.

Defense Attorney: Mr. Sorehandson, you are a man who enjoys a good paradox. Isn't that correct?

Sorehandson: Yes; I have been known to write about philosophical paradoxes.

Defense Attorney: Indeed. Would it be wrong to say that you make your living by raising paradoxes and trying to confuse people? Isn't that right, Mr. Sorehandson?

Sorehandson: If you are asking whether I have profited from paradoxes, I would have to answer that question with a "yes".

Defense Attorney: I see. And aren't the charges that you have filed against Mr. David Sewis nothing more than another attempt to profit from your skill at using paradoxes to take advantage of the credulity of others?

Attorney HeNose: I object, your honor!

The Honorable Judge X: Sustained.

Defense Attorney: Have you ever heard of the mental illness called Paradoxia?

Sorehandson: No, I have never [*Sorehandson stops in mid-sentence*] I mean, yes; I have heard of it.

Defense Attorney: [*addressing the members of the jury*]

Well, one of the primary symptoms of a man with Paradoxia is his denial that he has ever heard of it. But when the disease reaches an advanced stage - which, incidentally, is called Meta-paradoxia - the diseased mind attempts to hide some of the symptoms. The other primary symptoms include an unusual preoccupation with paradoxes, and the attempt to fake an honest living through the manipulation of paradoxes. Paradoxically, a person in the most advanced stages of Meta-paradoxia manifests no symptoms of paradoxia at all. Indeed, the only symptom of full-blown Meta-paradoxia is the failure to manifest any symptoms of paradoxia. However, there is a third stage of the disease called Meta-meta-paradoxia, where the diseased mind, recognizing that it has Meta-paradoxia, begins to fake symptoms of Paradoxia - symptoms that it really has and that it hides - in order to hide the symptom of Meta-paradoxia.

[*turning back to Mr. Sorehandson*]

Mr. Sorehandson, isn't it true that you claim your hand was damaged when a massive sign fell off the façade of Mr. Sewis's store?

Sorehandson: That is correct. That's how my hand was permanently damaged.

Defense Attorney: This story is preposterous! It is just another paradox. Or so I shall attempt to demonstrate. The Defense would like to call expert witness Dr. John Deely to the stand.

[*Roy Sorehandson leaves the stand and Dr. John Deely is sworn in*]

Defense Attorney: Dr. Deely, you are an expert on signs, is this correct?

Deely: Yes, I have been studying signs and semiosis for the greater part of my academic career.

Defense Attorney: Did you write a book entitled *The Human Use of Signs or Elements of Anthroposemiosis*?

Deely: Yes, I did.

Defense Attorney: Very good. I happen to have a copy of your book here. Will you please read for the court, paragraph 32 on page 11 of your book.

[*handing the book to Deely*]

Deely: Sure. " The first and most radical misconception to be addressed is the notion that there are other things than signs--as if signs were merely items within our experience that have their place among other things. For, when we speak from the strict standpoint of experience (which of course we must, in all contexts where we hope to avoid delusion), the sign is not by any means one thing among many others: the sign is not any thing at all, nor is it even first of all a distinct class of objects. As a type of object or objective structure contrasting with other objective structures, the sign is singularly unstable and derivative, precisely because signs are not objects at all. Signs are presupposed to there so much as being whatever objects there are in the content of experience in general and at any given time".

Defense Attorney: Thank you. Now, didn't you just say, "signs are not objects"?

Deely: Well, yes; that is my view.

Defense Attorney: Are signs the kind of things that have mass? Can they be massive?

Deely: Certainly not.

Defense Attorney: And yet, Mr. Sorehandson claims that his hand was crushed by a massive sign! Is there any way, according to your expert knowledge of signs, Dr. Deely, that a sign could have been the cause of Mr. Sorehandson's crushed hand?

Deely: No. According to my idea of signs, that could never happen.

Defense Attorney: Thank you, Dr. Deely. I have no further questions for this witness.

Attorney HeNose: Dr. Deely, I must say that I am a little puzzled about your expert view on signs. Do you think that there are such things as signs or not? Didn't you say that signs are nothing at all? What does that mean?

Deely: As I said in my book--by the way, I have a new book out entitled *Four Ages of Understanding*. You may obtain the book, if you wish, through Amazon.com or through Barnes and Noble; if you mention "UTP Marketing Code 1025" you can get a 20% discount direct from UTP at 1-800-565-9523. But, as I was saying, in my earlier book, paragraph 31, page 11, "There are signs, and there are other things besides: things which are unknown to us at the moment and perhaps for all our individual lives--things that existed before us and other things that will exist after us; things that exist only as a result of our social interactions, like governments and flags, and things that exist within our round of interactions - like daytime and night - but without being produced by precisely those interactions, or at least not insofar as they are "ours", i.e., springing from within us in some primary sense."

Attorney HeNose: The prosecution is finished with the witness.

Defense Attorney: I would like to call expert witness Umberto Eco to the witness stand.

[Deely steps down and Eco is sworn in]

Defense Attorney: Dr. Eco you wrote a book entitled *Theory of Semiotics*. Isn't that so?

Eco: Yes, I did.

Defense Attorney: In that book, you offer a theory of signs. Correct?

Eco: Yes, it is one of my many achievements.

Defense Attorney: I have a copy of your book here. Would you mind reading the underlined passages on pages 48-49 for us?

Eco: I will do anything to facilitate justice. "A sign is always an element of an *expression plane* conventionally correlated to one (or several) elements of a *content plane*. Every time there is a correlation of this kind, recognized by a human society, there is a sign. This assumption entails some consequences: a) *a sign is not a physical entity*, the physical entity being at most a concrete occurrence of the expressive pertinent element; b) *a sign is not a fixed semiotic entity* but rather the meeting ground for independent elements (coming from different systems of two different planes and meeting on the basis of a coding correlation). Properly speaking, there are not signs, but only *sign-functions*."

Defense Attorney: Thank you Dr. Eco. It seems that the authorities on signs agree on these matters. Like Dr. Deely, you deny that signs are physical entities.

Eco: That is correct.

Defense Attorney: In other words, according to your expert opinion, there is no way that a sign could have fallen off the façade of Mr. Sewis's building and crushed Mr. Sorehandson's hand, thereby causing him pain and suffering and disabling him from making a living, since signs, in your expert opinion, are not physical entities. Signs have no mass. A sign cannot be massive. A sign cannot crush a human hand. Isn't that correct, Dr. Eco?

Eco: According to my view, there is surely something rather paradoxical about Mr. Sorehandson's story.

Defense Attorney: I should say so! What we have here is a case concerning a known paradox monger--a sick, sick man. We have a man who is flooding the courts with his idle riddles, hoping to make a dishonest living off an honest business man like Mr. David Sewis.

[the defense attorney pauses and stares deeply for a moment into the eyes of the members of the jury]

Defense Attorney: I have no further questions.

Attorney HeNose: Dr. Eco, your theory of signs is a very complicated affair. I wonder what you meant when you said, "there are not any signs"? How can a man can make a living studying signs if there aren't any? We have heard a lot about paradoxes from the defense, but if there is indeed any paradox lurking about, I should say here it is! In this court room today we have two experts on signs, two men who make a comfortable living studying signs; one says, "signs are nothing at all", while the other says, "properly speaking there are not signs." Are you two, by any chance, associated with the dirty dealings of Mr. David Sewis? Are you related in any way to the organization known as Ontological Surplus?

Defense Attorney: I object!

The Honorable Judge X: Overruled. The witness will answer the question.

Eco: I cannot speak for Dr. Deely. As for myself, I have shopped at Ontological Surplus in the past, and I have purchased a few things.

Attorney HeNose: Have you ever received income from Ontological Surplus?

Eco: I assure you that I earn quite enough from my publications. I have no need to supplement my income through dealings with a retail business.

Attorney HeNose: Please answer "yes" or "no". Have you ever received any income from Ontological Surplus?

Eco: No. I have never received any income from Ontological Surplus.

Attorney HeNose: Have you ever *pretended* to sell any signs - signs that are nothing at all - to Ontological Surplus?

Eco: No.

Attorney HeNose: Dr. Eco, when you say, "there are not signs" and, "a sign is not a physical entity" are you denying that there are physical objects hanging on the façades of buildings--objects which are used to signify the name and location of a business? Tell me honestly, are you denying that such objects exist, or are you merely denying that those objects are signs?

Eco: I am not denying that such physical objects exist. I only deny that they are signs.

Attorney HeNose: I have here my own copy of your book. Will you kindly read the underlined passages on page 4-5, for the people of the jury.

[HeNose hands Eco the book]

Eco: "Even if the theory of codes and the theory of sign production succeed in eliminating the naïve and non-relational notion of 'sign', this notion appears to be so suitable to ordinary language and to colloquial semiotic discussions as well, that it should not be completely abandoned."

Attorney HeNose: Dr. Eco, how can you honestly say that Mr. Sorehandson's story is paradoxical, when you are quite aware of the colloquial usage of the term 'sign'? Isn't it misleading to pin the paradox on Mr. Sorehandson when in fact the paradox is the result of your own philosophical antics?

Eco: I have not tried to mislead the court. I have only answered the attorneys' questions to the best of my ability.

Attorney HeNose: Dr. Eco, in your considered opinion, is there anything inconsistent about Mr. Sorehandson's story? Isn't it quite possible that Mr. Sorehandson's hand was permanently damaged by the Ontological Surplus sign? Here I use the word 'sign' in the colloquial sense.

Eco: If Mr. Sorehandson is using the term 'sign' according to ordinary language, I must say that there is nothing inconsistent, or even unlikely, about his story.

Attorney HeNose: Thank you for your testimony Dr. Eco. The prosecution would now like to call a rebuttal witness, Mr. Len Olsen, to the stand.

[Eco steps down. Olsen is sworn in and takes the stand]

Attorney HeNose: Mr. Olsen, I understand that you are an apprentice in this business of signs. Would you say that is a fair account of the way things stand?

Olsen: I would like to say so; but I am hesitant to agree.

Attorney HeNose: Why is that?

Olsen: Well, many philosophers think that there is no such thing as **the** way things stand. They adamantly maintain that there is no way the world really is. Indeed, one of my mentors—a mentor that I admire very much—attempted to plant this relativist idea into my head, time and time again. But the idea never took root; and after so many attempts, I was judged to be in-educable. I must admit, I was somewhat distraught to hear him say so. My only consolation was my inability to believe that he really believed that that was the way things were. Perhaps you can now understand my hesitation.

Attorney HeNose: Don't be silly. Consider the context in which our discussion is taking place. We are in a court of law, not a philosophy seminar!

Olsen: Are you saying that when I take the stand, I don't have to worry about being a BIV any more?

Attorney HeNose: A BIV? What's the BIV? I have never heard of that organization. Keep in mind, Mr. Olsen, I am a pretty connected man, and I have never heard of any BIV. Is this some kind of intelligence agency? Do you work for the BIV?

Olsen: Well . . . the BIV is presumably intelligent and has agency. But it is no intelligence agency. One becomes acquainted with the BIV through taking a seminar on the theory of knowledge.

Attorney HeNose: What does the BIV know? Does it have any information on Mr. Sorehandson, or Mr. Sewis, for example?

Olsen: It's really not the kind of organization you are thinking of. The strange thing about a BIV is that it has no reason to believe it's a BIV. In fact, BIV's don't know much at all.

Attorney HeNose: Now it sounds as if you're giving us paradoxes, Mr. Olsen. According your story, you become acquainted with the BIV through taking a seminar on the theory of knowledge; and yet the BIV doesn't seem to know anything at all. The members do not even seem to know that they are members! How strange.

Olsen: Well, life does often seem strange. But perhaps your questions would cease if you realized that 'BIV' is an acronym for 'brain-in-a-vat'. When you said that this is not a philosophy seminar, and that in this context I needn't be so cautious, I thought that for the first time in a long time, I could stop worrying that I was a brain-in-a-vat.

Attorney HeNose: You can stop worrying, because I can assure you that you are not a brain-in-a-vat. But are you certain that the BIV is not really a terrorist organization?

Olsen: That's a tricky question. The idea of the BIV can instill terror in an awakening mind. But it is not the kind of thing that would destroy the human race by unleashing smallpox. If it annihilates the external world, it does so without too much pain and suffering. One second the world is there, the next second it is gone.

Attorney HeNose: Are you claiming the BIV has a nuclear arsenal?

Olsen: No. Like I said, 'BIV' is an acronym for a 'brain-in-a-vat'! Let me ask you, how can I know that I am not a brain-in-a-vat?

Attorney HeNose: This is a court of law, Mr. Olsen! Philosophical hypotheses like that have no currency in this context.

Olsen: Really? I must say that this contextualism is quite a relief. Does it also rule out the possibility that I am just a character in fictional story? If so, I am inclined to think that we should hold philosophy seminars here in the court! Then again, Socrates already tried that—we all know what happened to him.

Attorney HeNose: The courts are filled with enough nonsense. But let's get to the point. Do you know anything about signs?

[Olsen pauses for ten seconds]

Olsen: Considering the context of your question and the epistemic standards that are in effect, I guess I should say that I do know a few things about signs.

Attorney HeNose: Tell us, then, Mr. Olsen . . . What do you know about signs?

Olsen: The first thing I would say about signs is that in ordinary language the word 'sign' is ambiguous. Its kind of like the word 'truck'.

Attorney HeNose: Is the word 'truck' ambiguous in ordinary language?

Olsen: I should say so. But that's a story for a different court scene.

Attorney HeNose: Mr. Olsen, according to certain documents that I have obtained from both the CIA and the FBI, you have been working on your own understanding of signs. Isn't that correct?

Olsen: I was wondering how I got subpoenaed. I am quite honored to learn that someone has taken an interest in my work, even if they are not philosophers. Philosophers hardly ever see the nose on their own face, even though it is always in their visual field—if you Nose what I mean. Both Aristotle and Wittgenstein said something like this once. But I suppose these government people are shrewd enough to see the potential consequences of a theory of notation. Imagine if the terrorists should get hold of some secret notation by which to communicate and solve problems. That would pose a theory threat to democracy, buy-one-get-one-freedom, and the capitalist way.

Attorney HeNose: Those are some interesting thoughts, Mr. Olsen. Are you by any chance a member of any communist organizations?!!

Olsen: No way. I am for the complete dissolution of society until people can learn how to be decent and live with dignity. Keep in mind, this is only an ideal. I realize that human nature is an animal nature.

Attorney HeNose: Mr. Olsen, I did not call you here today to have you tell the court about your views on politics, economics, or ethics. I called you here today to tell us about your understanding of signs. If I understand correctly, you have attempted to resolve this confusion about signs.

Olsen: Well, I am attempting to write a dissertation, and part of it deals precisely with this problem.

Attorney HeNose: Would you be so kind as to explain your views to the court?

Olsen: I fear my account will bore the heads of the ladies and gentlemen of the jury. I fear it will go in one ear and out through the other.

Attorney HeNose: That is very funny, Mr. Olsen. But I did not call you here to insult or amuse anyone. Now will you please explain to us your understanding of signs?

Olsen: No—I am quite serious. The account is long and technical. It is not the kind of thing one explains in a few words.

Attorney HeNose: Don't worry, we'll listen.

Olsen: Okay. But do you think I can get a chalk board and some chalk? These kinds of things are difficult to convey through oral discourse. Some times you have to write things down; other times you need to draw diagrams and charts. People often fail to realize the important differences between writing and speaking. But I think everyone will admit that it is very difficult to speak a diagram.

Attorney HeNose: Can we please get a chalkboard for Mr. Olsen?

[a chalkboard is brought into the court room]

Olsen: Thank you. What I am about to explain is part of my dissertation on the theory of notation. Keep in mind that the dissertation is not yet completed, and it has not been approved by anyone. Due to a lack of funding, I am not certain I shall ever complete it; for my time is now consumed by bagging groceries at the local food store. But those matters aside, let me warn you that what I am about to say is bit rough, dry, and technical. Moreover, I haven't written anything that precedes it, for I am still searching for the right words to introduce this subject. I fear I'll never find them, for I am looking too hard. Perhaps they will fall upon me when I least expect it. As for now, I can only hope that I will find these words—which are but signs—that can remove these stubborn obstacles. Words which, in the end, can open a few shades so that the light of nature can shine in on the confusion over signs.

PART II
ON THE ONTOLOGICAL STATUS OF SIGNS

§1 OVERVIEW

What kind of thing is a sign? Is a sign a physical object? Is it a relation? It is surprising that these questions are a source of dispute; for no two kinds of thing seem less likely to be confused than a physical object and a relation. Nevertheless, there has been much confusion about the ontological status of signs.

The common sense idea of a sign—the idea derived from the use of $\forall \epsilon$ sign in ordinary discourse—suggests that signs are objects. On the other hand, philosophers have often held that signs are relations.³⁰⁷ We must now try to understand this peculiar disagreement between philosophy and common sense.

To help resolve the ontological puzzle about signs, it will be helpful to examine the ontological status of grandfathers—to which signs are in many ways ontologically similar.³⁰⁸

§2 THE ONTOLOGICAL STATUS OF GRANDFATHERS

Grandfathers exist. No one should doubt that. Now we ask: What kind of thing is a grandfather? Are grandfathers objects? Are they relations? We could, at this point, raise issues of personal identity or issues concerning the nature of mind, body, and soul; but let's keep things simpler than that. Let us begin with the simple case of Smith, who is a grandfather. More specifically, let us begin by examining the structure of:

³⁰⁷Ferdinand de Saussure, Louis Hjelmslev and Umberto Eco are just a few of the philosophers and linguists who have endorsed the relational view.

³⁰⁸ There are also important differences, but these are not immediately important.

(1) ☞ Smith is a grandfather. ☞ .

(1) is a perfectly acceptable sentence by the standards of ordinary language.³⁰⁹ A logical analysis of (1) will reveal that Smith is the subject of the sentence, and that the property of being a grandfather is predicated of Smith. If we represent (1) in the standard notation of predicate logic, its logical form is made explicit. We get:

(2) ☞ Gs ☞ .³¹⁰

In (2), the capital letter stands for the property of being a grandfather; the lower case letter stands for Smith. If we step back for a moment, it seems that this commits us to an ontology of individuals and properties. And now we jump to the ontological conclusion that becoming a grandfather is something that occurs when an individual (a substance) comes to possess a certain property (an attribute). This reasoning, is dangerous and invites all kinds of error; but let's follow it through. This kind of analysis does not clearly settle the original ontological question. Are grandfathers objects? Well, it would seem that Smith could be counted ontologically as a physical object. Moreover, Smith is a grandfather. How about the following reasoning?

P'	Smith is a grandfather.
P''	<u>Smith is a physical object.</u>
C	A grandfather is a physical object.

This argument involves certain logical subtleties in need of clarification; but I shall relegate the detailed analysis of this reasoning to a footnote.³¹¹ Instead, let's consider why it is so unnatural to conclude the following from an analysis of (2):

³⁰⁹ Here we use ☞ (1) ☞ as an abbreviation for ☞ Smith is a grandfather. ☞ .

³¹⁰ W.V. Quine, of course, banishes individual constants from his canonical notation, and chooses to use only variables and quantifiers. For Quine, (1) would be translated with $\exists x(Sx \& Gx)$, where $\exists x[Sx]$ stands for something like $\exists x$ smithizes or $\exists x$ is smithy. If we were to adopt this approach, the following analysis would have to be slightly different, although the conclusion would be much the same.

C Grandfathers are properties.

It is highly unlikely that anyone would draw such a conclusion. What is even less likely is the following reasoning:

P' A Grandfather exists only insofar as an individual stands in *the relation of possession to the property G.*
 C Grandfathers are relations.

Although this reasoning is absurd, it has the same flavor as some of the philosophical reasoning about the ontological status of signs. This may not be apparent, however; for as things stand, we have merely scratched the linguistic surface of a much deeper ontological problem.

§3 RELATIVE PROPERTIES

With a cup of ordinary language, two teaspoons of standard logical doctrine, and dash of metaphysics, we cooked up the idea that there is such a thing as the property of being a grandfather. This property is what the token of $\text{☞}G\text{☜}$ in (2) stood for. But whether or not there is any such property at all, one thing is certain:

(T1) The property of being a grandfather is not an *intrinsic property*.

Moreover:

(T2) If there *is* a property of being a grandfather, it is a *relative property*.

We must now flesh out what these theses mean.

³¹¹ The statements in this argument are ambiguous. If we assume that $\exists^e[\text{is}]$ in the premises and the conclusion signifies predication and not identity, then whether the reasoning is valid depends upon whether the conclusion is read as equivalent to either: (i) All grandfathers are physical objects, or (ii) Some grandfathers are physical objects. If (i) is the conclusion, the reasoning is invalid. If (ii) is the conclusion, then the reasoning is valid, provided Smith exists, but the conclusion is too weak for our purposes.

D3.1 A property p is intrinsic \equiv an individual could possess p in the absence of all other individuals.

An example of intrinsic property is having mass. Presumably, an individual can have mass regardless of whether any other individual exists or not.

D3.2 A property p is relative \equiv an individual's possession of p depends on whether or not some other individual(s) exists.³¹²

An example of a relative property is the property of being married. Presumably an individual cannot be married if no other individual exists. Likewise, a person can't be a grandfather if no other individual exists. That is why the property of being a grandfather (if there is such a thing) is a relative property. This is also, perhaps, a good time to propose the following two theses:

- (T3) The property of being a sign is not an *intrinsic property*.
- (T4) If there *is* a property of being a sign, it is a *relative property*.

So far, so good. But now we must look more closely at the nature of relative properties.

§4 THE ONTOLOGICAL STATUS OF RELATIVE PROPERTIES

One method of roughly classifying things ontologically is according to the following categories:

- Individuals (Substances)
- Properties (Attributes)
- Relations³¹³

³¹² With these two definitions, the distinction between intrinsic and relative properties is thus roughly drawn. Of course, there is room for more subtle distinctions when we consider the signification of \exists^e [in the absence] and \exists^e [depends upon] in the first and second definitions, respectively. These finer distinctions will be partly flushed out in what follows. A more thorough treatment of the nature of dependence can be found in the second chapter of Amie Thomasson's *Fiction and Metaphysics* and in Part IV of the present chapter.

³¹³ Those who are concerned with actions and events may think some important categories have been left out of this categorization. But whether these categories are added here is more or less irrelevant to the central point, so I leave them out.

These categories are reflected in (or perhaps are mere reflections of) the grammar of some natural languages. We find the correlation more obviously in the grammar of our logical notation:

Individuals	(marked by individual constants and bound variables)
Properties	(marked by monadic predicates)
Relations	(marked by dyadic predicates, triadic predicates, etc..)

But when we consider relative properties, we find that they do not fit very neatly into this scheme. On one hand, they look as if they belong in the category of property, because they can be expressed by a monadic predicate; on the other hand, they look as if they belong in the category of relation, because they involve more than one individual. On a third hand (and nobody has three hands) perhaps they belong to a category all of their own. Those who admire ontological surplus are likely to admit relative properties into the picture, creating a fuller set of categories that looks like this:

Individuals	(marked by individual constants and bound variables)
Intrinsic Properties	(marked by monadic predicates)
Relative properties	(marked by monadic predicates)
Relations	(marked by dyadic predicates, triadic predicates, etc..)

But I am not sure whether there really are such things as relative properties as distinct from relations. Moreover, it is not obvious that the belief in relative properties is supported by anything more than the grammar of ordinary language (which logical notation subsequently accommodates). One way to clarify this issue is to ascend semantically, stepping away from properties and relations, and dealing instead only with predicates. For in the case of predicates, some fine distinctions can be made without expanding one's ontology so as to include things that do not exist.

§5 VARIETIES OF PREDICATES

One method of classifying predicates is according to their *adicy*, i.e., to the number of logical subject terms they require to create a complete statement. Consider the following predicates:

- (3) φ is a grandfather φ ,
- (4) φ is taller than φ ,
- (5) φ is between φ .

We say that (3) is a monadic predicate because the sentential function:

- (6) φx is a grandfather φ ,

gives us an acceptable sentence in ordinary language when variable x is replaced by an appropriate logical subject term. For example, replacing φx with φ Smith φ in (6), we get:

- (7) φ Smith is a grandfather φ .

(4), on the other hand, is a dyadic predicate because it requires two logical subject terms to make an acceptable sentence.

- (8) φ Smith is taller than φ ,

strikes the ordinary reader as incomplete in a way that (7) does not. But if we write

- (9) φ Smith is taller than Jones φ ,

things seem complete and in order. Thus, we say that (4) is a dyadic predicate because the sentential function:

- (10) φx is taller than y φ ,

gives us a complete statement in ordinary language when φx and φy are replaced by appropriate logical subject terms. Finally, the predicate in (5) requires three logical subject terms and as a result we say that (5) is a triadic predicate. Neither

- (11) λx is between λ ,
 nor (12) λx is between $y \lambda$,

are sentential functions.

- (13) λx is between y and $z \lambda$

is a sentential function, because it gives us an acceptable sentence in ordinary language when $\lambda x \lambda$, $\lambda y \lambda$ and $\lambda z \lambda$ are replaced by appropriate logical subject terms.

However, ordinary language and our linguistic intuitions play a prominent role in determining the adicity of predicates.

Beyond adicity, predicates can be classified according to their *onticity*. The onticity of a predicate Φ is determined by the minimal number of individuals that must exist in order for Φ to be instantiated.³¹⁴ Consider the following predicates.

- (14) λ has mass λ ,
 (15) λ is married λ .

(14) and (15) are both monadic predicates, but whereas (14) requires only the existence of one individual for its instantiation, (15) requires at least two. Thus, we can say that (14) is an *ontic-1 predicate* while (15) is an *ontic-2 predicate*. More specifically, (14) is an ontic-1 monadic predicate whereas (15) is an ontic-2 monadic predicate. A predicate that requires at least three individuals for its instantiation is an ontic-3 predicate, etcetera.

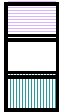


With the distinctions between adicity and onticity in place, we have the basis for a new classification of predicates. Each box in the following chart denotes a class of predicates:

³¹⁴ A predicate is considered to be instantiated if and only if there exists something to which that predicate applies. The onticity of a predicate, however, does not take into consideration any additional individuals required (if any are required) for the existence of the semantic relationship between the predicate and the thing which instantiates it. Thus, a more precise formulation of the onticity of a predicate is: The onticity of a predicate Φ is determined by the minimal number of individuals that must exist in order for there to exist something of the type to which Φ would normally apply.

	Adicy = 1	Adicy = 2	Adicy = 3	Adicy = 4	...	Adicy = n
Onticity = 1	ontic-1 monadic	ontic-1 dyadic	ontic-1 triadic	ontic-1 quadratic	...	ontic-1 n-adic
Onticity = 2	ontic-2 monadic	ontic-2 dyadic	ontic-2 triadic	ontic-2 quadratic	...	ontic-2 n-adic
Onticity = 3	ontic-3 monadic	ontic-3 dyadic	ontic-3 triadic	ontic-3 quadratic	...	ontic-3 n-adic
Onticity = 4	ontic-4 monadic	ontic-4 dyadic	ontic-4 triadic	ontic-4 quadratic	...	ontic-4 n-adic
	⋮	⋮	⋮	⋮	⋮	⋮
Onticity = n	ontic-n monadic ³¹⁵	ontic-n Dyadic	ontic-n triadic	ontic-n quadratic	...	ontic-n n-adic

Every predicate belongs in one of these categories. Moreover, predicates can be grouped into three general classes:

	Adicy = 1	Adicy = 2	Adicy = 3	Adicy = 4	...	Adicy = n
Onticity = 1	ontic-1 monadic	ontic-1 dyadic	ontic-1 triadic	ontic-1 quadratic	...	ontic-1 n-adic
Onticity = 2	ontic-2 monadic	ontic-2 dyadic	ontic-2 triadic	ontic-2 quadratic	...	ontic-2 n-adic
Onticity = 3	ontic-3 monadic	ontic-3 dyadic	ontic-3 triadic	ontic-3 quadratic	...	ontic-3 n-adic
Onticity = 4	ontic-4 monadic	ontic-4 dyadic	ontic-4 triadic	ontic-4 quadratic	...	ontic-4 n-adic
	⋮	⋮	⋮	⋮	⋮	⋮
Onticity = n	ontic-n monadic	ontic-n dyadic	ontic-n triadic	ontic-n quadratic	...	ontic-n n-adic

Key:  **Ontically inflated predicates** (adicy is greater than onticity)
 **Ontically balanced predicates** (adicy is equal to onticity)
 **Ontically compressed predicates** (adicy is less than onticity)

An example of an ontically compressed predicate is any ontic-2 monadic predicate that is a member of is married. An example of an ontically balanced predicate is any ontic-2

³¹⁵ It is natural to wonder whether it is possible to give examples of each of these different kinds of predicates. I have shown how it is possible to create a monadic predicate having any onticity. I have also shown how to create a ontic-1 predicate having any adicity.

dyadic predicate that is a member of is married to. Finally, an example of an ontically inflated predicate is any ontic-1 dyadic predicate that is a member of is identical to.

Both ontically compressed and ontically inflated predicates can give rise to philosophical puzzles. Nevertheless, ontically inflated predicates are not our immediate concern. We are more concerned with ontically compressed predicates, since it is these that have given rise to the confusion over the ontological status of signs.

§6 ONTOLOGICALLY COMPRESSED PREDICATES

Let us examine is a grandfather in light of these new distinctions. Clearly it is a monadic predicate. But what is its onticity, and how does one figure it out? One way of working out the onticity of a predicate is by examining a definition in which the predicate is adequately defined.³¹⁶ Consider, for example, the following definition of is a grandfather:

D3.3 x is a grandfather $\equiv (\exists y)(\exists z)(x \text{ is male} \cdot x \text{ is a parent of } y \cdot y \text{ is a parent of } z)$ ³¹⁷

In the definiens we find two existential quantifiers, a new monadic predicate, a dyadic predicate and two dots. In some sense, all that is compressed into the monadic predicate is a grandfather. Let us use ontological compression to name this kind of occurrence, where the definiens reveals hidden ontological commitments of the definiendum.³¹⁸ Moreover, let us call predicates which are members of is a grandfather *ontologically compressed*.

³¹⁶ One necessary condition for the adequacy of a definition is that the definiens not contain any superfluous logical operators. Ideally, the definiens will be minimally expressed in primitive terms. In our example, let us suppose that the is a parent of and is male are primitive predicates.

³¹⁷ Following standard practice, I leave off the universal quantifier governing the whole definition.

³¹⁸ The reader should note that the concept of ontological compression is different from the concept of ontic compression that was previously introduced. As explained below, ontic compression is a species of ontological compression.

Through the definiens of the above definition, the members of is a grandfather are ontologically unpacked and the hidden existential quantifiers are revealed. These existential quantifiers are related to the onticity of *this* predicate.³¹⁹ For as the definition makes plain, if Smith is a grandfather, there must be two other things as well. By considering those two other things along with Smith, we are led to the conclusion that $\forall \epsilon: \text{is a grandfather}$ is an ontic-3 monadic predicate.

With the concept of ontological compression now available, a conjecture can be made about the fundamental nature of the ontological confusion over signs.

(T5) Part of the reason there has been so much confusion over the ontological status of signs is that $\forall \epsilon: \text{is a sign}$ is ontologically compressed.

It is important to realize, however, that there is more than one kind of ontological compression.

§7 VARIETIES OF ONTOLOGICAL COMPRESSION

Ontological compression is not simply characterized by ontic compression (a predicate having a higher onticity than its adicity). That is a sufficient condition for ontological compression, but not a necessary condition. There are at least four distinct species of ontological compression.³²⁰

- Adic compression
- Existential compression
- Logical compression
- Ontic compression

³¹⁹ It is important to realize that there is no simple function that will take us from the number of variables in a predicate's definition to its onticity. This is primarily due to the fact that distinctness of variable does not always indicate distinctness of entity. For example, consider the following case involving a non-reflexive dyadic predicate in the definiens: $x \text{ is loved} \leftrightarrow (\exists y)(y \text{ loves } x)$.

$\forall \epsilon: \text{loves}$ is an onto-1 dyadic predicate since an individual can love itself. As a result, $\forall \epsilon: \text{is loved}$ is a onto-1 monadic predicate, even though there is an additional quantifier in the definiens.

³²⁰ There are other species of ontological compression, like modal compression, etc. But these forms of compression do not relate to our immediate concern.

A predicate Φ is adically compressed when the definiens of any definition in which Φ is adequately defined contains predicates of higher adicity than Φ . If it contains a predicate that is one degree higher, (and no predicates of any higher degree) we will say that Φ is adically compressed to degree 1. If it contains a predicate that is two degrees higher (and no predicates of any higher degree), we will say that Φ is adically compressed to degree 2, etc..

A predicate Φ is existentially compressed when the definiens of any definition in which Φ is adequately defined contains more existential quantifiers than the definiendum. If it contains exactly one more existential quantifier, we will say that Φ is existentially compressed to degree 1. If it contains exactly two more existential quantifiers, we will say that Φ is existentially compressed to degree 2. Etc..

A predicate Φ is logically compressed when the definiens of any definition in which Φ is adequately defined contains more logical connectors than the definiendum. If it contains one more logical connector, we will say that Φ is logically compressed to degree 1. If it contains two more logical connectors, we will say that Φ is logically compressed to degree 2. Etc..

A predicate Φ is ontically compressed when the number of logical subject terms required to make a statement with that predicate is less than the smallest number of individuals required to instantiate the predicate.³²¹

³²¹ Notice once again that an onto-1 monadic predicate can be existentially compressed, as in the case of the onto-1 monadic predicate characterized by 'is loved'. We get the definition x is loved $\leftrightarrow (\exists y) y$ loves x . Since x may love himself, the predicate is onto-1, even though the definiens contains an existential quantifier not contained in the definiendum. The existential compression of a predicate is measured by the number of additional existential quantifiers in the definiens while onticity is measured by the least number of individuals required to instantiate that predicate. Since two distinct quantifiers can stand for the same

With these distinctions in place we can now say, provided the above definition is adequate, that $\forall \epsilon: \text{is a grandfather}$ is an ontic-3 monadic predicate that is adically compressed to degree 1 (since the definiens contain a dyadic predicate while the definiendum contains only a monadic predicate); existentially compressed to degree 2 (since the definiens contains two more existential quantifiers than the definiendum); logically compressed to degree 2 (since the definiens contains two more logical connectors than the definiendum); and ontically compressed to degree 2 (since only one subject term is needed to create a sentential function with the predicate, but three individuals are needed to instantiate the predicate).

At this point, our analysis of is a grandfather is almost complete. But in order to understand this predicate fully, we must temporarily step away from this technical analysis of predicates and semantically descend to the world of grandfathers and Smith.

§8 THE EXISTENCE OF A GRANDFATHER VS. THE EXISTENCE OF SMITH

Smith is a grandfather. As a result, we can say that a grandfather exists. But the existence of Smith and the existence of a grandfather are not the same. In order to appreciate this point, let us imagine a world in which the evil terrorists have succeeded in unleashing a deadly strain of smallpox. Furthermore, let us suppose that all human life is destroyed by this disease with exception of Smith and his pregnant daughter Jones (her married surname). In our scenario, Smith exists; but clearly no grandfather yet exists.

thing, there is, unfortunately, no simple law-like connection between existential compression and onticity. However, the onticity of a predicate will be related to the number of existential quantifiers in the definiens that must take unique values. But in order to know how many of these quantifiers must take unique values, the logical properties of the predicates involved must be known beforehand. No simple counting of existential quantifiers will reveal the onticity of the defined predicate.

Nevertheless, a few months later Jones gives birth to Hope, a baby girl. And with this event, not only does a new person come into existence, but a grandfather now exists as well (along with a mother, a child, and a grandchild). The birth of Hope has given rise to many things.

With the birth of Hope, Smith is a grandfather. But for how long? Well, suppose Hope dies an hour after birth. Does the grandfather go with her? If Hope dies, does Smith remain a grandfather? Here we can imagine different people answering these questions in different ways. One might take the view that once a man obtains the status of a grandfather, he remains a grandfather, even if all his grandchildren die. To counter this kind of idea, someone might ask: What if Hope is aborted? What if Hope is stillborn? What if Hope dies the moment after birth? Suppose Hope is born and Smith breaks out the cigars proclaiming that he is a grandfather. Should Smith put out his cigar and renounce his grandfather-hood when he learns of the sudden death of Hope? On the one hand, it seems that the only way to answer this question is by making an appeal to ordinary language. On the other hand, it seems that the nature of ordinary language is such that it could not settle the dispute definitively. In short, it is not exactly clear what, if anything, ordinary language demands in this situation. So I will stipulate that for a grandfather to exist (at a time?), a grandchild must exist (at that time) as well.³²²

What is perhaps more significant and less controversial is the role that Jones plays in the existence of the grandfather. Without Jones, Smith would never have become a grandfather. But suppose that Jones dies giving birth to Hope. Provided that Hope lives, Smith becomes, and remains, a grandfather. So the role Smith and Hope play in the

³²² Susan Haack has pointed out that "there is no answer to be discovered here; there is only a decision to be made."

existence of a grandfather is different from the role that Jones plays. In one sense, Jones plays a crucial role in the existence of a grandfather. In another sense, she is dispensable.³²³ With this in mind, we must now return to our technical analysis.

§9 VARIETIES OF EXISTENCE

Above, I argued that $\forall^e \text{is a grandfather}$ is an ontic-3 monadic predicate. But the recent observations concerning Jones give us reason to pause. Smith can be a grandfather provided only two individuals exist—Smith and Hope. So should we revise the account and say that $\forall^e \text{is a grandfather}$ is an ontic-2 monadic predicate? This question calls for some finer distinctions. It reveals that the criteria for determining the onticity of a predicate are not yet as precise as they need to be. The problem can be traced back to the concept of existence, as well as the interpretation of the existential quantifiers. Existential quantifiers are often interpreted as having no temporal significance. To make the point clearer, consider:

$$(16) \quad \text{☞} (\exists x)(x \text{ wrote } \textit{Meditations on First Philosophy}) \text{☞} .$$

In the non-temporal interpretation of the quantifier, (16) is true. But according to a temporal interpretation, which claims that the author of *Meditations on First Philosophy* presently exists, (16) is false. I think there is something very important about the temporal conception of existence, for we often want to say that something does not yet exist, or something no longer exists. Notice that by adopting the non-temporal account of existence, Descartes could have written the Latin equivalent of

$$(17) \quad \text{☞} \text{I exist, even when I do not conceive or utter it.} \text{☞} .$$

³²³ Adopting Amie Thomasson's (1999, Chapter 2) terminology, we could say that the existence of the grandfather is constantly dependent on Smith, while only historically dependent on Jones.

Adopting the non-temporal interpretation of the quantifier would also have serious consequences for the truth value of the sentence:

$$(18) \quad \text{☞}(\exists x)(x \text{ is a grandfather})\text{☞}.$$

According to the non-temporal interpretation, (18) would be true even in the case where Smith himself dies shortly after the birth of baby Hope. This calls for one more round of distinctions.

§10 VARIETIES OF EXISTENTIAL QUANTIFIERS

By adopting certain notational conventions, we will be able to express in a precise way certain ideas that are otherwise difficult to individuate. The first thing that we must realize is that we seek to distinguish *existing at certain times* from *existing without temporal commitment*. One question, then, is: How are we going to chop time up? I shall work in terms simply of:

- Past
- Present
- Future³²⁴

Given this, we get seven distinct, but not mutually exclusive, concepts of temporal existence:

- Existed in the past (at least)
- Exists in the present (at least)
- Will exist in the future (at least)
- Existed in the past and exists in the present (at least)
- Exists in the present and will exist in the future (at least)
- Existed in the past and will exist in the future (at least)
- Existed in the past, exists in the present and will exist in the future

³²⁴ There are, of course, problems with this division. One problem with this division concerns relativity theory and what is meant by 'the present'. However, for the kind of cases we are considering, this is not a serious objection. No one doubts the truth of 'Barack Obama is presently alive' when it is uttered on November 4, 2008, strictly on the grounds of relativity theory.

We will express these various concepts through the placement of diacritical marks above the existential variables, as follows:

- $(\exists^{\leftarrow}x)(x \text{ is grandfather})$ (i.e. A grandfather existed in the past.)
- $(\exists^{\check{x}})(x \text{ is grandfather})$ (i.e. A grandfather exists in the present.)
- $(\exists x^{\rightarrow})(x \text{ is grandfather})$ (i.e. A grandfather will exist in the future.)
- $(\exists^{\leftarrow\check{x}})(x \text{ is grandfather})$ (i.e. A grandfather exists in the present who existed in the past.)
- $(\exists^{\check{x}\rightarrow})(x \text{ is grandfather})$ (i.e. A grandfather exists in the present who will exist in the future.)
- $(\exists^{\leftarrow\check{x}\rightarrow})(x \text{ is grandfather})$ (i.e. A grandfather exists in the present who existed in the past, and will exist in the future.)³²⁵

Furthermore, we will name the diacritical marks in the following way:

- $\forall \in \boxed{\leftarrow}$ will be called *a past wedge*
- $\forall \in \boxed{\check{}}$ will be called *a present wedge*
- $\forall \in \boxed{\rightarrow}$ will be called *a future wedge*

These notational conventions have the advantage of being partly iconic and easy to master. We can also add to the list the quantifier without diacritical marks:

- $(\exists x)(x \text{ is a grandfather})$ (i.e. A grandfather either exists in the present, existed in the past or will exist in the future.)³²⁶

§11 AN EXISTENTIAL DEFINITION OF A GRANDFATHER

With these notational conventions in place, we can now reformulate the definition of a grandfather, so that it reads:

D3.4 $x \text{ is a grandfather} \equiv (\exists y)(\exists \check{z})(x \text{ is male} \cdot x \text{ is a parent of } y \cdot y \text{ is a parent of } z)$

More importantly, we can precisely state the ontological conditions for the present existence of a grandfather, through the following *existential definition*:³²⁷

³²⁵ These last four cases can be defined taking the first three as primitive. For example:

$$(\exists^{\leftarrow\check{x}})(x \text{ is grandfather}) \equiv [(\exists^{\leftarrow}x)(x \text{ is grandfather}) \cdot (\exists \check{y})(y \text{ is grandfather}) \cdot (x=y)].$$

³²⁶ The traditional quantifier can be defined in terms of the others in the following way:

$$(\exists x)(\dots) \leftrightarrow [(\exists \check{x})(\dots) \vee (\exists^{\leftarrow}x)(\dots) \vee (\exists x^{\rightarrow})(\dots)]$$

D3.5 $(\exists x)(x \text{ is a grandfather}) \equiv (\exists x)(\exists y)(\exists z)(x \text{ is male} \cdot x \text{ is a parent of } y \cdot y \text{ is a parent of } z)$

The important thing to notice is that the second existential quantifier in the definiens has no present wedge. This accords with the fact that, in the scenario of (§8) above, the present existence of Jones is not necessary for the present existence of Smith the grandfather. Nevertheless, Jones is necessary in some sense. Let us, then, distinguish two different kinds of onticity:

- a predicate's historic-onticity (or its H-value for short)
- a predicate's constant-onticity (or its C-value for short)

The H-value of a predicate will be determined by the number of existential quantifiers in the definiens of an adequate existential definition that must take unique values. As a result, $\forall x \text{ is a grandfather}$ is an H3 monadic predicate. The C-value of a predicate is determined by the number of existential quantifiers with present wedges in the definiens of an adequate existential definition (that must take unique values). Therefore, every member of is a grandfather is a C2 monadic predicate.

As a summary of our analysis, every member of is a grandfather is a H3-C2 monadic predicate that is adically compressed to degree 1, existentially compressed to degree 2, logically compressed to degree 2 and ontically compressed to degree 2.

§12 THE ONTOLOGICAL STATUS OF A GRANDFATHER RECONSIDERED

On one hand, nothing is more familiar than a grandfather. Mine came from Norway, smoked a pipe, and was a good man. On the other hand, careful analysis reveals that the ontological conditions required for the truth of:

³²⁷ An existential definition gives the necessary and sufficient ontological conditions for the present instantiation of a predicate.

(18) $\exists x \text{A grandfather exists. } x$,

are rather complicated. And now we ask the question one last time: Are grandfathers objects, properties, or relations? If we must place them in one of these categories, the only reasonable place to put them is in the category of object. And the reason for doing so is primarily that $\exists x \text{ is a grandfather } x$ is monadic, and applies to objects. Would it make sense to say that grandfathers are relations because $\exists x \text{ is a grandfather } x$ has a C-value greater than 1? I don't think so. But this is exactly the kind of move philosophers have made when it comes to signs.

§13 SIGNS ARE NOT RELATIONS

We are now prepared to return to the main question that was raised at the very outset of our inquiry:

(Q1) What is the ontological status of signs?

Common sense responds to this question with the thesis:

(T6) Signs are physical objects;

while some philosophers respond with:

(T7) Signs are relations.

What is the nature of this disagreement between common sense and philosophy? How does it arise? It all begins with ordinary language. In ordinary language, economy of expression is highly valued, which in turn leads to the ontological compression of $\exists x \text{ is a sign } x$. Next comes philosophical analysis. Through the analysis of this predicate (and the things it applies to), philosophers discover that a relationship is involved. This

discovery tempts some philosophers to the conclusion that signs are relations. Some, for example, make something like the following invalid inference.³²⁸

P' Φ is an adically compressed monadic predicate.
 C' The things that Φ applies to are relations.

The correct conclusion to draw from the above premise is:

C'' The instantiation of Φ involves a relation.

A similar, but different, kind of mistaken inference runs:

P' Φ is an ontically compressed monadic predicate.
 C' The things that Φ applies to are relations.

The correct conclusion in this case is:

C''' The instantiation of Φ requires multiple individuals.

In short, it is reasonable to conjecture that part of the dispute between philosophy and common sense over (Q1) is the result of the failure of both parties to distinguish the adicity of a predicate from its onticity. On one side we have common sense telling us signs are objects. On the other side we have philosophers telling us signs are relations. While common sense draws its conclusions from the adicity of the predicate, philosophers draw their conclusions from its onticity.

In order to the end the struggle between common sense and philosophy, a decision must be made regarding (T6) and (T7). At least one of them must be rejected, since they are clearly incompatible.³²⁹ The most reasonable decision in this case is to side with ordinary language and deny (T7), since the philosophers who drew this conclusion failed to distinguish what they should have distinguished. So I hold that signs are not relations;

³²⁸ Of course, the philosophers who draw this conclusion do not draw it from this exact premise, for if they understood this premise and the concept of adic compression, it is unlikely they would draw the mistaken conclusion at all. What is more likely the case is that they grasp much that is entailed by the premise, and draw their conclusion from that.

³²⁹ Here I am assuming that no physical objects are relations.

I hold this primarily because “is a sign” is a monadic predicate that clearly applies to things that are not relations.

PART III

THE ASSOCIATIONIST AND BEHAVIORIST CONCEPTIONS OF A SIGN

§1 OVERVIEW

In the previous step, I claimed that “is a sign” is an ontologically compressed monadic predicate; and that this compression is the source of part of the confusion regarding the ontological status of signs. The next step is to look more closely at the nature of signs to discover the ways in which this predicate is ontologically compressed. In other words, I will attempt to discover what is required for a sign to exist.

§2 THE ROLE OF THE MIND IN SIGNS

Can a sign exist even if there are no minds? For a variety of reasons, this question does not admit of any simple and uncontroversial answer.³³⁰ Moreover, answering this question it is not the goal of this section. The task at hand is merely to reveal that over the course of history *many* of the philosophers who have contemplated the nature of signs (and offered definitions) have thought that mind plays an essential role in the existence of

³³⁰ One reason that the question is not easily settled is that different people have different ideas about signs, existence, and minds. Before the question can be unequivocally discussed, there would have to be some agreement concerning what “sign”, “exist”, and “mind” signify. But the question about the signification of these terms is far from uncontroversial. Once the signification is settled, it is yet another matter to discover to what, if anything, they apply. To emphasize the difficulties raised by this question, consider the following two extreme positions. The eliminative materialist rejects thesis that there are any minds; and since signs exist, he claims that it is obvious that they can exist without a mind. On the other extreme, the idealist claims that signs cannot exist without a mind, since there is nothing that exists independently of mind.

signs.³³¹ For my purpose here (and in accord with what was said in the previous part of this chapter) I consider any definition of “sign” that includes “mind” in the definiens as one committed to the following thesis.³³²

(T8) A sign exists only if some mind exists.

§2.1 AUGUSTINE'S CONCEPTION OF A SIGN

The idea that signs require a mind (T8) can be traced back at least as far as the 4th century A.D., to the writings of St. Augustine.³³³ Augustine, who was perhaps the first great semiotician, presents the following definition in his *De Doctrina Christiana*:

A sign is a thing which of itself makes some other thing come to mind, besides the impression that it presents to the senses.³³⁴

Implicit in Augustine's definition is the idea that a sign cannot exist without a mind.³³⁵

After all, if no mind existed, it would not be possible for something to make some other thing “come to mind.”

³³¹ To avoid any misunderstandings, Part III of this Chapter is not a complete history of the philosophical investigation of signs. Such an investigation would constitute a complete treatise in itself. In §§2-3, I provide only a few examples from some of the more prominent philosophers, logicians, and linguists who held the view that signs involve minds. These examples are sufficient evidence that many of the philosophers, who have actually attempted to define what a sign is, have thought that reference to a mind is essentially involved. I also recognize that some have rejected this view (see §5 of this part for an example).

³³² Here I am presupposing that the term does not occur superfluously.

³³³ This is not to suggest that Augustine was the first person to realize that signs involve a mind. It is only to suggest that he is one of the first philosophers who puts forward a general definition of a sign that makes explicit reference to mind. For more information on Augustine's theory of signs and the thinkers who preceded him, see Giovanni Manetti's *Theories of the Sign in Classical Antiquity* pp. 157-168.

³³⁴ Augustine, *De Doctrina Christiana*, pg. 57.

³³⁵ Some may question whether this passage from Augustine is intended as a definition. In other words, some may question whether Augustine is presenting both necessary and sufficient conditions for counting something as a sign. If one examines the context in which the passage occurs, there is strong evidence that Augustine intends this as a definition. The passage occurs at the beginning of his discussion of signs, and immediately precedes his classification of signs. The fact that the passage precedes the classification, and that no other definition is offered, is evidence that the passage is to be taken as a definition. Furthermore, regardless of whether Augustine intended this passage as definition, it was considered to be a definition by others, like William of Ockham and John Poinsett, who came after him. I also consider Augustine to be giving a definition in this passage, as opposed to a mere sufficient condition.

§2.2 OCKHAM'S CONCEPTION OF A SIGN

Following Augustine, we find several other important philosophers supporting the thesis that signs cannot exist independently of a mind. In the 14th century, for example, William of Ockham offers the following two definitions of "sign".³³⁶

(I) In one sense a sign is anything which when apprehended brings something else to mind.

(II) In another sense a sign is anything which (i) brings something to mind and can supposit for that thing; (ii) can be added to a sign of this sort in a proposition (e.g., syncategormatic expressions, verbs, and other parts of speech lacking a determinate signification); or (iii) can be composed of things that are signs of either sort (e.g., propositions).³³⁷

Although both of these definitions are similar to Augustine's definition, neither is exactly the same. The first definition offered by Ockham is more general than Augustine's, since Ockham's definition does not require that a sign make an impression on the senses.³³⁸

The second definition is more specific, and seems to focus primarily on the linguistic sign. Both definitions, however, clearly make reference to a mind in their definiens, and support the thesis that signs cannot exist without a mind (T8).

§2.3 POINSOT'S CONCEPTION OF A SIGN

Another very important, but less familiar, contributor to the theory of signs was the 17th century Portuguese logician, John Poinsot (also known as John of St. Thomas). In his *Artis Logicae*, Poinsot makes one of the most extended efforts to arrive at a philosophical understanding of signs, including a detailed investigation of their

³³⁶ Strictly speaking, Ockham defined "signum" and not "sign".

³³⁷ Ockham, *Part I of the Summa Logica*, pg. 50.

³³⁸ In the next part of this chapter (Part IV), we will more carefully consider the difference between Augustine's conception and Ockham's.

ontological status.³³⁹ In the first part of that work Poinsoot presents the following definition:

*The sign, therefore, admits of the following definition: "That which represents something other than itself to a cognitive power."*³⁴⁰

He then writes:

We formulate the definition of a sign thus so that it embraces all signs, formal as well as instrumental. For the definition which is commonly circulated: "A sign is anything that, besides the impressions it conveys to sense, makes another come into cognition," applies only to an instrumental sign.³⁴¹

Like Ockham's definition, Poinsoot's definition is more general than Augustine's, since it does not require that a sign make an impression on the senses. He makes this more explicit in the following passage (where he begins to address the question of whether signs are relations):

The present discussion turns on the definition of sign given in the first of the *Summulae* books, chap. 2, namely, that a sign is "That which represents something other than itself to a knowing power." We have settled on a definition formulated in this general way, so as to include all the kinds of signs, both formal and instrumental. For **the usual definition** accepted as a matter of course by the theologians in their commentary on the opening of Book IV of *The Sentences of Peter Lombard*, **the one taken from Augustine**—"A sign is something which, besides the impressions that it conveys to sense, makes something come into cognition"—applies only to the instrumental sign.³⁴²

There are many things worth saying about Poinsoot's contribution to the theory of signs, and more will be said in the next part of this Chapter. For now, let it suffice to say that his general definition of a sign supports the thesis that a sign cannot exist unless a mind exists (T8).

³³⁹ The first question of the second part of Poinsoot's *Ars Logica*, is: *Is a sign a relation or does it merely involve a relation?* The second question of the second part is: *Is the sign-relation—in the case of natural signs—mind -independent or mind-dependent?*

³⁴⁰ Poinsoot, *Tractatus De Signis*, p. 25.

³⁴¹ *Ibid.* p. 25

³⁴² *Ibid.* p. 116. Bold facing is mine.

§2.4 PEIRCE'S CONCEPTION OF A SIGN³⁴³

If we jump to the late 19th and early 20th centuries, we find Charles Peirce, one of the founders of modern semiotic, making statements that seem to support (T8). For example, in an 1873 passage on the nature of signs, Peirce wrote:

A sign is an object which stands for another to some mind. I propose to describe the characters of a sign. In the first place, like any other thing it must have qualities which belong to it whether it be regarded as a sign or not. Thus a printed word is black, has a certain number of letters and those letters have certain shapes. Such characters of a sign I call its material quality. In the next place a sign must have some real connection with the thing it signifies so that when the object is present or is so as the sign signifies it to be, the sign shall so signify it and otherwise not. ... In the 3rd place, it is necessary for a sign to be a sign that it should be regarded as a sign for it is only a sign to that mind which so considers it and if it is not a sign to any mind, it is not a sign at all.³⁴⁴

In this passage Peirce seems to be committed to the view that signs require a mind.

In an undated fragment Peirce wrote:

A sign stands *for* something *to* the idea which it produces, or modifies. Or, it is a vehicle conveying into the mind something from without.³⁴⁵

And at the very beginning of his 1885 paper concerning the algebra of logic and the philosophy of notation, Peirce offers the following characterization of the term:

A sign is in a conjoint relation to the thing denoted and to the mind.³⁴⁶

In both of these passages, the essential role that the mind plays with regard to the existence of signs should be obvious. Not only do both passages involve a token of

³⁴³ In this section, I am merely attempting to show that Peirce held the view that the existence of a mind is a necessary condition for the existence of a sign. In the next part of this chapter, Peirce's conception will be investigated with greater scrutiny.

³⁴⁴ *Writings of Charles Peirce*, v. 3 pp. 66-67 (1873)

³⁴⁵ *Collected Papers*, 1.339 (undated fragment)

³⁴⁶ *Collected Papers*, 3.360. (1885)

☞mind☞, but mind in each case is an essential correlate of the relation which is required for signs to exist.³⁴⁷ In another passage from 1902, Peirce writes:

A sign is a Representamen with a mental Interpretant.³⁴⁸

Here the connection between signs and minds is maintained once again, although in a less obvious way. If we unpack Peirce's special terminology, however, the essential role of mind becomes more obvious.³⁴⁹ In defining ☞represent☞ for the *Dictionary of Philosophy and Psychology*, (1902) Peirce writes:

Represent: To stand for, that is, to be in such a relation to another that for certain purposes it is treated by some mind as if it were that other. ... When it is desired to distinguish between that which represents and the act or relation of representing, the former may be termed the "representamen," the latter the "Representation."³⁵⁰

Thus, we see that the mind is required for the existence of a representamen. As for interpretants, the same is true.

The Sign creates something in the Mind of the Interpreter, which something, in that it has been so created by the sign, has been, in a mediate and *relative* way, also created by the Object of the Sign, although the Object is essentially other than the Sign. And this creature of the sign is called the Interpretant.³⁵¹

And in 1908, Peirce writes:

Suffice it to say that a sign endeavors to represent, in part at least, an Object ... But to say that it represents its Object implies that it affects a mind, and so affect it as, in some respect, to determine in that mind something that is mediately due to the Object.³⁵²

³⁴⁷ It should be noted that in the second definition Peirce is not endorsing the view that signs are relations. On the contrary, he claims a sign is a correlate of a relation, which is much different.

³⁴⁸ *Collected Papers*, 2.274 (c. 1902)

³⁴⁹ Although all signs are representamens, Peirce leaves open the possibility that some representamens may not be signs. He writes immediately after the sentence quoted above, "Possibly there may be Representamens that are not Signs." In the next part of this chapter, Peirce's conception of a sign will be examined more closely, and the question of whether all signs represent something will be addressed.

³⁵⁰ *Collected Papers*, 2.273. (1902)

³⁵¹ *Essential Peirce*, v.2 p. 493 (1909)

³⁵² *Collected Papers*, 6.347 (1908)

With this last quotation, we have evidence that for at least thirty-five years of his adult life, one of the founding fathers of modern semiotic maintained a conception of a sign that seems to support the thesis that a sign exists only if some mind exists (T8).³⁵³

§2.5 SAUSSURE'S CONCEPTION OF A SIGN

In 1911, during one of his lectures on general linguistics, the other founding father of modern semiotic, Ferdinand de Saussure, gave the following characterization of the linguistic sign.³⁵⁴

. . .the linguistic sign is based on an association made by the mind between two very different things, but which are both mental and in the subject: an acoustic image is associated with a concept.³⁵⁵

The first thing to notice about this passage is that Saussure is *not* giving a characterization of signs in general; he is only characterizing linguistic signs. Indeed, unlike Peirce, Saussure was concerned first and foremost with linguistic signs.³⁵⁶ The second point is that it is clear from the above passage that linguistic signs, according to Saussure, involve a mind. Moreover, they do not merely *involve* a mind, they are *in* a

³⁵³ Over the course of his life, Peirce made many attempts to define a sign. He often makes reference to a mind or a quasi-mind when defining a sign. There are also passages from around 1902 where Peirce seems to waffle on the issue of whether the existence of signs entails the existence of minds.. (see C.P 2.29 1902, for example.) Peirce's conception of a sign will be more carefully considered in the next part of this chapter.

³⁵⁴ This passage is a translation of lecture notes taken by students who attended the lectures.

³⁵⁵ *Saussure's Third Course of Lectures On General Linguistics (1910-1911)*, pg. 74. Komatsu and Harris translation.

³⁵⁶ Although Saussure was concerned primarily with the linguistic sign, he recognized the possibility of a general theory of signs that included both linguistic and non-linguistic signs. He writes:

It is therefore possible to conceive of a science *which studies the role of signs as part of social life*. It would form part of social psychology, and hence of general psychology. We shall call it semiology (from the Greek semeion, 'sign'). It would investigate the nature of signs and the laws governing them. (Saussure, F. *Course in General Linguistics*, p. 15)

Also, his model of the linguistic sign was subsequently generalized by the semiological tradition so that it applied to all signs (i.e., even to non-linguistic signs). See Nöth, *Handbook of Semiotic*, p. 59 for further discussion of this topic.

mind.³⁵⁷ Since Saussure's view of the linguistic sign was an extension of his general view of signs, Saussure's general conception of a sign supports (T8).³⁵⁸

§3 THE ASSOCIATIONIST CONCEPTION OF A SIGN

In light of the definitions in the previous section, it should be evident that there is a long-standing tradition of viewing signs as mind-dependent objects. In this section, I want to consider *the more specific idea* that signs are to be defined in terms of mental association. In particular, consider the following definition of a sign:

D3.6 $(x \text{ is a sign}) \equiv (\exists y)(\exists z)(z \text{ is a mind} \cdot z \text{ associates } y \text{ with } x)$.³⁵⁹

A careful examination of this definition reveals that signs are defined in terms of minds and mental association. Of all the definitions listed in the previous section, this definition seems most similar to the one offered by Saussure in 1911, for according to Saussure, "the linguistic sign is based on an association made by the mind." But Saussure is not the only semiotician who advocated a mental association view of signs. Peirce also did (on occasion), as can be seen in the following passage, published in 1868.

³⁵⁷ It is worth noting here that the sign for Saussure is a binary *relation* or an ordered pair consisting of a concept and a sound image. In other words, Saussure considers the sign *to be* a relation; not an object.

Nevertheless, Saussure recognizes that his use of terminology deviates from ordinary usage. He writes:

This definition raises an important question of terminology. In our terminology a *sign*, is the combination of a concept and a sound pattern. But in current usage the term generally refers to the sound pattern alone, e.g. the word form *arbor*. It is forgotten that if *arbor* is called a sign, it is only because it carries with it the concept 'tree', so that the sensory part implies the reference to the whole. The ambiguity would be removed if the three notions in question were designated by terms which are related but contrast. We propose to keep the term *sign* to designate the whole, but to replace *concept* and *sound pattern* respectively by *signification* and *signal* (Saussure, F., *Course in General Linguistics*, p. 67)

³⁵⁸ See the preceding two footnotes for more on Saussure's general view of signs and its relation to his view of the linguistic sign. Also, see Part IV of this chapter where his conception of a sign is further examined.

³⁵⁹ I believe Augustine was the first person to suggest the basic idea behind this definition. Nevertheless, no one, as far as I know, has ever expressed it in exactly these terms. Thus, I encourage the reader to consider this definition as it stands and on its own merits, independently of any historical precedent. At the same time I have attempted to provide evidence that the basic idea that underlies this definition has been in circulation for centuries. The reader should also recognize that I am neither endorsing nor attempting to justify this definition as it stands. I am merely presenting it as a possibility for consideration.

The association of ideas is said to proceed according to three principles – those of resemblance, of contiguity, and of causality. But it would be equally true to say that signs denote what they do on the three principles of resemblance, contiguity, and of causality. There can be no question that anything *is* a sign of whatever is associated with it by resemblance, by contiguity, or by causality: nor can there be any doubt that any sign recalls the thing signified. So, then, the association of ideas consists in this, that a judgment occasions another judgment, of which it is a sign.³⁶⁰

Peirce also points toward a mental association view of signs in the sentence that immediately follows his 1885 definition (i.e., the one cited earlier). Peirce wrote:

If [the sign] is not of a degenerate species, the sign is related to its object *only* in consequence of a mental association, and depends upon a habit.³⁶¹

From these passages, we have evidence that, at least on certain occasions, Peirce endorsed something like associationist definition of a sign (D3.6).

Bertrand Russell is another influential 20th century logician who wrote things that seem to support (D3.6). Russell writes the following in *The Philosophy of Logical Atomism*:

I think that it is of the very essence of the explanation of what you mean by a [sign] to take account of such things as knowing, of cognitive relations, and probably also of association.³⁶²

This statement by Russell lends at least some support to the view proposed in the associationist definition of a sign (D3.6).

³⁶⁰ Collected Papers 5.307 "Some Consequences of Four Incapacities" in the *Journal of Speculative Philosophy*. Here I am assuming that the association of ideas and judgments is mental association.

³⁶¹ Collected Papers 3.360. "On The Algebra Of Logic—A Contribution To the Philosophy of Notation" in *The American Journal of Mathematics*. I have italicized "only" in the quotation for emphasis. The point Peirce is making here is that unlike degenerate signs (like icons and indices), symbols are related to their objects only through a mental association. Icons and indices (which are degenerate signs) have relationships to their objects independently of the mind. Nevertheless, the mind still associates the icon or index with its object.

³⁶² *The Philosophy of Logical Atomism and Other Essays 1914-1919*. pg. 167. In this passage I have taken the liberty of replacing "symbol" with "sign". Russell, like Whitehead and Goodman, preferred to use the "symbol" over "sign" when speaking generally about semantic objects.

With direct support for (D3.6) coming from Peirce, Saussure, and Russell (and indirect support from Augustine, Ockham, and Poincot³⁶³), we have reason to suspect that the definition may have some merit. Let us, then, consider how the predicate fares based on this definition. Consider the corresponding existential definition:

$$\text{D3.7} \quad (\exists x)(x \text{ is a sign}) \equiv (\exists x)(\exists y)(\exists z)(z \text{ is a mind} \cdot z \text{ associates } y \text{ with } x).^{364}$$

According to (D3.7), is a sign is a monadic predicate that is adically compressed to degree 2, existentially compressed to degree 2, and logically compressed to degree 1.

Unfortunately, whether the predicate is ontically compressed cannot be determined until some difficult questions concerning the nature of mental association are answered. For in order to determine whether the predicate is ontically compressed, we need to determine its ontic values, and in order to determine its ontic values, we need to know which variables in the definiens (if any) must take unique values. There is, however, no simple way of determining which variables in the definiens must take unique values without engaging in a detailed analysis both of the logical properties of mental association, and the nature of the things that can enter into it. And at this point we run into some rather difficult problems.

§4 PROBLEMS WITH THE ASSOCIATIONIST CONCEPTION OF A SIGN

Some problems with the associationist definition of a sign (D3.6) concern the logical properties of mental association. Mental association is characterized in (D3.6) as

³⁶³ Although Augustine, Ockham, and Poincot do not strictly mention mental association, their conceptions of a sign are closely related to this idea.

³⁶⁴ The question as to whether every quantifier in the definiens should have a present wedge is one that needs to be addressed; if this were changed, perhaps the C-value would change as well. My goal to ultimately to distinguish actual signs from potential signs and possible signs. This will be achieved through different arrangements of wedges on the quantifiers.

a triadic relation. So questions about whether this relation is reflexive, symmetrical, or transitive are not immediately applicable, since (strictly speaking) these logical properties apply to dyadic relations. Nevertheless, similar kinds of questions can be asked. For example, we might ask any of the following:

- (Q2) Is it possible for a mind to associate itself with itself?
- (Q3) Is it possible for a mind to associate x with x ?³⁶⁵
- (Q4) If a mind associates x with y , does it associate y with x ?
- (Q5) If a mind associates x with y and y with z , does it associate x with z ?

Providing justifiable answers to these questions should be a minimal prerequisite to the acceptance of (D3.6). But what kind of evidence could be used to justify answers to these questions? This is one of the problems with (D3.6). For if mental association is an actual relationship that obtains in the world, its logical properties must be described, not prescribed. Yet, through what mechanisms and procedures is the associationist to acquire evidence that could serve to justify his answers to these questions?³⁶⁶ Can he construct an empirical test, for example, that will determine an answer to (Q3) and help settle any disputes? The prospects seem dim.

Suppose, however, that the associationist uses introspection combined with his linguistic intuitions to answer these logical questions. In that case, there are likely to be irresolvable controversies surrounding his answers. But suppose that his answers are accepted by the vast majority of those who carefully consider the matter. In that event, we might very well consider the logical problems surrounding the associationist definition (D3.6) settled. Unfortunately, even if the associationist is able to achieve all we have supposed (and this would be no minor achievement), he still is not out of the

³⁶⁵ I use variables here and in the following questions to avoid the ambiguity that would arise from the use of regular pronouns.

³⁶⁶ Let us, for the sake of simplicity, use $\forall \epsilon$ associationist to refer to anyone who is an advocate of (D3.6).

woods; for there are also non-logical problems surrounding (D3.6), and these problems also demand attention before the definition can be accepted.

The first non-logical problem for an associationist concerns mind itself:

(Q6) What is the mind?

Without going too deeply into the controversies surrounding this question, I will merely point out that philosophers have been disputing this question for centuries, and the dispute is far from settled. Some philosophers maintain that the mind is a physical thing (physicalists), others that it is non-physical (dualists), and still others that it is no-thing at all (eliminative materialists).³⁶⁷ Of course, there is no hope of settling this question here. The only thing that can be done is to place the question on the side and wait to see what future investigations reveal.

The second non-logical problem for the associationist concerns the kinds of thing that the mind can associate:

(Q7) What kinds of thing are associated by the mind?

Here we are led to wonder whether the things associated by the mind are physical objects, sense data, ideas, concepts, percepts, or some combination of these things (perhaps things not even mentioned here). The associationist can opt to avoid this question as well; but if he does, then he defers one of the central questions about signs. After all, according to (D3.6), signs are correlates in a mental association, and insofar as we remain puzzled about the basic nature of these correlates, we remained puzzled about the basic nature of signs.

³⁶⁷ Rene Descartes' account of mind in his *Meditations* is the paradigm of dualism. The Identity Theory of mind proposed by J.J.C. Smart in "Sensations and Brain Processes," is an example of a physicalist account. Finally, the eliminative materialist account of mind is argued for Paul Churchland in "Eliminative Materialism and the Propositional Attitudes."

The problem that (Q7) raises for the associationist can be explained more clearly through an example. Consider the following three theses:

- (T9) Some signs are physical objects located outside a human body;
- (T10) No ideas or impressions are physical objects located outside a human body;
- (T11) The mind can only associate its own ideas and impressions.

All three of these theses seem reasonable enough; and they can all be simultaneously maintained without inconsistency. But when these three theses are combined with the associationist definition (D3.6), a contradiction results. Thus the associationist must reject at least one of the above theses,³⁶⁸ and anyone who wants to maintain all three of the above theses must reject (D3.6).

Assuming that (T10) is correct, one possible solution for the associationist is to reject the thesis that the mind can only associate its own ideas and impressions (T11) and adopt the following two theses:

- (T12) The mind can associate anything to which it has direct access;
- (T13) The mind has direct access to physical objects (as well as ideas).

In short, the associationist can attempt to maintain a consistent position by adopting something like the direct realist theory of perception.³⁶⁹ Direct realism, however, is not an uncontroversial theory. Moreover, such a move still leaves the mechanism of association unexplained.

Another possible solution for the associationist is to reject the thesis that some signs are physical objects located outside of a human body (T9) and adopt the following thesis:

- (T14) All signs are impressions or ideas.

³⁶⁸ It is possible, of course, for an associationist to reject two or even all three of these theses.

³⁶⁹ For an account of the direct realist position, see Chapter 14 of Thomas Reid' *Essays on The Intellectual Powers of Man* (1785) . Also, J.L. Austin's *Sense and Sensibilia* (1962).

If the associationist adopts this way out of the contradiction, he ends up with the strange result that "is a sign" applies only to things that are mental.³⁷⁰ Not only is this result contrary to common sense, it leads to the further result that no two people ever experience numerically the same sign, since one person's impression is always numerically distinct from another's. The adoption of (T14), in the end, leads to something like either a representationalist theory or a phenomenalist theory of perception.³⁷¹ These theories are not uncontroversial. Beyond that, the mechanism of association remains largely unexplained on this view.

It is important to notice how quickly one can progress from questions about the nature of signs to questions about the nature of perception. This progression is almost inevitable for the associationist, because he is likely to deny either that signs are physical objects (T9) or that the mind can only associate its own impressions and ideas (T11); and the denial of either of these theses will partly determine his answer to the question:

(Q8) What is the nature of the things perceived?

To sum things up, the associationist requires an answer to: *What kind of things does the mind associate?* (Q7) if he is going to answer: *What is the ontological status of signs?* (Q1), and an answer to (Q7) requires an answer to the question *What is the nature of the things perceived?* (Q8). And since the various answers to (Q8) are as controversial as the answers to *What is the nature of the mind?* (Q6), it is unlikely that the associationist is going to have an easy time giving a justifiable answer to either (Q7) or (Q1).

³⁷⁰ Saussure, for example, seems to adopt this solution, for he claims that the things associated by the mind "are both mental and in the subject."

³⁷¹ For an account of a representationalist position, see Book II, Chapter IX of John Locke's *Essay Concerning Human Understanding* (1689). For an account of a phenomenalist position, see W. T. Stace's article, "Science and the Physical World," (1967)

In the end, all of the problems with the associationist definition of a sign can be boiled down to problems about the nature of the mind. The associationist conception leads to difficult questions about the nature of perception and the mind; and it fails to give any account of the mechanism of association. Because of these problems, some philosophers have attempted to give an account of signs that avoids the mind altogether.

§5 THE BEHAVIORIST CONCEPTION OF A SIGN

The most noteworthy attempt to present a mind-independent characterization of signs was made by the American philosopher Charles Morris. In 1946, Morris published *Signs, Language and Behavior (SLB)*, a book in which he attempts to place semiotic on a scientific foundation. In the preface to that work, he writes:

This book aims to lay the foundation for a comprehensive and fruitful science of signs.³⁷²

And in the beginning of the opening chapter he writes:

The present study is based on the conviction that a science of signs can be most profitably developed on a biological basis and specifically within the framework of the science of behavior.³⁷³

According to Morris, a scientific foundation for semiotic must be couched strictly in behavioral terms. This means that it cannot include any mentalistic terms like "mind" or "idea" among its primitives. Morris explains the reason for this restriction in the following passages.

Our purpose is simply to advance semiotic as a science, and it is this purpose alone which determines what basic terms are to be accepted for building the terminology of semiotic. The issue is not between "mentalism" and "behaviorism," but is solely a methodological problem: are such terms as 'idea,' 'thought,' 'mind,' more or less precise, interpersonal, and unambiguous than such

³⁷² Morris, C. *Signs, Language and Behavior*, p. v

³⁷³ *Ibid.* p. 2

terms as 'organism,' 'stimulus,' 'response-sequence,' and 'disposition to response'? In choosing the latter terms we but express the belief that they are the more suitable for scientific advance.³⁷⁴

. . . semiotic as a science gains nothing by the introduction of mentalistic terms in its primitive terms, for insofar as these terms are not synonymous with behavioral terms they prove to be scientifically irrelevant.³⁷⁵

... mentalism provides no alternative to a behavioral semiotic if the goal of semiotic is to become a science.³⁷⁶

From these three passages it is clear that Morris's main reason for avoiding mentalistic terms in his development of semiotic is that he thinks such terms are imprecise and ambiguous. Although it is questionable whether all mentalistic terms are inherently imprecise and ambiguous, the previous section demonstrated how the associationist definition, which employs such terms, certainly inherits many of its problems from them.

Adhering to the strictures of his behaviorist program, Morris formulates his account of signs:

If anything, A, is a preparatory-stimulus which in the absence of stimulus-objects initiating response-sequences of a certain behavior family causes a disposition in some organism to respond under certain conditions by response-sequences of this behavior-family, then A is a sign.³⁷⁷

The first thing that you notice about this formulation is its complexity. Not only is it grammatically complex, but it involves terms like "preparatory-stimulus" and "behavior-family" which certainly require further elucidation. Moreover, Morris's formulation falls short of a general definition. As it stands, the above formulation is a mere conditional; it offers at most only a sufficient condition for the application of

"is a sign". This is not an oversight on Morris's part, however. He writes:

³⁷⁴ Ibid. p. 28

³⁷⁵ Ibid. p. 29

³⁷⁶ Ibid. p. 30

³⁷⁷ Ibid. p. 10

[This] formulation of 'sign' is not a definition in the sense that it gives necessary and sufficient conditions for something to be a sign. It does not say that something is a sign if and only if the conditions laid down are met, but merely that if these conditions are met, then whatever meets them is a sign.³⁷⁸

What is more, Morris does not seem to think that his failure to give a general definition of "sign" is a serious shortcoming. On the contrary, he thinks that offering a mere sufficient condition was a prudent maneuver. He writes:

I owe this suggestion of giving only a sufficient condition for saying something is a sign, instead of giving a definition (that is, sufficient and necessary conditions), to Alfred Tarski. This procedure seems advisable at the present state of the argument, since premature definitions may rule out other phenomena which we may later wish to include.³⁷⁹

We see, then, that even if Morris's behavioral account of signs proves to be more precise and unambiguous than the associationist's account, its failure to provide the necessary conditions for counting something as a sign renders it (if nothing else) less complete. On the other hand, despite its incompleteness, there are benefits to be gained from a careful analysis of Morris's account.

§6 PROBLEMS WITH THE BEHAVIORIST CONCEPTION OF A SIGN

An analysis of Morris's definition should begin with a clarification of the terms that it employs.³⁸⁰ In particular, each of the following terms needs to be defined.

- stimulus
- response
- stimulus-object
- preparatory-stimulus
- disposition to respond
- response-sequence
- behavior-family

³⁷⁸ Ibid. p. 12

³⁷⁹ Ibid. note p. 250

³⁸⁰ Even though Morris has only offered a condition as opposed to a definition of "sign", I will refer to that condition by using "Morris's definition".

The first two terms of this list do not occur explicitly in his definition; but insofar as they are not taken as primitives but used by Morris to define the five terms that follow them, they also need to be defined.³⁸¹ Morris defines the first four terms as follows.

Stimulus <u>def</u>	Any physical energy that acts upon a receptor of a living organism.
Response <u>def</u>	Any action of a muscle or gland.
Stimulus-object <u>def</u>	The source of a stimulus.
Preparatory-stimulus <u>def</u>	A stimulus that influences a response to some other stimulus. ³⁸²

When taken in conjunction with Morris's main definition, these four definitions already entail a rather striking thesis about the nature of signs:

(T16) Signs are physical energies that act upon the receptor of an organism.³⁸³

Scientific or not, this thesis is as contrary to common sense as (T7) or (T14). On the other hand, perhaps Morris really intended his definition to run:

If anything, A, is **the source of** a preparatory-stimulus . . . ,

instead of:

If anything, A, is a preparatory-stimulus . . . ,

for once the boldface terms are inserted into his definition, signs are no longer stimuli, but stimulus objects. At any rate, the following two distinct theses must be recognized.

³⁸¹ Since Morris defines all of these terms in the paragraphs leading up to the statement of his conditional, it is possible to extract those definitions from that part of the text. I have chosen not to do that, however. Instead, I supply his definitions as they occur in the glossary of (*SLB*), since the glossary definitions, besides being more complete, are more independent and permit a more logical ordering.

³⁸² *Ibid.* p. 355

³⁸³ The following syllogism is valid:

P' All stimuli are energy that act upon the receptor of an organism.

P'' All preparatory stimuli are stimuli.

C All preparatory stimuli are energy that act upon the receptor of an organism.

The first premise follows from Morris's first definition, while the second premise follows from his fourth definition. Thus, Morris must maintain the conclusion. Yet, according to Morris's main definition, signs are preparatory stimuli, so (T16) is established.

- (T17) Signs are stimuli.
 (T18) Signs are stimulus objects.³⁸⁴

In many places Morris seems to endorse (T18) as opposed to (T17). Consider, for example, the passage that immediately follows his main definition:

According to these conditions, the buzzer is a sign to the dog since it disposes the animal to seek food in a certain place in the absence of direct stimulation from food objects at this place.³⁸⁵

In this passage, Morris claims that the buzzer is the sign to the dog, not the sound waves from the buzzer that affect the dog's receptors.³⁸⁶ And if we examine his definition of "sign vehicle" we also find support for (T18):

Sign vehicle $\stackrel{\text{def}}{=}$ a particular event or object, such as a sound or mark, that functions as a sign.

These kinds of case lead us to suspect that Morris endorsed the view that signs are stimulus objects (T18) but was a bit careless in the formulation of his definition. On the other hand, attributing such carelessness to Morris seems inconsistent for more than one reason. First, the complexity of his definition is evidence that Morris did not merely throw it together without consideration. Second, Morris claims to have consulted others about his definition, and this is further evidence that he was careful in formulating it. Nevertheless, there is also evidence that Morris was really quite confused about (T17) and (T18). Throughout *SLB* he vacillates, sometimes endorsing the view that signs are stimuli (T17), other times endorsing the view that signs are stimulus objects (T18). This kind of confusion is manifested in the following passage:

Responses may, of course, under certain circumstances be signs but they need not be, and signs need not be responses. For while every sign-process involves a

³⁸⁴ Although these two theses are neither contradictory nor even contrary, the endorsement of both leads to a rather peculiar position and a multiplication of signs beyond necessity.

³⁸⁵ Ibid p. 10

³⁸⁶ See pp. 16-20 of (*SLB*) where this is said several times.

disposition to respond, the sign itself may be any feature of any stimulus-object which acts in the above manner as a preparatory stimulus; such stimuli are not limited to responses, and only when a response is itself a stimulus of this sort is it a sign.³⁸⁷

Here, in a single passage, we find things that support both (T17) and (T18). Indeed, the phrase "any feature of any stimulus-object which acts in the above manner as a preparatory stimulus" embodies the confusion, since it suggests that the physical energy that acts on the receptor of a living organism is a feature of the object from which that energy emanates. Again, the phrase "a response is itself a stimulus" when unpacked suggests that an action of a muscle or gland is identical to the physical energy that acts upon the receptor of a living organism.

Some may find these criticisms of Morris's account to be mere nitpicking, but in the context of (Q1) (What is the Ontological Status of Signs?), there really is a big difference between equating the sign with the stimulus and equating the sign with the stimulus-object. To illustrate the difference, suppose that Smith (the organism) looks down upon his desk and observes a wax seal (the stimulus-object) on an envelope. The observation, we may suppose, is strictly visual, i.e, Smith neither feels, smells, tastes nor hears the wax seal. We may further suppose that as a result of this observation, all the conditions in Morris's definition are met: i.e., the observation causes a disposition to be formed in Smith to respond under certain circumstances by response-sequences of a certain behavior-family. A visual observation requires light energy (electro-magnetic radiation), and we will suppose that the light energy that stimulates Smith's retina was originally emitted from an electric lamp. Thus, the light energy (the stimulus) travels through space from the lamp to the seal where it is reflected by the seal into Smith's eyes.

³⁸⁷ pg. 15

The main point here is that the wax seal is something very different from the light energy. For even though both are presumably physical and located externally to Smith's body, one is moving through the room at the speed of light, while the other lies motionless on his desk. Moreover, the wax seal does not cease to exist when the light switch is thrown to the off position, but the light energy does. Suppose, then, that the light switch is suddenly thrown to the off position. Does the sign continue to exist? That, of course, depends upon whether one maintains (T17) or (T18). So, before the behaviorist can answer (Q1), he must decide whether he endorses (T17) or (T18).³⁸⁸

The confusion over stimuli and stimulus-objects turns out to be a more serious objection to the behaviorist definition than it may appear on first glance. After all, one of the main reasons we turned from the associationist account toward the behaviorist account of signs was the prospect that it might avoid the difficult problems surrounding what is perceived (Q8). But now we find that this confusion over stimuli and stimulus objects is very much the analogue of the associationist's confusion over physical objects and ideas. In other words, the behaviorist who vacillates back and forth between viewing signs as stimulus objects (T17) and viewing signs as stimuli (T18) is like the associationist who vacillates back and forth between viewing signs as physical objects (T6) and viewing signs as impressions or ideas (T14). This shows that even though the

³⁸⁸ This example reveals one of the problems with Morris's behaviorist account. There are other problems as well. For example, Morris claims that a stimulus object is *the source* of a stimulus. Strictly speaking, however, the lamp is the source of the stimulus in the hypothesized scenario. Therefore, according to the definition, it could be argued that the lamp is the stimulus object. Combining this result with (T18), we are led to a rather astonishing conclusion, viz.: the lamp is the sign.

If nothing else, these types of examples reveal that a behaviorist theory of signs requires a more careful formulation than the one that Morris has supplied. One possible solution to the last puzzle might be to draw a distinction between direct and indirect sources of stimuli. The stimulus object, then, could be defined as a direct source of the stimuli. But even with this kind of distinction, we can still imagine scenarios in which we would be forced to draw some rather strange conclusions, e.g., a case where Smith is viewing the signet not directly, but in a mirror.

behaviorist has taken the mind out of the semiotic equation, he has not completely evaded the problems about signs and perception, nor is he more free than the associationist from the problems over what is perceived (Q8). And so, since Morris's account is less complete than the associationist's, while at the same time it also fails to resolve the problems that led us away from the associationist account in the first place, we are led to ask: What benefits does the behaviorist account have to offer?

Morris would likely claim that his behaviorist definition of a sign is "more suitable for scientific advance" than a mentalistic definition like (D3.6). Whether or not this is so, there are other serious drawbacks to his definition, like the fact that it is extremely difficult to spell out. This becomes more obvious once we consider the definitions of the last three terms:

Disposition to respond ^{def} ≡	The state of an organism at a given time such that under certain additional conditions a given response takes place.
Response-sequence ^{def} ≡	Any sequence of consecutive responses whose first member is initiated by a stimulus-object and whose last member is a response to this stimulus-object as a goal object (an object that partially or completely removes the state of the organism that motivates the sequence of responses.)
Behavior-family ^{def} ≡	Any set of response-sequences that are initiated by similar stimulus-objects and that terminate in these objects as similar goal objects for similar needs.

Recall that Morris believes that behavioristic terms are more precise than mentalistic terms. Yet the definition of "disposition to respond" includes the prepositional phrase "under certain additional conditions". How precise is this phrase? How is it to be spelled out? If this phrase cannot be spelled out, then the definition of "disposition to

respond[⊃] cannot be spelled out, which in turn means that Morris's definition of a sign cannot be spelled out. This is only one of many problems confronting anyone who hopes to formalize Morris's definition. In addition to this, discerning the primitive predicates involved is also a difficult problem. Yet without a spelled-out version of this definition, there is really no way to perform the kind of analysis that we were hoping for. For in order to discover how \mathcal{S} is a sign[⊃] is ontologically compressed, we need a spelled-out version of the definition that is minimally expressed in primitive terms. What is more, even if we were able to formalize Morris's definition in primitive terms, the definition only provides a sufficient condition, and would resist analysis on that account too.

The behaviorist definition and the associationist definition both have their merits and their problems. In the next sections I will formulate a definition that incorporates some of the merits of each, while avoiding some of the problems.

PART IV

A CONTEMPORARY ASSOCIATIONIST CONCEPTION OF A SIGN

§1 OVERVIEW

In the preceding part of this chapter, I gave a brief historical survey of two prominent conceptions of a sign—one maintains that signs are inherently mental (the associationist conception), the other claims they are not (the behaviorist conception). The remainder of this chapter is devoted to the task of developing a contemporary associationist conception of a sign.

In the account that follows, I routinely distinguish the conception of a sign (or the concept of a sign) from the definition of a sign. There is, I acknowledge, an intimate connection between a conception of x and a definition of x . A definition of a term like

“sign” is a formula that attempts to precisely specify the concept that is to be associated with the term. The concept and the definition are distinct, however, since one can have a concept of a sign without ever formulating a definition that specifies that concept.

Before setting out my contemporary associationist conception of a sign, and the definition that characterizes it, I will first consider the scope and the intended application of the definition, along with several of the requirements that it should meet. In this way the value and success of the definition may be more easily assessed.

§2 THE SCOPE AND INTENDED APPLICATION OF THE DEFINITION

My contemporary associationist definition of a sign aims at capturing the essence of the *human sign*, i.e. anything that is a sign for some human.³⁸⁹ The intended scope of the definition is thus narrower than some might desire, and broader than others might expect. Those who seek a general concept of a sign that applies to all forms of life (from humans to plants) will likely find the definition too narrow; those who think the concept of a sign should focus only on signs used for human communication will likely find the definition too broad. Since it is likely that people currently working in semiotic will see my definition as too narrow, I will first address the reasons for narrowing the scope of the definition.

The behaviorist approach to signs developed by Morris in the first part of the 20th century had the natural consequence of broadening the concept of a sign far beyond anything that Augustine ever suggested. Once the behaviorist dropped the mental

³⁸⁹ To avoid any confusions, a human sign need not be created by a human, nor must it be a sign used for communicating. Also, my decision to focus on human signs does not logically entail, conversationally imply, or even weakly suggest, that all signs are human signs. On the contrary, it suggests that there are non-human signs. Otherwise, “human sign” would be redundant like “male grandfather”.

requirement, and identified signs with stimuli that are disposed to prompt a certain kind of behavior, it was inevitable that sign activity would be attributed to non-human animals like dogs. And if to dogs, then why not to cats? If cats, why not mice? If mice, why not frogs or ants? If ants, why not fairy flies or the sea sponge? The behaviorist conception of a sign put semiotic on a slippery slope toward what is now known as zoosemiotics (the study of sign activity among all kinds of animals).³⁹⁰ But the slope was even slipperier than that! Morning-glory plants are also disposed to respond to stimuli, as are amoebas and fungi. In short, all kinds of living things are disposed to respond to stimuli. So the behaviorist conception of a sign led to phytosemiotics (the study of sign activity among plants), cytosemiosis (the study of sign activity in fungi), endosemiotics (the study of sign activity within living organisms) and more generally biosemiotics (the study of sign activity in and among all forms of life). The following passage from Thomas Sebeok gives some indication of how surprisingly broad the concept of a sign became in the minds of 20th century semioticians.

Semiosis in the vegetative world has been accorded much less discussion, but the principles underlying phyto-semiotics are thoughtfully assessed by Krampen. ... Krampen argues that their code differs from those of zoosemiotics "in that the absence of effectors and receptors does not allow for the constitution of [Jakob von Uexküll's] functional cycles, of object signs and sign objects, or of an *Umwelt*," yet that the world of plants "is nevertheless structured according to a base semiotics which cuts across all living beings, plants, animals, and humans alike." For instance, plants, though brainless and solipsistic systems they may be, are capable of distinguishing self/non-self. Plant semiosis incorporates the ancient micro-cosmos, a circumstance that accounts for botanical success, and they do have significant interactions with both animals and fungi.³⁹¹

³⁹⁰ ☞ zoosemiotics ☞ was coined by Morris' student Thomas Sebeok.

³⁹¹ Thomas A. Sebeok "The Sign Science and the Life Science," pp. 91-92.

As Sebeok acknowledges, plants do not have brains. Nevertheless, he thinks it makes sense to talk about plant semiosis.³⁹²

Some have gone even further than attributing sign activity to plants. Edwina Taborsky identifies sign activity on the most basic levels of the physical universe. She claims that sign activity exists wherever there is information:

The process of codification of energy to information is known as semiosis. Semiosis has nothing to do with language or with human or biological consciousness but begins at the very primal level of energy existentiality, by virtue of the basic requirement of energy to exist, which can be achieved only by its transformation within codal constraints.³⁹³

In this passage, in addition to claiming that sign activity begins at the primal level of "energy existentiality" (I take this to mean wherever energy exists), Taborsky explicitly denies that consciousness is essential for sign activity.

This broadening of the field of semiotic probably would never have happened, if Augustine's mental requirement for signs had not been abandoned by the behaviorists. For if the mental requirement is maintained, then the belief in phytosemiosis requires the belief that some plants have cognitive states; the belief in pansemiosis (the view that signs are everywhere) requires the belief in panpsychism. These consequences would have been enough to keep most (but not all) people from believing in pansemiosis or phytosemiosis. But Augustine's requirement was abandoned by the behaviorists, and the universe gradually became "perfused with signs."³⁹⁴

At this point, a few words of caution may be useful to help avoid any misunderstandings about what is being asserted. First, I am *not* saying that there are only

³⁹² ☞ semiosis ☞ is to be taken as equivalent in meaning to ☞ sign activity ☞.

³⁹³ Taborsky, E., "What is a sign?" p. 84.

³⁹⁴ The words in quotation marks are from a famous 1905 passage from Peirce (C.P. 5.448 n). The passage is quoted below.

human signs (even Augustine recognized sign activity among non-human animals).³⁹⁵ Second, I am *not* saying that once one takes the smallest step beyond human signs, one will find himself obliged to recognize plant semiosis. Third, I am *not* saying that any behaviorist approach to signs is obliged to recognize plant semiosis (for a behaviorist could well add criteria to his definition that exclude plants and fungi, or even dogs and cats). The claim is that the wide conception of a sign that is currently popular in semiotic is a product of the 20th century behaviorist approach to signs.

It could be argued, however, that the concept of a sign was not widened by the behaviorists, but instead by Peirce. Morris, after all, was strongly influenced by Peirce's theory of signs, and Sebeok and Taborsky appeal to the writings of Peirce in their efforts to broaden the concept of a sign. No doubt there are things that Peirce wrote in certain places that suggest a very broad concept of a sign. For example, in a very long footnote to his 1905 paper "Issues of Pragmatism," he wrote:

It seems a strange thing, when one comes to ponder over it, that a sign should leave its interpreter to supply a part of its meaning; but the explanation of the phenomenon lies in the fact that the entire universe—not merely the universe of existents, but all that wider universe, embracing the universe of existents as a part, the universe which we are all accustomed to refer to as "the truth"—that all this universe is perfused with signs, if not composed exclusively of signs.³⁹⁶

But there are also things he wrote in other places that suggest the contrary. For example in 1902, where he was writing primarily about signs instead of pragmatism, he wrote:

A *Sign* is a Representamen with a mental Interpretant. Possibly there may be Representamens that are not Signs. Thus, if a sunflower, in turning towards the sun, becomes by that very act fully capable, without further condition, of

³⁹⁵ In *De Doctrina Christiana*, Augustine writes: "Some animals too, have signs among themselves by which they show the desires of their minds: a cockerel on finding food gives a vocal sign to its hen to come quickly, and a dove calls to, or is called by, its mate by cooing. Many other such signs are observed regularly. Whether (as with a facial expression or a shout of pain) they accompany emotion without any desire to signify, or whether they are really given in order to signify something, is another question, and irrelevant to the matter in hand. I am excluding it from this work as not essential." p. 59.

³⁹⁶ *Collected Papers* 5.448n

reproducing a sunflower, which turns in precisely corresponding ways toward the sun, and of doing so with the same reproductive power, the sunflower would become a Representamen of the sun. But *Thought* is the chief, if not the only, mode of representation³⁹⁷

In this passage we find Peirce reserving ☞sign☜ for representamens having a *mental* interpretant, and suggesting that even if the sunflower is counted as a kind of representamen, it is not to be counted as a sign.

One thing that makes broad conceptions of a sign attractive is their potential for unifying the arts and sciences, while stimulating interdisciplinary research. But broadened conceptions have proven to be as problematic as they are attractive. Instead of identifying a common structure that underlies all kinds of purported sign activity, and providing a unified language for semiotic, broadened conceptions have tended to produce terminological confusions while placing emphasis on superficial resemblances among quite diverse phenomena. In *Principles of Semiotic* (1987), David S. Clarke compares extremely broad conceptions of a sign to extremely broad conceptions of a system, and expresses doubt about the usefulness of such conceptions:

The similarities between semiotic and that pseudo-science known as 'general systems theory' that enjoyed a brief vogue in the 1960's and 1970's, and the type of enthusiasm both have inspired, should serve as an ominous warning. The latter theory proposes a definition of what is called a 'system' that is general and indefinite enough to be applied to humans, lower animals, a lake (an 'ecosystem'), the solar system, atoms ('systems' with a nucleus and orbiting electrons), and even a galaxy. This variety and scope of applications may serve to evoke in its adherents attitudes of wonder and awe. But no common features seem to hold of the types of objects called 'systems' that have justified the establishment of a science with identifiable problems, nor has there been the development of a method for reaching that consensus on conclusions essential for progress in any discipline. In the same way nearly everything within a suitable context can be classified as a 'sign' if the term is defined with sufficient generality. But it is unlikely that this chaotic variety will be one for which

³⁹⁷ *Collected Papers* 2.274

significant problems are formulated and solved by means of an agreed upon method.³⁹⁸

Clarke's suspicions about the viability of a broad unified semiotic are more than merely consistent with the assessment of Winfried Nöth when he discusses the current state of semiotics in the introduction to his *Handbook of Semiotics* (1990):

Semiotics has become neither that unified science nor that "unifying point of view" which Morris had in mind when he delineated "the contours of the science of signs" for Otto Neurath's *International Encyclopedia of Unified Science* (Morris 1938). Today there are many schools and branches of both theoretical and applied semiotics. Pelc enumerates no fewer than sixteen different definitions given to semiotics by the diverse schools of this discipline and distinguishes five major current meanings of the notion of semiotics.³⁹⁹

These passages *suggest* that there has not yet been, nor will there soon be, a broad conception of a sign (one that applies to all living things) that is generally accepted and useful for all of the more specific sub-areas of semiotic.

Again, it is important to understand the purpose of these remarks and observations. It is *not* the purpose of these remarks to prove that a useful wide conception of a sign is an impossibility (no appeal to authority could ever prove that). Nor is the purpose to dissuade others from pursuing the project of searching for a useful wide conception of a sign (I am not trying to block the road of inquiry). The purpose is merely to reveal that—as a matter of fact—widening the conception of a sign to the point where all forms of life can qualify as engaging in semiosis has not (so far) been an unqualified success. Perhaps this is not surprising; for even on first glance there seems to be a world of difference between the human use of symbols and the activities of morning-

³⁹⁸ Clarke, *Principles of Semiotic*, p. 39.

³⁹⁹ Nöth, *Handbook of Semiotics*, p. 3.

glory plants. Moreover, the central philosophical problems that puzzle and intrigue us about the former are barely (if at all) applicable to the latter.

Perhaps the above comments will suffice as an explanation for my decision to focus in this work only on a definition of human signs. Yet some may still wonder why I do not take a few steps further down the slope and attempt a more ambitious definition that encompasses both human signs, dog signs, cat signs, etc., but stopping somewhere long before I get to fungi and plants. The answer is *not* that I think sign activity exists only among human animals. Indeed, I suspect that other animals that are conscious and have a central nervous system engage in sign activity as well (although not necessarily the same kind of sign activity that humans engage in when they read poems, construct logical proofs, or compose musical scores). But taking the two attributes of consciousness and having a central nervous system as necessary and sufficient for sign activity will not quiet all objectors either. There will be those who wonder about the possibility of alien life forms, gods, etc.—beings that may be conscious yet possibly have no central nervous system. These wonderful thoughts, which are completely in the spirit of philosophy, reveal how difficult it is to please everyone. In philosophy, pleasing everyone has seldom, if ever, been done. The strategy adopted here is to focus on the nature of human signs, because these are of the greatest interest for the theory of notation. Anyone who considers the definition proposed in this work can go on to imagine how it might be augmented so that it applies to other animals, plants, gods, or aliens.

By restricting the scope to human signs, my definition of a sign aims at a more modest goal than some semioticians have set for themselves. It seeks to identify only

what is essential to all human signs, regardless as to whether they are natural or conventional, whether they are icons, indices, or symbols, whether they are rhemes, dicents or arguments, and whether they are qualisigns, sinsigns, or legisigns.⁴⁰⁰ But some have thought that even this more modest goal is too ambitious. In *Philosophy in a New Key*, Susan Langer suggested that there is nothing common to all forms of meaning, and thus there is no common property shared by all human signs (or symbol situations).⁴⁰¹ She casts doubt on the prospects of the kind of unified theory of signs at which Peirce was aiming:

Whenever people find several species of a genus, they look for the prime form, the archetype that is supposed to be differently disguised in each special case; so, for a long time, philosophers hoped to find the true quality of meaning by collecting all its various manifestations and looking for a common ingredient. They talked more and more generally about "symbol-situations," believing that by generalization they might attain to the essential quality which all such situations had in common. But generalizing from vague and muddled special theories can never give us a clear general theory. The sort of generalization that merely substitutes "symbol-situation" for "denotation-or-connotation-or-signification-or-association-etc." is scientifically useless; for the whole purpose of general concepts is to make the distinctions between special classes clear, to relate all subspecies to each other in definite ways; but if such general concepts are simply composite photographs of all known types of meaning, they can only blur, not clarify, the relations that obtain among specialized sense of the word.

Charles Peirce, who was probably the first person to concern himself seriously with semantics, began by making an inventory of all "symbol-situations," in the hope that when all possible meanings of "meaning" were herded together, they would show empirical differentia whereby one could divide the sheep from the goats. But the obstreperous flock, instead of falling neatly into a few classes, each according to its kind, divided and subdivided into the most terrifying order of icons, qualisigns, legisigns, semes, phemes, and

⁴⁰⁰ The classification of signs into icons/indices/symbols, rhemes/dicents/arguments, and qualisigns/sinsigns/legisigns is derived from Peirce's 1903 division of signs. *C.P.* 2.227-2.272.

⁴⁰¹ "sign situation" is a term introduced by C.K. Ogden and I.A. Richards in *The Meaning of Meaning* (1923). Langer's use of "sign" and "symbol" differs from that of Ogden and Richards, and it also differs from that of Peirce, who influenced their work. Since Langer maintains that signs and symbols are mutually exclusive, she talks of symbol situations instead of sign situations. This difference in terminology can make a comparison of views difficult for those unaware of the differences, and one must ultimately look to the nature of the subject matter to see how to compare the different views.

delomes, and there is but cold comfort in his assurance that his original 59,049 types can really be boiled down to a mere sixty-six.⁴⁰²

Gilbert Harman has also expressed doubt about the project:

Smoke means fire and the word 'combustion' means fire, but not in the same sense of 'means.' The word 'means' is ambiguous. To say that smoke means fire is to say that smoke is a symptom, sign, indication, or evidence of fire. To say that the word 'combustion' means fire is to say that people use the word to mean fire. Furthermore, there is no ordinary sense of the word 'mean' in which a picture of a man means a man or means that man. This suggests that Peirce's theory of signs would comprise at least three different subjects: a theory of intended meaning, a theory of evidence, and a theory of pictorial description. There is no reason to think that these theories must contain common principles.⁴⁰³

Finally, Clarke also expresses doubt:

The alternative to a vacuous generic conception of a sign is to restrict ourselves to simply describing the features which hold of signs as interpreted natural events, primitive signs used in communication, and sentences as the complex signs used in communication, with the goal of isolating features which signs at these different levels must have. We impose no requirement from the beginning of our inquiry that such comparisons will lead to some feature or set of features shared by all signs at all levels.⁴⁰⁴

All these passages suggest that there is no common and essential characteristic shared by all human signs. I, however, reject this hypothesis and attempt to formulate a definition that captures what is common and essential to all human signs.⁴⁰⁵

One final point about the scope of my definition relates to its intended application. My definition is designed primarily as a foundation for the theory of notation. With this in mind, some may object to the scope of the definition on the grounds that it is too broad. They may argue that notations are certain kinds of specialized symbol systems,

⁴⁰² Langer, *Philosophy in a New Key*, pp. 53-54. Peirce discusses the 59,049 types of signs which can be "boiled down" to 66 in a letter to Lady Welby. *Semiotics and Signifcs*, p. 84.

⁴⁰³ Harman, "Semiotics and the Cinema" p. 23.

⁴⁰⁴ Clarke, *Principles of Semiotic* p. 41.

⁴⁰⁵ From this point forward I use "sign" as an abbreviation of "human sign". I do this primarily for the sake of brevity and style. I presume that this will not give rise to any confusions, since it should be obvious, considering what I have said above, that my focus in this part is only on humans signs.

and therefore what is needed is not a *general* definition of a sign, but a narrower definition of a *linguistic* sign, or perhaps of a symbol (i.e. conventional sign). In response to this kind of objection, two points should be made.

The first concerns something Peirce wrote in his 1885 article on the philosophy of notation:

I have taken pains to make my distinction of icons, indices, and [symbols] clear, in order to enunciate this proposition: in a perfect system of logical notation signs of these several kinds must all be employed.⁴⁰⁶

In this passage Peirce presents an interesting thesis which at least deserves careful consideration. If his thesis is correct, it would be a major mistake to found a theory of notation on the narrower definition of a symbol, for there are notations that involve signs that are not symbols.

The second point is closely related to the first, and concerns the recent philosophical interest in diagrammatic notations. In *The Logical Status of Diagrams* (1994), Sun Joo Shin takes up the task of showing that diagrammatic systems of notation need not be mere heuristic tools. Shin shows that the rules of a system like Venn's diagrammatic system of notation can be formalized, and that once formalized, these notations can be used to produce proofs which are just as rigorous as those produced by traditional linguistic/symbolic notations. But once she formalizes the rules of Venn's system and shows that it is sound and complete, she finds herself faced with a potential objection to all that she has done. She writes:

I started with the following assumption: There is a distinction between diagrammatic and linguistic representation, and Venn diagrams are a nonlinguistic form of representation. By showing that the Venn system is sound and complete, I aimed to provide a legitimate reason why logicians who care

⁴⁰⁶ Peirce, *Collected Papers* (3.363), 1885.

about valid reasoning should be interested in nonlinguistic representation systems as well. However, the following objection might undermine the import of my project: How do we know that Venn diagrammatic representation is a nonlinguistic system? After all, it might be another linguistic representation system which is too restricted in its expressiveness to be used in our reasoning. If we accept this criticism, what I have done so far would be reduced to the following: A very limited linguistic system was chosen and proven to be sound and complete. Considering how far symbolic logic has developed, this could not be an interesting or meaningful project at all. Therefore, it seems very important to clarify the assumptions that diagrammatic systems are different from linguistic ones and that the Venn systems are nonlinguistic.⁴⁰⁷

In order to show that her efforts at formalizing Venn's system have not been vain, Shin finds herself faced with the task of establishing criteria for distinguishing diagrammatic systems of notation from linguistic systems of notation. She continues:

There has been some controversy over how to define diagrams in general, despite the fact that we all seem to have some intuitive understanding of diagrams. For example, all of us seem to make some distinction between Venn diagrams and first-order languages. Everyone would classify Euler circles under the same category as Venn diagrams. Or suppose that both a map and verbal instruction are available for us to locate a certain place. None of us would think that these two media are of the same kind. But in other cases, our intuition does not guide us one way or another. For example, is a timetable with lines and English words diagrammatic or linguistic? Is a pie chart diagrammatic in spite of the figures and English words in each section?⁴⁰⁸

What Shin reveals in this last passage is that although we have rough intuitions about the difference between diagrams and symbols, there are cases where our intuitions are unable to offer much assistance.⁴⁰⁹ What is needed for these difficult cases is a systematic classification of sign systems that is grounded in rigorous definitions. Yet before we can have a systematic classification of sign systems, we will need a systematic classification of signs. And at the foundation of a systematic classification of signs, there must be a definition of a sign. Ideally the theory of notation will be grounded in the concept of a

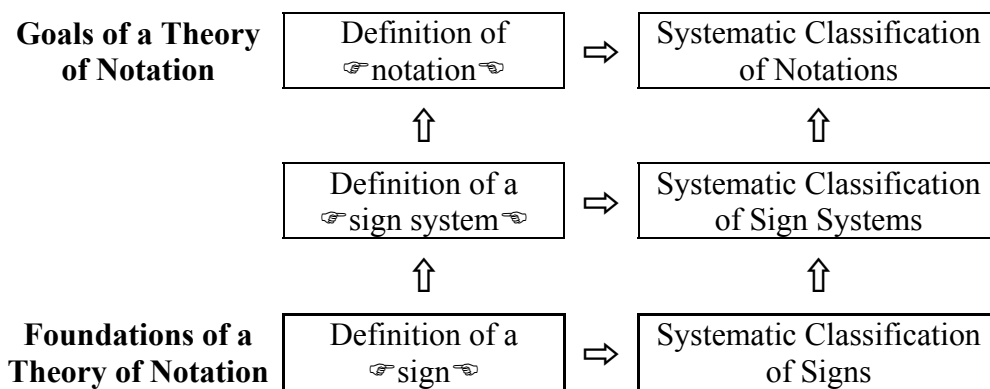
⁴⁰⁷ Shin, *The Logical Status of Diagrams*, p. 153.

⁴⁰⁸ Ibid. p. 153.

⁴⁰⁹ Shin's solution to the problem in *The Logical Status of Diagrams* is that interpreting diagrammatic systems requires learning fewer conventions than linguistic systems. p. 157.

sign, generally conceived. For as the passages from Peirce and Shin suggest, a theory of notation is not only concerned with linguistic signs or symbols.

At this point it should be evident why the definition of a sign is important for the theory of notation. The theory of notation aims at two goals: i) a definition of "notation", and ii) a systematic classification of notations according to their various properties. As a result, the definition of "sign" is fundamental to a theory of notation, because the definition will reveal the basic structure of a sign, and this basic structure must be the basis for a systematic classification of signs. A systematic classification of signs, in turn, must be part of the basis for a systematic classification of sign systems and notations. The following diagram shows how the definition of a sign relates to the goals of a theory of notation, where items below or to the left are the basis for items above or to the right.



§3 THE REQUIREMENTS ON THE DEFINITION

The requirements on my definition can be divided into the semantic, the syntactic, and the pragmatic. The semantic requirements deal with what is acceptable regarding the extension and intension of the predicate to be defined. The syntactic requirements deal

with general restrictions about the form of the definition, along with the language in which it is formulated. In addition to the semantic and syntactic requirements, I will include some pragmatic requirements, i.e., requirements concerning what the definition should allow us to achieve.

§3.1 THE SEMANTIC REQUIREMENTS

The first semantic requirement on my definition concerns the kind of things to which “sign” applies. Primarily it applies to objects; secondarily, perhaps, it applies to qualities. For the reasons given in Part II of this Chapter, it generally does not apply to relations.

The second semantic requirement is that the term applies only to things that can be experienced or apprehended. It does not apply to things that are in principle beyond all experience. For example, Kantian noumenal objects could not be signs.

The third (and perhaps most important) semantic requirement is that the definition makes room for things in the world of experience that are not signs. A definition which entails that everything we experience is a sign (a kind of pansemiosis) will be considered inadequate. In other words, the definition must preserve the commonsense idea that some things we experience are not signs—i.e., that some things we experience are mere objects.⁴¹⁰ This requirement falls in line with, but is not simply a concession to, *the rule of propriety*.⁴¹¹ Semiotic is the general science of signs—*not* the general science of things. But, if everything in human experience is a sign, then the distinction between

⁴¹⁰ This requirement is compatible, however, with the idea that any given mere object of experience can be made into a sign.

⁴¹¹ The rule of propriety, as stated by Locke, claims that the meanings of words are, and should be, regulated to some degree by their use in ordinary language. For a more detailed discussion of the rule of propriety, see Chapter II, Part II, §§ 3&4.

signs and things dissolves for us, and semiotic turns into the general science of human experience. Some welcome the widening of semiotic to the study of everything in human experience, but I think such a move changes the subject and promotes a vague and useless conception of a sign.⁴¹²

§3.2 THE SYNTACTIC REQUIREMENTS

The first syntactic requirement is one that holds for all definitions. The definition should take the form of a bi-conditional and provide both necessary and sufficient conditions for applying tokens of “sign” to things. The second syntactic requirement is that the definition be expressible in a language that includes first order predicate logic with the addition of certain primitive terms. The third syntactic requirement is that there is nothing in the definiens that is logically redundant. These last two requirements guarantee the possibility of an investigation concerning the ontological compression of the predicate. The fourth syntactic requirement is that the definiens does not contain any predicates that stand for semantic concepts. Since the definition should provide the basic semantic relation common to all signs, the definition would be circular if the definiens contained semantic terms.

§3.3 PRAGMATIC REQUIREMENTS

The main pragmatic requirement on my definition is best understood by first considering the nature of Nelson Goodman's theory of notation. Goodman never explicitly gives a definition of “symbol”. Nevertheless, gathering from what he writes throughout *Languages of Art*, the term is implicitly defined as:

⁴¹² The first three requirements may be stated more briefly as follows. A requirement of the definition is that “sign” apply to, and only to, some member of a proper subset of the objects of experience.

x is a symbol $\equiv (\exists y) x$ refers to y ⁴¹³

However, Goodman never addresses the question of what the relation of reference is. He simply takes the semantic relation of reference as primitive, and proceeds to characterize other semantic relations like denotation and exemplification as kinds of reference. My definition attempts to go further, since it does not take any semantic relation as primitive, but attempts to define all semantic relations in terms of non-semantic relations.

Goodman's theory of notation is based on his theory of symbols, and the former naturally inherits many of its qualities from the latter. For example, his theory of symbols is nominalistic, and so is his theory of notation; his theory of symbols is purely extensional, and so is his theory of notation; his theory of symbols is based on a purely conventional view of signs, and so is his theory of notation. Moreover, Goodman's conventionalism, extensionalism, and nominalism (with regard to signs) are intimately related to his general metaphysical and epistemological convictions. His conventionalism, along with his explicit refusal to recognize any kind of iconic signs, for example, can ultimately be traced back to his metaphysical relativism, and his arguments against similarity.⁴¹⁴

Goodman's theory of notation is full of valuable insights, whether or not one shares his epistemological and metaphysical views. But those who recognize how his relativism and nominalism have influenced his work must ultimately wonder how the theory would be different if it were founded on a more realist theory of signs. How would Goodman's theory of notation be different if it recognized icons and indices, instead of just symbols? How would it be different if it were founded on Peirce's realistic

⁴¹³ Goodman, *Languages of Art*, p. 5

⁴¹⁴ Goodman's arguments against iconic signs are in *Languages of Art*, pp. 3-6. His general arguments against similarity are in "Seven Strictures on Similarity."

triadic conception of a sign, as opposed to a nominalistic/extensional/conventional/relativistic/dyadic conception of a symbol? Since Goodman's theory of notation is highly structural (i.e. it explains higher, more complicated structures in terms of simpler structures), adding more structure at the foundation (i.e. at the level of a sign) will likely result in a quite different, more structurally robust, theory at the higher levels.

The main pragmatic requirement on my definition is that the definiens provide the basic underlying structure of a sign—a structure that can serve as a foundation for a detailed and systematic classification of signs, sign systems, and notations. The structure of a sign stands in relation to a classification of signs in the same way that the structure of an atom stands to the classification of chemical elements. And the revelation that atoms have a subatomic structure (protons, electrons, and neutrons) not only allowed for a better understanding and classification of the known elements, but also provided a blueprint for the discovery and creation of elements that were yet undiscovered. Hitting on the correct underlying structure of a sign should yield similar results in semiotic. Again, the main pragmatic requirement of my definition is that it reveal the basic structure of a sign, which in turn will serve as the basis for a useful systematic classification of signs, sign systems, and notations.

§4 THE BASIC IDEA OF THIS CONTEMPORARY ASSOCIATIONIST CONCEPTION OF A SIGN

As its designation suggests, my contemporary associationist conception of a sign takes mental association to play an essential role in sign activity. Like the old associationist conceptions, it maintains that there is an essential mental component to signs. The conception of a sign that is worked out in the following pages can be thought

of as simplified version of the neuro-consciousness conception of a sign.⁴¹⁵ The basic idea behind the contemporary associationist conception of a sign can be stated in a few words:

(T19) The semantic properties of every sign depend on mental association.

§5 A PRELIMINARY VERSION OF THIS CONTEMPORARY ASSOCIATIONIST DEFINITION OF A SIGN

I am now ready to set out a preliminary version of my definition. The definition, stated in quasi-English terms, runs:

D 3.8 (x is a sign) \equiv there is a y; and there is a human z; and z tends to mentally associate y with x.⁴¹⁶

In other words, something is a sign if and only if a human has a mental tendency to associate something with that thing. Despite the crudeness of this formulation, it begins to reveal how signs depend on the mental association of things. The definition needs cleaning up, and several important distinctions need to be drawn. First, however, I want to set out some notational "helps" along with a diagrammatic method of presenting this preliminary version of my definition. These notational conventions combined with the diagrammatic method will help to reveal the basic structure of a sign, and facilitate the comparison of my definition with other definitions of a sign.

⁴¹⁵ The neuro-consciousness conception of a sign is an account of signs which places this contemporary associationist conception on a neurological foundation. According to the neuro-consciousness conception, all semantic relations are to be explained in terms of relationships between neural activity. The added neurological dimension results in a more complex underlying structure. But the complexity of the theory, combined with the fact that it is based on current scientific theorizing (which may be incorrect), has led me to place the neuro-consciousness conception on the side and develop a more simplified account.

⁴¹⁶ It may be helpful at this point to remind the reader that I am using "sign" in these later sections as an abbreviation for "human sign".

§5.1 CONSCIOUS CONTENT AND CONSTANT DEPENDENCE

Constant dependence is a binary relation that is both reflexive and transitive.⁴¹⁷

Thomasson defines constant dependence as follows:

" α is constantly dependent on β " can be broadly defined as "necessarily, whenever α exists, β exists."⁴¹⁸

The converse of dependence is support. If one thing is dependent upon a second, then the second supports the first, and more specifically:

$(\alpha \text{ constantly supports } \beta) \equiv (\beta \text{ constantly depends on } \alpha)$.

The relation of dependence will be marked by an arrow having a tail that runs perpendicular to its shank. Thus:

$(\alpha \rightarrow \beta) = (\beta \text{ depends on } \alpha) = (\alpha \text{ supports } \beta)$

A flat-tailed arrow need not always point from left to right. It can point from right to left, from the bottom up, or the top down. Thus:

$(\beta \leftarrow \alpha) = (\beta \text{ depends on } \alpha) = (\alpha \text{ supports } \beta)$

Where the dependence is constant, c is added as a subscript.

$(\alpha \text{ c} \rightarrow \beta) = (\beta \text{ is constantly dependent on } \alpha)$.

conscious content is a general term that applies to anything that can be apprehended in consciousness. I divide all conscious content into two mutually exclusive subsets, based on the relation of constant dependence.

- i) content that *is* constantly dependent on the activity of some sensory receptor,
- ii) content that *is not* constantly dependent on the activity of some sensory receptor.

⁴¹⁷ Everything is constantly dependent upon itself; and if one thing is constantly dependent on a second, and the second is constantly dependent on a third, then the first is constantly dependent on the third.

⁴¹⁸ Thomasson, Amie, *Fiction and Metaphysics*, p. 30.

I apply "impression" to anything belonging to the first subset, and "idea" to anything belonging to the second.⁴¹⁹

Impressions and ideas admit of the type-token distinction, but there are no precise criteria that determine when two content tokens are of the same type. I will assume, in line with common sense, that different people can apprehend/have different tokens of the same idea or impression type.

Conscious contents can be further subdivided. Impressions can be divided into visual, auditory, tactile, gustatory and olfactory, according to the different sensory receptors on which they depend. Ideas can be divided into sensory and non-sensory according to whether or not they are historically dependent on sensory receptor activity.⁴²⁰

Conscious contents, considered generally (i.e., without regard for whether they are impressions, ideas or thoughts), will be designated by expressions resembling

"c^{x,z}". This expression designates some content x apprehended by person z .

Expressions resembling "imp^{x,z}" will designate contents that are impressions.

Expressions resembling "id^{x,z}" will designate contents that are ideas.

⁴¹⁹ These terms are adopted from David Hume's *Enquiry Concerning Human Understanding* and they are used primarily because they are short and familiar. Hume writes: "...we may divide all the perceptions of the mind into two classes or species, which are distinguished by their different degrees of force and vivacity. The less forcible and lively are commonly denominated THOUGHTS or IDEAS. The other species want a name in our language, and in most others; I suppose, because it was not requisite for any, but philosophical purposes, to rank them under a general term or appellation. Let us, therefore, use a little freedom, and call them IMPRESSIONS; employing that word in a sense somewhat different from the usual." *An Enquiry Concerning Human Understanding* p. 10

⁴²⁰ Thomasson describes historical dependence as follows: "a common variety of dependence, historical dependence, is at hand in cases in which one entity requires another in order to come into existence initially, although it may be able to exist independently of that entity once it has been created." *Fiction and Metaphysics*, p. 31. What I have said here does not entail that there are non-sensory ideas. There may not be any.

The proposition that a content x is constantly dependent on a sensory activity y for an individual z can be symbolized by \Leftarrow sensory activity $^{y:z}$ $c \mapsto c^{x:z}$ \Rightarrow and diagrammatically presented as follows.

$$\begin{array}{c} c^{x:z} \\ \uparrow_c \\ \text{sensory activity } ^{y:z} \end{array}$$

§6 A GRAPHIC PRESENTATION OF THIS CONTEMPORARY ASSOCIATIONIST DEFINITION OF A SIGN

The structure of the preliminary version of my definition can be represented as a graph.⁴²¹ The *basic* graph is constructed in a table with one row and three columns:

	Domain of Signs A	Relations between A and C B	Range of Things Signified C
Realm of Conscious Content			

Column A is the domain of signs (or the sign column), while column C is the range of things signified (or the signified column). Column B is reserved for expressing relations between the things in columns A&C. The idea that *content x is a sign of y for agent z* can now be presented diagrammatically as follows:

⁴²¹ If the reader associates \Leftarrow graph \Rightarrow with graph theory, that is fully appropriate. Graph theory investigates logical structures that can be created with vertices and edges. The graphs that are embedded in the tables that follow can be thought of graphs in this sense. See *An Atlas of Graphs*, by Read and Wilson (1998) for an extensive account of graph theory. For an introduction to the theory, see *Introduction to Graph Theory*, by Trudeau or *Introductory Graph Theory*, by Chartrand.

Graph #1	Realm of the Sign	Relations between A and C	Realm of the Signified
	A	B	C
Realm of Conscious Content	$c^{x:z}$	\Rightarrow	$c^{y:z}$

The triple shank arrow in cell B3 signifies a causal relation. It signifies that its antecedent (the item it points from) tends to give rise to its consequent (the item it points to). In this particular case it signifies that z 's apprehension of x tends to cause z 's apprehension of y .⁴²²

The basic graph and the preliminary version of my definition will now be further elucidated by comparing them with other conceptions of a sign. This comparison will reveal certain limitations of the preliminary version of my definition; and most importantly, it will reveal its inability to account for the semantic relation of denotation.

§6.1 AUGUSTINE AND THE BASIC GRAPH

Augustine's definition of a sign can be interpreted in two different ways. The definition runs:

A sign is a thing which of itself makes some other thing come to mind, besides the impression that it presents to the senses.⁴²³

It is relatively clear from this definition that signs are things. What is not clear is whether:

- i) signs are impressions,
- or
- ii) signs are things which give rise to impressions.

⁴²² To be more specific, the triple shank arrow indicates a law-like or causal connection between its antecedent and its consequent. such that if the antecedent were to be activated, then consequent would be activated. This relation is usually expressed in natural language with subjunctive conditional; and Peirce would say that it involves the category of thirdness.

⁴²³ Augustine, *De Doctrina Christiana*, pg. 57.

If the first interpretation is accepted, then the basic graph provides enough structure to capture Augustine's conception of a sign. If the second interpretation is accepted, the basic graph does not provide enough structure.

According to the first interpretation, Augustine's conception of sign would be represented by the following graph.

Graph #2	Realm of the Sign A	Relations between A and C B	Realm of the Signified C
Realm of Conscious Content	$\text{imp}^{x:z}$	\Rightarrow	$\text{id}^{y:z}$

If the second interpretation is accepted, then the basic graph does not provide enough structure to account for Augustine's definition. According to the second interpretation, the sign *gives rise to* the impression in cell A1—it is not identical with it.

In order to account for the second interpretation of Augustine's definition, the basic graph must be augmented with additional cells.

Graph #3		Realm of the Sign A	B	Realm of the Signified C
1	Realm of Conscious Content	$\text{imp}^{x:z}$	\Rightarrow	$\text{id}^{y:z}$
2		\uparrow_c		
3	Realm of Sensory Receptors	sensory activity ^{x:z}		
4		\uparrow_c		
5	Realm of Stimulus Objects	X		

This expanded graph recognizes not only the sensory activity (cell A3) on which the impression $\text{imp}^{x:z}$ constantly depends, but it also recognizes the stimulus object (cell A5) on which that sensory activity constantly depends. According to this graph, the sign is a stimulus object that gives rise to an impression through the realm of sensory activity.

Nevertheless, the association which constitutes the semantic connection between the sign and the idea that it brings to the mind is still based on a mental association by the mind.

The distinction between stimulus objects and the impressions they support in consciousness is not uncontroversial. And whether Augustine intended such a distinction, or whether his definition implies such a distinction, is a matter of interpretation.⁴²⁴ For those who prefer not to draw a distinction between stimulus objects and impressions, the basic graph offers a sufficient account of Augustine's conception of a sign. In this case, sign^{imp} applies to impressions. If a distinction is drawn between impressions and stimulus objects, the expanded graph should be sufficient. In this case, sign^{obj} applies to objects external to the body.

The expanded graph suggests that sign^{obj} applies to stimulus objects, not to the stimuli or to the impressions that they support. On the other hand, it is possible to apply the term indiscriminately to things in these different realms; and in some situations doing so may be desirable. Nevertheless, it is always good to have terminological distinctions keep pace with conceptual distinctions; and in cases where one wants to distinguish the sign as impression from the sign as stimulus object, one can use $\text{proximal sign}^{\text{imp}}$ to signify the former and $\text{distal sign}^{\text{obj}}$ to signify the latter. Thus, according to the expanded graph, $\text{imp}^{x:z}$ is a proximal sign of $\text{id}^{y:z}$ for z , and x is a distal sign of $\text{id}^{y:z}$ for z .

⁴²⁴ Here I take the liberty of pointing out one of the ways this subject has the potential to implode. Augustine's investigation into the nature of signs was prompted by his concern with interpreting the holy scriptures. Augustine saw the scriptures as a conglomerate of signs; and in order to understand them, he thought we must understand what signs are, and how they work. But Augustine presents his definition of a sign to us in signs—signs which are susceptible to different interpretations. The potential for an infinite regress becomes apparent, since any definition of a sign is presented in signs. The only hope to escape the regress (and perhaps Augustine recognized this) is to seek some sort of ground in mere objects.

§6.2 OCKHAM, POINSOT, AND THE BASIC GRAPH

The definitions of a sign provided by Ockham and Poinsot differ from Augustine's definition in an important way. According to Augustine's definition, all signs are apprehended by the senses. Ockham and Poinsot, however, do not mention the senses in their definitions. This is primarily because they are committed to the view that ideas/concepts, as well as empirical objects, can be signs. Poinsot writes:

The present discussion turns on the definition of sign given in the first of the *Summulae* books, chap. 2, namely, that a sign is "That which represents something other than itself to a knowing power." We have settled on a definition formulated in this general way, so as to include all the kinds of signs, both formal and instrumental. For **the usual definition** accepted as a matter of course by the theologians in their commentary on the opening of Book IV of *The Sentences of Peter Lombard*, **the one taken from Augustine**—"A sign is something which, besides the impressions that it conveys to sense, makes something come into cognition"—applies only to the instrumental sign.⁴²⁵

In this passage Poinsot draws a distinction between instrumental and formal signs. Instrumental signs make an impression on the senses, formal signs do not. What then is the nature of a formal sign? Poinsot is thinking of ideas (or concepts) as a kind of sign—viz., as formal signs.

Broadening the conception of a sign so that it includes ideas as well as empirical objects is a traditional move, if not a wholly uncontroversial one. The tradition of viewing ideas as signs can be traced back to misreading of Aristotle, who wrote in *De Interpretatione*:

spoken sounds are symbols of affections in the soul, and written marks are symbols of spoken sounds. And just as written marks are not the same for all men, neither are spoken sounds. But what these are in the first place signs of—affections of the soul—are the same for all; and what the affections are likenesses of—actual things—are also the same.⁴²⁶

⁴²⁵ Poinsot, *Tractatus De Signis*, p. 116. Bold facing is mine.

⁴²⁶ Aristotle *De Interpretatione*, 16^a3-8. It is important to notice that Aristotle *does not* say in this passage that ideas (or affections of the soul) are signs. And I do not claim that he does. But I do claim that this

This passage from Aristotle was influential in the historical development of logic; and it is likely that it either directly or indirectly influenced the decisions by Ockham and Poinset to count ideas as signs. To help see this influence, consider the following passage from Ockham's *Summa Logicae*:

As Boethius points out in his Commentary on the first book of the *De Interpretatione*, discourse is of three types—the written, the spoken, and the conceptual (this last existing only in the mind.) In the same way there are three sorts of terms—written, spoken, and conceptual. The written term is a part of a proposition which has been inscribed on something material and is capable of being seen by the bodily eye. The spoken term is a part of a proposition which has been uttered aloud and is capable of being heard with the bodily ear. The conceptual term is an intention or impression of the soul which signifies or consignifies something naturally and is capable of being part of a mental proposition and of suppositing in such a proposition for the thing it signifies.⁴²⁷

This passage which recognizes three kinds of terms makes explicit reference to the passage from Aristotle *De Interpretatione*. Again, consider what Poinset writes:

A term is a sign from which a simple proposition is made.⁴²⁸

And then:

The first division of terms is into mental, vocal and written. The mental term is the knowledge, or concept, from which a simple proposition is made. The vocal term is defined above, Chapter 1. The written term is conventionally significant writing from which a simple proposition is made.⁴²⁹

Although it is not explicitly stated, it is easy to see how the passage from Aristotle's *De Interpretatione* influenced Poinset's decision to count ideas as signs. All terms are signs; and there are three kinds of terms: written, spoken, and mental.

passage is the source of the view that ideas are signs. My claim is that the passage was misinterpreted by later logicians.

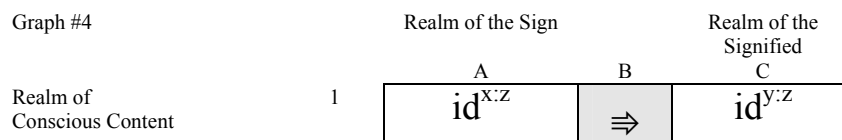
⁴²⁷ Loux, *Ockham's Theory of Terms Part I of the Summa Logicae* pp. 49-50.

⁴²⁸ *Outlines of Formal Logic* p. 30

⁴²⁹ *Outlines of Formal Logic* pp. 32-33. In this passage the author uses “knowledge” to translate “notitia”. John Deely, in his translation of the text uses “awareness” (*Tractatus de Signis*, p. 28)

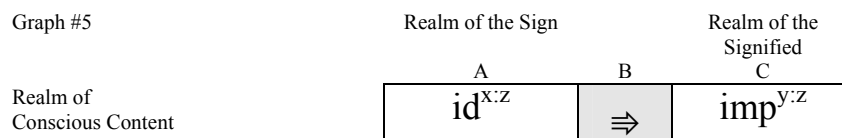
To mark the distinction between signs that are apprehended through the senses and signs that are not, Poinot used “instrumental sign” and “formal sign”, respectively.⁴³⁰ I will use “empirical sign” and “non-empirical sign” to mark this distinction. Ideas or mental terms are non-empirical signs. Written and spoken words, as well as any signs that must be apprehended through the senses, are empirical signs.

There are two different ways that ideas can be signs: i) an idea is a sign if it tends to give rise to a different idea; ii) an idea is a sign if it represents to an agent some object other than itself. The following variation on the basic graph accommodates ideas as signs in the first sense, but not in the second.



This graph presents the situation in which $id^{x:z}$ is a sign of $id^{y:z}$ for agent z . As will be discussed below, Saussure's conception of a sign seems best accounted for by something like this variation on the basic graph. Unfortunately, when Ockham and Poinot discuss non-empirical signs, they are thinking of them in the second sense—as mental representations of things. And the basic graph cannot so easily account for the semantic relation between an idea and that what it represents. In fact, even an expanded version of the basic graph cannot account for it. Let's see why.

Consider the following variation on the basic graph.



⁴³⁰ Strictly speaking, he used the Latin equivalents of these terms.

This graph would seem to present us with a situation in which an idea is a sign of an impression. But even if an idea can be a sign of an impression, this cannot be the right account, since ideas do not give rise to impressions in this way. No matter how hard you may think about a given thing, an impression of that thing will not enter your consciousness (as a result of that thought).⁴³¹ This is because impressions are constantly dependent upon the activity of some sensory receptor, and an idea cannot be disposed to give rise to the kind of sensory activity that is required for an impression. In order to clarify this point, consider the following expanded variant of the above graph.

Graph #6	Realm of the Sign		Realm of the Signified	
	A	B	C	
Realm of Conscious Content	1	$id^{x:z}$	\Rightarrow	$imp^{y:z}$
	2			\uparrow_c
Realm of Sensory Receptors	3			sensory activity ^{y:z}
	4			\uparrow_c
Realm of Stimulus Objects	5			y

Because constant dependence is a transitive relation, we find that $imp^{y:z}$ (cell C1) is not only constantly dependent on sensory activity^{y:z} (cell C3), but also on the stimulus object y itself (cell C5). As a result, a given idea could be disposed to give rise to an impression only if it could cause the things on which the impression constantly depends to come into existence. Since no idea can do this, impressions like $imp^{y:z}$ cannot occur in the signified column of either the basic graph or the expanded graph. But if that is true, then neither the basic graph nor the expanded graph can account for Ockham's and Poincaré's conception of the non-empirical (or formal) sign.

⁴³¹ When we recall from memory, imagine, or visualize an object in its absence, we do not thereby arrive at an impression of it. Impressions are defined above (§5.3) as contents that are constantly dependent on the activity of some sensory receptor. So these cases do not involve impressions, according to the definition.

These considerations lead to the following important question:

- (Q9) Is the relation between an idea and its object (the thing that the idea is an idea of) a semantic relation?

If we answer negatively, then my conception and my definition need not account for the relation between an idea and its object, since “sign” does not apply to ideas insofar as they are representations of things. It applies to them only insofar as they are associated with other ideas. But if we answer affirmatively, then the next question that must be asked is:

- (Q10) Can the semantic relation between an idea and its object be explained in terms of mental association?

If we answer negatively, then it must be conceded that my contemporary associationist conception of a sign is not adequate to explain the fundamental nature of all signs. If we answer affirmatively, then the basic graph will need to be modified or expanded in ways not yet considered.

Instead of addressing these problems immediately, I will place them on the backburner to simmer. Let us first consider how the basic graph measures up to Peirce's conception, and to Saussure's conception, of a sign. For an examination of these conceptions will indirectly lead us back to these questions.

§6.3 PEIRCE AND THE BASIC GRAPH

Peirce's conception of a sign developed over the course of his adult life. He began writing about signs at the age of 26 (1865), and continued to write about them until the age of 72 (1911).⁴³² In his writings spanning that 46-year period, there are more than

⁴³² It is difficult to state briefly the path that led Peirce to a study of signs, but it is safe to say that his early study of Kant's *Critique of Pure Reason*, combined with his interest in logic and his interest in Locke's

seventy places where Peirce puts forward a definition of a sign.⁴³³ The definition in each case, however, is not always the same, nor are the variant formulations always obviously equivalent.⁴³⁴

In Part III, §2.3 of this chapter, certain passages from Peirce's writings were put forward as evidence that Peirce's conception of a sign was aligned with T8 (a sign exists only if some mind exists). In §3 of that part, other passages were considered as evidence that Peirce held something like an associationist conception of a sign (at least at some times). At this point, the task is to consider how the basic graph measures up with Peirce's conception. And for this, a definition must be selected from his writings that captures what is essential to his conception.⁴³⁵ One possibility is to use the definition that Peirce supplied for the *Dictionary of Philosophy and Psychology* (1902).

Sign [Lat. *signum*, a mark, a token]: Ger. *Zeichen*; Fr. *signe*; Ital. *segno*.

(1) Anything which determines something else (its *interpretant*) to refer to an object to which itself refers (its *object*) in the same way, the interpretant becoming in turn a sign, and so on *ad infinitum*.

No doubt, intelligent consciousness must enter into the series. If the series of successive interpretants come to an end, the sign is thereby rendered imperfect, at least. If, an interpretant idea having been determined in an individual consciousness, it determines no outward sign, but that consciousness becomes

Essay, contributed to his interest in signs. Peirce began writing about signs in 1865. But in these early writings, his interest in signs is often expressed as an interest in representation. In fact, in 1865 he defines semiotic as the science of representation. See W1, p. 303 (MS 108).

⁴³³ Marty, *76 Definitions of The Sign by C.S. Peirce*.

<http://www.cspeirce.com/menu/library/rsources/76defs/76defs.htm>

⁴³⁴ There are several factors that make it difficult to pin down Peirce's conception of a sign. The first factor is that there are many different definitions. A second factor relates to terminology. Peirce continually experimented with terminology, and this means that he not only used different terms for the same idea at different times (e.g. legisign and famisign), but he often used the same term for different ideas at different times (e.g. interpretant as *the idea* produced by the sign vs. interpretant as *any effect* produced by the sign). A third factor relates to his metaphysics. Not only is his concept of a sign intimately connected with his metaphysical categories of firstness, secondness, and thirdness, his concept of a sign is designed to play a fundamental role in his metaphysics. As a result, an understanding of his metaphysics requires an understanding of his conception of a sign, and an understanding of his conception of a sign requires an understanding of his metaphysics. Both are difficult to grasp.

⁴³⁵ It may be argued that Peirce did not have a single conception of a sign, but instead several different conceptions. Although it is difficult to find something common in *all* passages where he discusses signs, there are, nevertheless, things which he maintained about signs throughout his life. And for this particular discussion, these things will be considered to be what is essential to his conception.

annihilated, or otherwise loses all memory or other significant effect of the sign, it becomes absolutely undiscoverable that there ever was such an idea in that consciousness; and in that case it is difficult to see how it could have any meaning to say that that consciousness ever had the idea, since the saying so would be an interpretant of that idea...⁴³⁶

In *Peirce on Signs*, James Hoopes claims that this definition is "representative" of

Peirce's conception:

There are scores of definitions of "sign" in Peirce's writings. This one is representative, especially in its reference to thirdness as "intelligent consciousness."⁴³⁷

But since Peirce does not mention consciousness in many definitions, and limits its importance in others, I think this definition is not the best choice. The following definition from 1902 is a better candidate, since it is shorter and involves only what can be found in most of his other definitions, both early and late.

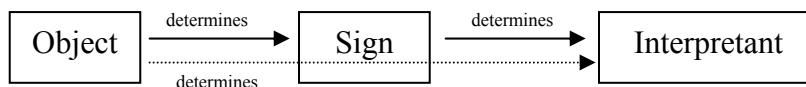
*A Sign, or Representamen, is a First which stands in such a genuine triadic relation to a Second, called its Object, as to be capable of determining a Third, called its Interpretant, to assume the same triadic relation to its Object in which it stands itself to the same Object.*⁴³⁸

Two essential features of Peirce's conception of a sign are captured in this definition (also from 1902). The most important feature (and one that he often emphasizes) is that a sign is always a correlate in a triadic relation. The other two correlates are *the object* and *the interpretant*. Down through the years, Peirce consistently maintains this much. A second feature that he (more or less) consistently maintains is that the object *determines* the sign, and the sign *determines* the interpretant. As a result, the object ends up determining the interpretant. The following is a diagrammatic caricature of Peirce's conception of a sign:

⁴³⁶ *Collected Papers*, 2.303 1902. Originally published in *Dictionary of Philosophy and Psychology*, vol. 2, p. 257. Also in J. Hoopes, *Peirce on Signs*, pp. 239-240.

⁴³⁷ Hoopes, *Peirce on Signs*, p. 239.

⁴³⁸ *Collected Papers*, 2.274 (c 1902) I think this definition captures what is essential because most of the other definitions state at least as much, although some state considerably more. In this definition we have the triadic nature emphasized, as well as his standard terminology for the three parts—sign/object/interpretant.



What is suggested here is that the object determines the sign (solid short arrow), and the sign determines the interpretant (short solid arrow). The object thereby *mediately determines* the interpretant *through* the sign (long dashed arrow).

Unfortunately, what Peirce meant by “determine” is not clear and unambiguous. He started using this term in contexts where he is discussing signs as early as 1865.⁴³⁹ And although he did not use this term in every case where he offered a definition, he used it often, and was still using it in 1909:

In another paper, I intend to give the formal definition of a sign, which I have worked out by arduous and long labour. I will omit the explanation of it here. Suffice it to say that a sign endeavors to represent, in part at least, an Object, which is therefore in a sense the cause, or determinant, of the sign even if the sign represents its object falsely. But to say that it represents its Object implies that it affects a mind, and so affects it as, in some respect, to determine in that mind something that is mediately due to the object. That determination of which the immediate cause, or determinant, is the Sign, and of which the mediate cause is the Object may be termed the *Interpretant*.⁴⁴⁰

I have suggested elsewhere that Peirce's use of “determine” in his earliest writings on signs (e.g. "Harvard Lecture I," 1856 , "Logic of the Sciences," 1865, "On a New List of Categories," 1867) follows Kant's use of the term “bestimmt” in his *Critique of Pure Reason* (Transcendental Dialectic) and *Logic*.⁴⁴¹ Determination in this sense is the specification of things and their concepts through the application of predicates.⁴⁴² In this

⁴³⁹ "Harvard Lecture I," 1856, *Writings* vol. 1 pp. 168-175 and "Logic of the Sciences," 1865, pp. 325-328.

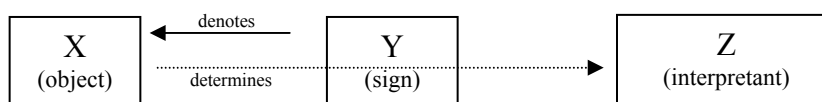
⁴⁴⁰ *Collected Papers*, 6.348 (1909)

⁴⁴¹ Olsen, L. *Peirce's Semiotic*, pp. 23-24. 1999 (M.A. Thesis, University of Houston)

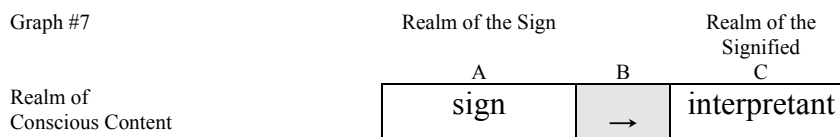
⁴⁴² Kant claims that *the principle of logical determination* applies to concepts while *the principle of complete determination* applies to things.

sense, determination is the converse relation of abstraction.⁴⁴³ Peirce's use of "determine" in his later writings on signs (like the passage above), however, often suggests the idea of causation or the communication of a form. In this sense, Peirce is thinking that determination is the converse relation of denotation, representation, or reference. A detailed investigation into Peirce's metaphysics might reveal that the same basic idea of determination is at work in both his early and late writings, but on the surface they seem to be slightly different. What does seem clear in his later writings, however, is this: if x determines z mediately through y , then y is a sign and y denotes x .

Diagrammatically we get:



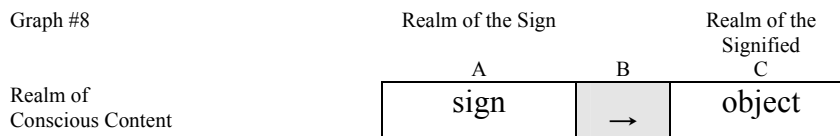
Granting only this much, it becomes evident that the basic graph cannot accommodate Peirce's conception of a sign as a mediator.⁴⁴⁴ If we place the sign in cell A1, and the interpretant in cell A3, there is no place for the object.



If we place the sign in cell A1 and the object in cell A3, there is no place for the interpretant.

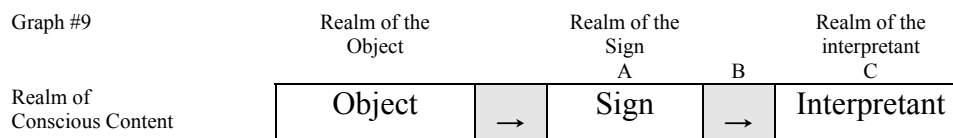
⁴⁴³ I apologize to the reader if what I have said here is obscure. But a large part of the obscurity is directly inherited from the nature of the metaphysical/epistemological project that Kant and Peirce chose to pursue. To help understand Peirce's use of "determination" in his early writings, it is helpful to compare what he is doing in "On a New List of Categories" (1867) *C.P.* 1.545-1.567 with what Aristotle is doing in *Posterior Analytics*, 81^b10-82^a20, and what Kant is doing in *Logic*, p.105, and *Critique of Pure Reason*, pp. 485-495. Once one sees that Peirce's conception of a sign originates from this type of investigation, it becomes more apparent why the conception is not wholly clear.

⁴⁴⁴ The idea that a sign is a mediator is clearly stated by Peirce in several places. For example, "Genuine mediation is the character of a Sign," *C.P.* 2.92 (1902). See also *C.P.* 1.480, 8.832, 8.177 and 6.374.

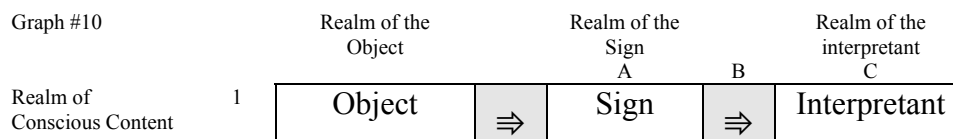


One way of viewing this problem is that the basic graph presents us with a dyadic conception of a sign, and it is incapable of handling a triadic conception like Peirce's. It is natural to wonder, however, whether there is some expanded graph than can accommodate Peirce's triadic conception.

One suggestion is to expand the graph horizontally by adding a column to the left.⁴⁴⁵



Once the object and the interpretant both have a place in the graph, it seems possible to adapt this conception to my conception by replacing the single arrows with the triple shank arrow.



Unfortunately, this horizontally expanded graph does not seem to capture Peirce's conception of a sign. In fact there is a serious problem with this graph, since it suggests that the apprehension of a sign is always immediately preceded by the apprehension of its object. This is often not the case; and if it were the case, a sign would be useless in any

⁴⁴⁵ In §6.1, the graph was expanded vertically by adding rows. Here we are adding a column to the left of the sign column (i.e., the A column).

situation in which its object is not accessible. The relation indicated by the triple shank arrow cannot be what Peirce had in mind by the relation of "determination."

Closely related to the problem of accounting for determination is the problem of accounting for denotation. According to Peirce, the object determines the sign and the sign denotes its object. In 1885 he wrote:

A sign is in a conjoint relation to the thing denoted and to the mind⁴⁴⁶

In 1903 he wrote:

... a sign is something, A, which denotes some fact or object, B, to some interpretant thought, C.⁴⁴⁷

And in 1909 he wrote:

Signs are triadic ...since a sign denotes a subject, and signifies a form of fact, which latter it brings into connection with the former.⁴⁴⁸

Unfortunately, the horizontally expanded graph doesn't seem capable of accounting for the semantic relation of denotation any better than the basic graph. And the question that we need to consider is:

(Q11) Is the relation of denotation between a sign and its object one that can be accounted for in terms of mental association?⁴⁴⁹

If this question is answered negatively, then this would constitute a serious objection to my contemporary associationist conception of a sign. Although the inability to account for Peirce's conception of a sign would not be a serious flaw of my conception of a sign (since it is not clear that Peirce's conception is correct); the inability to account for denotation would be a serious flaw. Denotation was recognized as an important semantic

⁴⁴⁶ *Collected Papers*, 3.360 (1885)

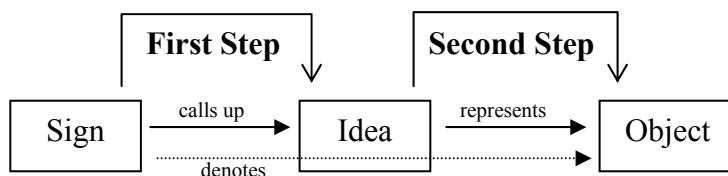
⁴⁴⁷ *Ibid.*, 1.346 (1903)

⁴⁴⁸ *Ibid.*, 6.344 (1909)

⁴⁴⁹ Here I focus only on the relation of denotation. If we follow Goodman and consider denotation to be a mere species of reference, we must ask whether the semantic relation of reference can be accounted for in terms of mental association.

relation long before Peirce started writing on signs, and it has been considered by some as the most important semantic relation for philosophy, logic, and the inquiry into the nature of truth.⁴⁵⁰

My conception of a sign, then, faces two difficult challenges. The first is to account for the relation between ideas and their objects (mental representation). The second is to account for the relation between signs and their objects (denotation). It turns out that these two problems are related, since if the former could be solved, the latter could be solved as well.⁴⁵¹ How so? Simply as follows. The semantic relation between an empirical sign and an idea is no problem for the basic graph.⁴⁵² So once the relation between an idea and its object is accounted for, the denotation of an empirical sign can be accounted for as a two-step process. The first step is from sign to idea, the second step is from idea to object. We get the following diagrammatic caricature:



Unlike the Peirce's conception where the sign mediates the object and the idea (i.e. interpretant), here the idea mediates the sign and the object. To put the theory in more

⁴⁵⁰ Quine, for example, claims that denotation (or reference) is the essential semantic relation that underlies the concept of truth, and is the most important semantic relation for philosophy. "Notes on the Theory of Reference" in *From a Logical Point of View*, pp. 130-138.

⁴⁵¹ The converse is not the case.

⁴⁵² Here I equate the empirical sign with the impression. If one chooses to equate the empirical sign with the object that causes the impression (i.e. the distal sign), then the basic graph will not suffice. Nevertheless, the vertically expanded graph will be adequate in this case.

familiar terms, the empirical sign has an intension (the associated idea), and this intension determines its extension.⁴⁵³

Since the view of denotation presented above is clearly not the Peircean one, even if my conception can account for the relation between an idea and its object, thereby accounting for denotation, it would not thereby be able to account for the Peircean conception of a sign. But again, this is not a serious objection to my conception, because accounting for the Peircean conception of a sign is not its goal. Moreover, there are reasons to suspect that Peirce's conception was never perfectly worked out, and may be somewhat confused. Consider, for example, what he wrote in a 1905 letter to Lady Welby (he was 66 years old at the time).

The truth is I went wrong from not having a formal definition all drawn up. ...I thought of a representamen as taking the place of the thing; but a sign is not a substitute. Ernst Mach has also fallen into that snare.⁴⁵⁴

We need to consider this snare into which Peirce may have fallen. But before we do, let us first consider Saussure and the basic graph.

§6.4 SAUSSURE AND THE BASIC GRAPH

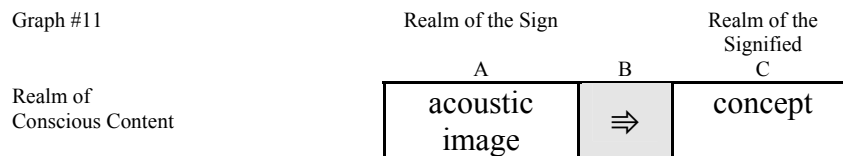
The basic graph matches up nicely with Saussure's conception of a linguistic sign. This conception is characterized by the following passage taken from his lectures on general linguistics.

⁴⁵³ This view is similar to the view held by Frege in "Ueber Sinn und Bedeutung." p. 58. Although Frege rejects the view that the intension of a sign is simply the associated idea, he holds that the intension of a sign determines its extension. Hilary Putnam, on the other hand, has argued against the view that intension determines extension "Meaning and Reference."

⁴⁵⁴ Peirce, C. and Welby, V. *Semiotic and Significs*, p. 193. It should be mentioned that this letter was a draft that was never sent.

. . .the linguistic sign is based on an association made by the mind between two very different things, but which are both mental and in the subject: an acoustic image is associated with a concept.⁴⁵⁵

Unlike Peirce's triadic conception of a sign, Saussure's conception of a sign is dyadic and is accounted for by the following variant of the basic graph.



This graph seems even more appropriate if we consider the following passage.

As has already been noted in connexion with the speech circuit, the two elements involved in the linguistic sign are both psychological and are connected in the brain by an associative link. This is a point of major importance.

A linguistic sign is not a link between a thing and a name, but between a concept and a sound pattern. The sound pattern is not actually a sound, for a sound is something physical. A sound pattern is the hearer's psychological impression of a sound, as given to him by the evidence of his senses. This sound pattern may be called a 'material' element only in that it is the representation of our sensory impressions. The sound pattern may thus be distinguished from the other element associated with it in a linguistic sign. This other element is generally of a more abstract kind: the concept.⁴⁵⁶

In agreement with the basic graph, Saussure claims that the connection between the sign and its idea (which are both mental) is based in the brain, even though the sign and the idea are both considered to be psychological entities (mental entities).⁴⁵⁷

The main conflict between the basic graph and Saussure's conception concerns the application of 'sign'. Saussure chose to apply the term to the combination of

⁴⁵⁵ Saussure's *Third Course of Lectures On General Linguistics (1910-1911)*, pg. 74. Komatsu and Harris translation.

⁴⁵⁶ Saussure, F. *Course in General Linguistics*, p.66 Harris translation.

⁴⁵⁷ Actually, Saussure's conception fits best with the basic graph of the neuro-consciousness conception of a sign. But that conception is not presented here.

elements in A1 and C1, while the basic graph applies it only to things in A1.⁴⁵⁸ The structures involved, however, are more or less the same.

All of this would be fine, were it not for the problem of denotation. Just like the basic graph, Saussure's dyadic conception of a sign is unable to explain how an empirical sign like ☞tree☜ can denote a physical object like a tree. Saussure seems to have been aware of this problem.

For some people a language, reduced to its essentials, is a nomenclature: a list of terms corresponding to a list of things. ... This conception is open to a number of objections. It assumes that ideas already exist independently of words. It does not clarify whether the name is a vocal or a psychological entity, for ARBOR might stand for either. Furthermore, it leads one to assume that the link between a name and a thing is something quite unproblematic, which is far from being the case.⁴⁵⁹

Saussure's conception of a sign can explain the semantic link between *the idea* of a word and *the idea* of the thing it denotes, but it cannot explain the semantic link between the word and the thing it denotes.⁴⁶⁰ The latter link was one that he never attempted to explain. Yet any conception of a sign (especially a linguistic sign) that cannot explain denotation must be either flawed or incomplete.⁴⁶¹

§7 IDEAS AND THEIR OBJECTS

I claimed above (§6.3) that my contemporary associationist conception of a sign could account for denotation if it could account for how ideas represent their objects.⁴⁶²

Can this be accomplished? Unfortunately there is no simple way of giving a

⁴⁵⁸ Saussure's decision to apply ☞sign☜ to the combination of elements led to the view that signs are relations, not objects. My conception rejects this move.

⁴⁵⁹ Ibid., pp. 65-66.

⁴⁶⁰ The first two things are both mental. The latter two things supposedly exist outside of a human body.

⁴⁶¹ It is worth noting two things: i) Augustine's conception cannot explain denotation either, and ii) Goodman's conception takes denotation (or reference) as a primitive.

⁴⁶² Here I am leaving open the possibility that mental representation is a semantic relation. Below I deny it.

associationist account of how ideas represent their objects.⁴⁶³ Nevertheless, something needs to be said about ideas and their objects.

We often apprehend an object through entertaining its idea. Right now, I am thinking of the Parthenon. I imagine its Doric pillars supporting its great beams. In this case, it is not the Parthenon itself that I immediately apprehend (nor is it even an impression of the Parthenon, for those who would draw the distinction). I immediately apprehend only an idea of it. But through the idea, somehow, the Parthenon is part of my conscious content.⁴⁶⁴ Because I use my idea of the Parthenon to think about the Parthenon, just as I use "Parthenon" to write about the Parthenon, it seems that there is something that the idea has in common with the word. They both seem to *stand for* the Parthenon in its absence. The word is a representative of the Parthenon in writing or speech; the idea is its representative in thought.

⁴⁶³ I do not claim that it is impossible to give an associationist explanation of how an idea represents its object, I only claim that such an explanation would be complicated and highly controversial. There are two common strategies for grounding the relationship of representation between ideas and their objects. One looks to resemblance as a ground, the other looks to causality. Thus one account runs: an idea represents an object if and only if the idea resembles the object. Another account runs: an idea represents an object if and only if that object causes the idea. The first account views ideas as icons of their objects, the second views them as indices. It should be noted, however, that the purported resemblance or causality in each case is a theoretical hypothesis, and not a directly observable fact (as Descartes famously pointed out in his Third Meditation). Even if we grant either (or both) of these hypotheses, the question must be asked: Is mere resemblance or mere causality sufficient to make one thing a representation of another? The answer seems to be: No. It is easy to think of many things which resemble each other, but neither is a representation of the other (two cheap prints of a portrait of the Duke of Wellington resemble each other more than they resemble the Duke, but they represent the Duke and not each other. Cf. Goodman, *Languages of Art*, p. 5). And there are many things which are caused by another, yet neither represents the other (baking soda causes water to become alkaline but alkaline water is not a representation of baking soda). I also maintain that resemblance and causality are not sufficient for establishing a *semantic relation*.

⁴⁶⁴ We need not worry about confusing the Parthenon with the idea of the Parthenon. As Quine points out, not even McX "confuses the Parthenon with the Parthenon-idea. The Parthenon is physical; the Parthenon-idea is mental The Parthenon is visible; the Parthenon idea is invisible. We cannot imagine two things more unlike and less liable to confusion, than the Parthenon and the Parthenon-idea." Quine, W.V., *From a Logical Point of View*, "One What There Is," p. 2

Is the relation of *standing for* a semantic relation?⁴⁶⁵ Is it, considered by itself, a relation that constitutes a sign? Here I am going to put forward the bold conjecture that it is not. In other words, I am going to maintain that A's standing for B is neither necessary nor sufficient for counting A as a sign of B.

To see that standing for is not a necessary condition for counting one thing as a sign of another, consider the case of dark clouds. Dark clouds are often a sign of rain, but the clouds do not stand for rain, they only indicate it.⁴⁶⁶ To see that standing for is not a sufficient condition for counting something as a sign, consider the following case. Suppose that Smith wants to buy a train ticket, but there is a long line. Smith asks Jones to stand in line (for him), while he goes to get a cup of coffee. In this case, Jones is not a sign of Smith. She is merely holding his place, acting as a substitute, doing the work that Smith would be doing if Smith were there. Jones may even be said to be a representative of Smith, and thus she could be said to be representing Smith in line. But if no one associates either Smith or the idea of Smith with Jones, Jones does not signify Smith—she is not a sign of Smith.⁴⁶⁷

Perhaps one reason the relation of *standing for* has been thought to be a semantic relation is that many signs do stand for things. Moreover, in many cases, it is precisely their ability to stand for things that makes these signs useful. I deny none of this. Nor do

⁴⁶⁵ By “semantic relation” I intend any relation that cannot be instantiated without signs. According to this criterion, *x signifies y* is a semantic relation, since it is impossible for *x* to signify *y* unless *x* is a sign. As will be seen below, *x denotes y* is also a semantic relation (as are *x depicts y* and *x describes y*). According to this criterion, however, *x resembles y*, *x indicates y* and *x stands for y* are not semantic relations. This is because it is possible for a mere object to *resemble*, *indicate*, or *stand for* another.

⁴⁶⁶ Also, dark clouds do not denote rain.

⁴⁶⁷ Some may wonder whether this example uses “standing for” in a different sense than what is typically meant when we say that a sign stands for its object. The fact that it is appropriate to say that Jones represents Smith suggests the contrary, however. Instead of focusing on what is different about this case and a case where a sign stands for something, try focusing on what is similar in both cases. In both cases we have one thing taking the place of another. But in the case of a sign, there is also signification involved, and signification is what is essential to a sign.

I deny that *standing for* is an important relation that needs to be studied in semiotic. On the contrary, it is of tremendous importance, especially for the theory of notation. The only thing that I deny is that *standing for* by itself constitutes a semantic relation. In other words, *standing for* is not the essence of a sign any more than *indicating* or *resembling* is the essence of a sign. And maybe this is what Peirce finally realized in 1905 when he wrote:

The truth is I went wrong from not having a formal definition all drawn up. ...I thought of a representamen as taking the place of the thing; but a sign is not a substitute. Ernst Mach has also fallen into that snare.⁴⁶⁸

A sign is not necessarily a substitute (or representative); and a substitute (or representative) is not necessarily a sign.

Once we dismiss the notion that anything that stands for something is a sign of that thing, we can likewise dismiss the notion that ideas are signs, as Ockham and Poinsett maintained. After all, ideas (or mental terms) were counted as signs because they seemed to function like written and spoken terms in their capacity to stand for things. And once we dismiss the notion that ideas are signs of their objects, my contemporary associationist conception of a sign need not give an account of how an idea stands for its object. It may simply assume that it does.

Moreover, once we dismiss the view that ideas are signs of their objects, we may just as well dismiss the view that ideas are signs at all, since the only other possible way that an idea can be a sign is if that idea tends to be associated with another idea. And even though it is possible for the basic graph to account for this kind of situation, what reasons are there to maintain that “sign” applies to such ideas? It is hard to find a precedent for this usage in the philosophical literature on signs; and certainly no

⁴⁶⁸ Peirce, C. and Welby, V. *Semiotic and Signifcics*, p. 193.

argument based on an appeal to ordinary language will work, since ordinary language would suggest the contrary. So in the absence of any opposing reason, it will be maintained that ideas are not signs. There are no non-empirical signs.

When I say that *standing for* is not a semantic relation, and that ideas are not signs of their objects, it is likely that some will be puzzled. This is because *standing for* has been considered by some to be the paradigmatic semantic relation. Thus the claim that it is not a semantic relation at all will be seen by some as either uprooting the very foundations of semiotic, or changing the subject. Because of this, a bit more must be said about what is entailed by the claim that *standing for* is not a semantic relation.

If the claim were merely that *signifying* is a different semantic relation than *standing for*, few would likely take issue with it, for people generally recognize a difference between sense and reference, and they can project a similar kind of distinction on the former relations.⁴⁶⁹ If the claim were merely that the essence of a sign is to signify something (as Augustine says in *De Magistro*), again few would take issue. But when these two uncontroversial claims are combined, they entail that it is not the essence of a sign to stand for something. At this point suspicion arises. One might ask: Why can't it be the essence of a sign both to signify and to stand for something? The best response to this question is that we have clear examples of signs that do not stand for anything, so standing for something cannot be essential to a sign.⁴⁷⁰ Another might question: Why can't *standing for* be the essence of some signs, while *signifying* is the essence of others?

⁴⁶⁹ The distinction between sense and reference is often associated with the work of Frege. But the distinction does not originate with Frege. The distinction is marked in Mill's *System of Logic*, for example, by the terms "denotation" and "connotation". And the distinction was recognized not only by medieval logicians, but also by the ancient stoic logicians, who recognized both the referent of the sign and its *lektón* (see Kneal and Kneal, *The Development of Logic*, p. 140)

⁴⁷⁰ The case of dark clouds as a sign of rain shows this, since the clouds do not stand for rain.

The best response to this question is that if there is no common structure that both kinds of signs share, then it is misleading to call them both signs. To do so would be to use "sign" in an ambiguous way, and to give the appearance of unity where there is no unity.

The contemporary associationist conception of a sign is grounded in the idea that Augustine's conception of a sign was on the right track. When Ockham and Poinset changed Augustine's concept of a sign so as to include ideas or mental terms, they obviously broadened the concept of a sign; and they did so either on the basis of a false analogy, or because they took *standing for something* as the essential characteristic of a sign.⁴⁷¹ My conception rejects that broadening for the reasons mentioned above and returns to the narrower concept held by Augustine. *Standing for* and *signifying* are not the same. And only the latter characterizes what is essential to a sign.

§8 IDEAS AND THINGS THAT FALL UNDER THEM

If an idea *stands for* its object, then its object *falls under* the idea.⁴⁷² Like in the case of the relation of *standing for*, no attempt will be made to explain the relation of *falling under* in terms of mental association.⁴⁷³ Nevertheless it needs to be acknowledged that in the case where an idea is general, many things may fall under the idea. The Parthenon falls under my idea of a building, because my idea of the Parthenon involves my idea of a building. The Empire State Building also falls under my idea of a

⁴⁷¹ In Poinset's case this is apparent because he defines a sign in terms of representation. A sign is "that which **represents** something other than itself to a cognitive power." Poinset, *Tractatus De Signis*, p. 25.

⁴⁷² The converse is not necessarily the case.

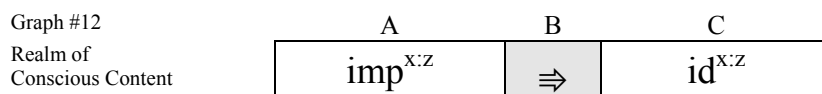
⁴⁷³ It may be conjectured that there is some connection between the tendency of an object to give rise to an idea and the object falling under that idea. But whatever that connection is, it is unlikely that one is necessary and sufficient for the other.

building. But in accordance with what was said above, an idea is not a sign of the things that fall under it. *Falling under* is not a semantic relation; and ideas are neither signs of the things that fall under them, nor of the things they stand for.

§9 SIGNS AND THE BASIC ACT OF PERCEPTION

According to my conception of a sign, ideas are not signs of their corresponding objects. But is it a consequence of the my conception that objects are signs of their corresponding ideas? The preliminary version of my definition suggests that the tendency to call up an idea is characteristic of a sign. This, combined with the fact that the experience of an object usually calls up the idea of that object, leads to the conclusion that objects are signs of their ideas. In order to avoid this result, the nature of perception needs to be more closely examined.

The basic act of perception can be presented by the following variant of basic graph.⁴⁷⁴



The general structure of this graph is identical to graph #2; and this isomorphism is what raises the question about whether signs are involved in the basic act of perception. There is, however, an important difference between graph #2 and this one. The difference is one of content, not structure. In this case, the idea that z tends to associate with x is simply z 's idea of x .

⁴⁷⁴ What this graph suggests is that the basic act of perceiving an empirical object involves both an impression and an idea. If one has an impression of an object without the corresponding idea, one does not perceive the object. And if one has the idea without the corresponding impression, one does not perceive the object.

There are at least two different ways in which ideas can be associated with an empirical object. First, the experience of an empirical object usually calls up the idea of that object. For example, the experience of a tree calls up the idea of a tree. This is a basic act of perception.⁴⁷⁵ Second, the experience of an empirical object can call up an idea of a completely different object. For example, there is a tendency in speakers of English to associate the idea of a tree with the experience of “tree”. These two situations are clearly different, and only the latter case involves a sign. In other words, in order for an object x to be a sign for an individual z , z must have a tendency to associate an idea y with x , and y (which is an idea) must not be the same as the idea of x . Since the basic act of perception associates an object with the idea of that object, it does not involve any signs.⁴⁷⁶

This account of the difference between perception and semiosis, which is clear enough in its rough outline, gives rise to an interesting problem—the problem of the semiotic threshold. If there are degrees of difference between ideas, how different does the associated idea have to be from the idea of the object in order for the object to be counted as a sign? Is the slightest difference sufficient? Or must there be a certain degree of difference? To avoid complications that could only be resolved by a more detailed investigation of ideas and their differences, it will be maintained that any

⁴⁷⁵ Those who do not distinguish experience from perception will likely find this account puzzling. According to the way I use “perception” and “experience”, one can experience something but not perceive it. This happens in cases where we experience something but have no idea what it is. For example, suppose I see something in the field, but I cannot say whether it is a man or a rock. If it turns out that it is a man, then I have an experience of a man, but I do not perceive a man. And if we consider animals that have sense experience but are incapable of having ideas, we would say (in the case of the tree) that the animal experiences a tree, but it does not perceive a tree.

⁴⁷⁶ If one insisted on calling x a sign because, when apprehended, it brings the idea of x to mind, this could perhaps be tolerated. But then a distinction would need to be made between these kinds of signs, which might be called *degenerate signs* and the other type which might be called *proper signs*. There are two reasons for denying x the status of a sign in this case. First, it seems to violate the rule of propriety. We do not ordinarily apply “sign” to every object we perceive. Second, it opens the door to pansemiosis (every object we perceive would be a sign).

difference in the associated idea and the idea of the object constitutes a case of semiosis. Where the degree of difference is not very great, however, the degree of semiosis will not be very great either. Semiosis comes in degrees. And perception can be thought of as semiosis to the null degree. In addition to shedding light on the evolution of signs, this account seems to be similar to what Peirce was thinking when he wrote: "divest the thought of signs, and it becomes at best direct perception."⁴⁷⁷

§10 FROM MERE OBJECTS TO SIGNS AND BACK AGAIN

When we experience people speaking a language we do not understand, we perceive their words as sounds.⁴⁷⁸ We may infer that these sounds have a meaning for others, but they have no meaning for us. For us, they are mere sounds.⁴⁷⁹ But gradually, if we stay immersed in their culture long enough, these mere sounds acquire meaning for us. On the other hand, when a familiar word is repeated over and over again, a strange phenomenon often occurs—the word loses its meaning for us and begins to strike us as a mere sound.⁴⁸⁰ The first phenomenon involves the transition from mere perception to semiosis; the second involves the transition from semiosis to mere perception.

Light is shed on these phenomena when we consider that humans form a tendency to associate the idea of *x* with the idea of *y*, if *x* and *y* are repeatedly associated in their experiences. In the case of learning a new language, a sound (or kind of sound)

⁴⁷⁷ Peirce, C. S. *The Charles S. Peirce Papers [in]The Houghton Library, Harvard University*. Reel 32 S27 (undated).

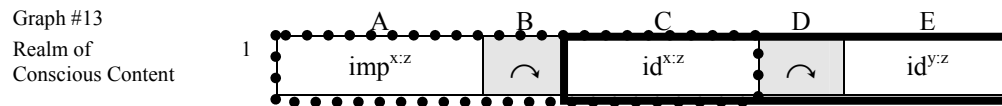
⁴⁷⁸ This is a point discussed by Saussure, *Course in General Linguistics*, p. 13.

⁴⁷⁹ When I say that they are mere sounds, I am not saying that we are incapable of inferring that these sounds are signs for others. For we experience these sounds in a context, and we often infer from that context that these sounds have signification for others. Thus, we *infer* that these sounds have semantic properties. Nevertheless, we experience (at first) only their objectic properties, and seek to discover their semantic properties.

⁴⁸⁰ This is a phenomenon discussed by Wittgenstein, *Philosophical Investigations*, p. 214.

repeatedly occurs in the presence of an object (or kind of object), and the person begins to develop a mental tendency to associate the idea of the sound with the idea of the object. Once this tendency to associate ideas is formed, any object which tends to give rise to the first idea becomes mediately disposed to give rise to the second. The first step involves the association of an object with its idea and is accounted for by the graph of perception; the second step, involves the association of one idea with another idea and is accounted for by the basic graph.

Although neither graph #12 (the graph of perception) nor graph #4 (a variant of the basic graph) involve any signs, the two can be merged to help explain how mere objects become signs. The following graph is created by merging the graph of perception (enclosed in a dotted border) with a variant of the basic graph (enclosed in a thick black border).



In this merged graph, z 's impression of x tends to activate z 's idea of x (the perception graph), and z 's idea of x tends to activate z 's idea of y (the basic graph). So z tends to associate the impression of x with the idea of y , but only mediately through the idea of x . The idea of y can be considered *the signification* of x for z . It can also be considered the significant idea or the interpretant. But x does not signify the idea of y . Why not? Because a sign does not signify its signification. It signifies whatever (if anything) its signification stands for. So x signifies y for z , since the idea of y is the signification of x for z and the idea of y stands for y . Stated as a definition:

x signifies y for $z \equiv$ z 's impression of x tends to activate (either mediately through the idea of x or immediately) z 's idea of y , and z 's idea of y is different from z 's idea of x .

To help flesh out this definition of signifying along with the merged graph, let us consider an example. Let us suppose that through the repeated experience of rain accompanying dark clouds, Smith has formed a tendency to associate the idea of dark clouds with the idea of rain. Now suppose that Smith (z) is looking out his window on some occasion and dark clouds (x) are up in the sky. Smith, who is looking out his window, has an impression of dark clouds. This impression is then associated with his idea of dark clouds. Smith now perceives the dark clouds as dark clouds. His idea of dark clouds is then associated with his idea of rain, and Smith thinks of rain. Since Smith's idea of rain stands for rain in his thought, the dark clouds signify rain for Smith.

It may be observed that in some cases, particularly with words, the association of the impression of a sign with its significant idea (i.e. its signification) is often so quick that it is questionable whether the idea of the sign (as object) ever enters into consciousness. In many cases x gives rise to the idea of y as if x were y itself. Locke acknowledges this phenomenon in his *Essay*:

There comes by constant use, to be such a Connexion between certain Sounds, and the Ideas, as if the Objects themselves, which are apt to produce them, did actually affect the Senses.⁴⁸¹

We may conjecture that the impression of x eventually becomes so intimately associated with the idea of y that the middle man (the idea of x) drops out. In such cases the impression of x becomes disposed to give rise to the idea of y directly. In these types of cases the sign is apprehended only as an impression, and never perceived as an object,

⁴⁸¹ Locke, J. *An Essay Concerning Human Understanding*, p. 407 (Book III, Chapter 2, §7).

since (by hypothesis) the perception of an object requires that one apprehend both the impression and the idea of the object.

When we first hear a foreign word we only perceive it as a mere object, and we are in a null degree of semiosis; once we have mastered it, we no longer perceive the sign as an object, and we have entered into the highest degree of semiosis (pure semiosis).

Now, reconsidering the case a familiar word, we find that if we repeat the word over and over, the word loses its meaning.⁴⁸² The idea of the word itself starts to force its way back into our awareness and we begin to perceive the word as a mere object. In this case semiosis devolves into the mere perception of a sound (or even the mere experience of a sound), and we characterize this phenomenon as a case in which a word loses its meaning. This loss of meaning can be attributed to the same general mechanism by which meaning is acquired. The acquisition of meaning involves the association of two different things through their repeated conjunction; the loss of meaning involves the association of a something with itself through its repeated conjunction with itself.⁴⁸³ This is one way my conception of a sign can account for these important semiotic phenomena.

⁴⁸² Here I come back to this phenomenon that I mentioned earlier. Now, however, I attempt to show how the theory (which was developed subsequently) can account for it.

⁴⁸³ Some may wonder whether it is possible for something to be conjoined with itself. Strictly speaking, a given token of a type of thing cannot be conjoined with itself in space, but two tokens of the same type can be conjoined with each other in space. And if we acknowledge that conjunction is not only a relation that occurs in space, but that it is also possible for things to be conjoined over time, even a single token of a type can be conjoined with itself. Consider, for example, the case in which tokens of words are written on index cards. It is possible to flash the same card over and over, and this would constitute a kind of repeated conjunction of a token with itself.

§11 SIGNIFICATION VS. MEANING

My conception of a sign offers an account of signification. But this account may strike some as too individualistic. It equates the signification of a sign for a given individual with the idea that this individual tends to associate with the sign. Here, some might object to this account on the grounds that language and its meanings are—in some important way—social phenomena; and that this account of signification fails to say anything about the social dimension of signs. Something like this objection was well-stated by Frege in "Ueber Sinn und Bedeutung":

The [denotation] and sense of a sign are to be distinguished from the associated idea. If what a sign [denotes] is an object perceivable by the senses, my idea of it is an internal image, arising from memories of sense impressions which I have had and acts, both internal and external, which I have performed. Such an idea is often imbued with feeling; the clarity of its separate parts varies and oscillates. The same sense is not always connected, even in the same man, with the same idea. The idea is subjective: one man's idea is not that of another. There results, as a matter of course, a variety of differences in the ideas associated with the same sense. A painter, a horseman, and a zoologist will probably connect different ideas with the name 'Bucephalus.' This constitutes an essential distinction between the idea and the sign's sense, which may be the common property of many people, and so is not a part or a mode of the individual mind. For one can hardly deny that mankind has a common store of thoughts which is transmitted from one generation to another.

In light of this, one need have no scruples in speaking simply of *the* sense, whereas in the case of an idea one must, strictly speaking, add whom it belongs to and at what time.⁴⁸⁴

Frege's main point in this passage is that the sense of a sign (its Sinn) is something unitary, public, and relatively invariable from context to context, whereas the idea that is associated with a sign not only varies from person to person, but also varies for a given person from context to context. Because of this, the sense of a sign cannot be the same as

⁴⁸⁴ Frege, G. "Ueber Sinn und Bedeutung," pp. 59-60. I have inserted "denotation" where the original German version has "Bedeutung", and the Geach/Black translation has "meaning". Some translators have used "nominatum" or "reference" in this place. Because I use "meaning" in a way that is completely different from the way that Frege uses "Bedeutung", this change is necessary in order to avoid confusion.

the associated idea. The associated idea is something personal. The sense is something public. And the question is: How does what is personal relate to what is public? The inability to provide any answer to this question would constitute an objection to my conception of a sign.

If we turn to Saussure, we find that he also was concerned with the relationship between the individual and the social aspects of language. And his thoughts on the subject provide a solution to the problem at hand. I have boldfaced the parts of the following passage which are of particular interest.

... as soon as we leave isolated signs [the associative faculty] plays the dominant role in the organization of language as a system.

But to understand clearly the role of the associative and co-ordinating faculty, we must leave the individual act, which is only the embryo of speech, and approach the social fact.

Among all the individuals that are linked together by speech, some sort of average will be set up: all will reproduce—not exactly of course, but approximately—the same signs united with the same concepts.

How does the social crystallization of language come about? Which parts of the circuit are involved? For all parts probably do not participate equally in it.

The non-psychological part can be rejected from the outset. When we hear people speaking a language we do not know, we perceive the sounds but remain outside the social fact because we do not understand them.

Neither is the psychological part of the circuit wholly responsible: the executive side is missing, for execution is never carried out by the collectivity. Execution is always individual, and the individual is always its master: I shall call the executive side *speaking* [*parole*].

Through the functioning of the receptive and co-ordinating faculties, impressions that are perceptibly the same for all are made on the minds of speakers. How can that social product be pictured in such a way that language will stand apart from everything else? **If we could embrace the sum of word-images stored in the minds of all individuals, we could identify the social bond that constitutes language.** It is a storehouse filled by the members of a given community through their active use of speaking, **a grammatical system that has a potential existence in each brain, or, more specifically, in the brains of a group of individuals. For language is not complete in any speaker; it exists perfectly only within a collectivity.**

In separating language from speaking we are at the same time separating: (1) what is social from what is individual; and (2) what is essential from what is accessory and more or less accidental.⁴⁸⁵

My understanding of what Saussure is proposing in this passage is that the social signification of a sign is a function of individual significations. It is an average, or a mean, of individual significations. This interpretation is reinforced if we consider a different translation of the first boldfaced part of the passage:

All the individuals linguistically linked in this manner will establish among themselves a kind of mean; all of them will reproduce—doubtless not exactly, but approximately—the same signs linked to the same concepts.⁴⁸⁶

Here I want to focus and reflect on “mean”. This word has many different uses (or, if I dare say it, it has many different meanings). It can be a noun. It can be a verb. It can be an adjective. Etymologists recognize three distinct words in English, all with different origins.

English has three distinct words *mean*. The oldest, 'intend' [OE]m goes back via prehistoric West Germanic *mainjan* to the Indo-European base *men* 'think' (source also of English *memory*, *mention*, *mind*, etc).

The adjective 'petty, stingy' originally meant 'common, shared by all.' It comes from a prehistoric Germanic *gamainiz* (source also of German *gemein* 'common, shared'), which was formed from the collective prefix *ga* and *mainiz*. This went back to an Indo-European base *moi*, *mei* 'change, exchange,' which also lies behind English *mad*, *moult*, *mutate*, *mutual*, and the second syllable of *common*. *Mean's* semantic history can be traced from 'common to all' via 'inferior' and 'low', 'ignoble' to 'petty.'

The adjective 'intermediate, average' came via Anglo-Norman *meen* and Old French *meien* from Latin *medianus* (source of English *median*), a derivative of *medius* 'middle' (source of English *medium*). It forms the basis of the plural noun *means* 'method', and of the compound adverb *meanwhile*.⁴⁸⁷

⁴⁸⁵ Saussure, F. "The Linguistic Sign," pp. 32-33.

⁴⁸⁶ Saussure, F. *Course in General Linguistics*, p. 13. (Harris translation)

⁴⁸⁷ Ayto, J. *Dictionary of Word Origins*, p. 343. Also see Ernest Weekly's *An Etymological Dictionary of Modern English*, for a similar analysis.

Now although the etymologists claim that there are three distinct meanings of “mean”, all stemming from different origins, Saussure's account of meaning surprisingly involves all three. The social *meaning* of a sign (mean in the first sense) is something which is *common to all* the individual ideas associated with it (mean in the second sense); it is an *average* of associated ideas (mean in the third sense). And I propose that this is how we should use “meaning”. Meaning is not to be confused with signification. Meaning is not to be confused with denotation. The meaning of a sign is an abstract average of significations.⁴⁸⁸

According to my conception, the meaning of a word for a given community is a function of the various meanings which the individuals in that community associate with it. And the meaning of a word for an individual is a function of the various ideas that the individual associates with it over time. But it would be naïve to think that we can precisely specify this averaging function and calculate the meaning of a given word for an individual or social group. Figuring out the meaning of a word for a person or a group of people is not as simple as figuring out the mean, median and mode of a set of test scores. And the reasons for this are somewhat obvious. The first problem (which might be called the problem of access) is that unlike a set of test scores, we have no direct access to the ideas of others. As Frege says:

If two persons picture the same thing, each still has his own idea. It is indeed sometimes possible to establish differences in the ideas, or even in the sensations of different men; but an exact comparison is not possible, because we cannot have both ideas together in the same consciousness.⁴⁸⁹

⁴⁸⁸ If a catchy epigram is needed, one might use: “Meaning is a democratic affair”. But this slogan is likely to lead to a misunderstanding if it is not appended with “but signification need not be”.

⁴⁸⁹ Frege. G. "Ueber Sinn und Bedeutung," p. 60.

The second problem (which might be called the problem of incommensurability) is that there is no simple way of averaging ideas.⁴⁹⁰ The difference between two numbers is always a number; the sum of two numbers is always a number; dividing one number by another number results in a number (except for zero); and the natural numbers are ordered by the familiar relation: *x is less than y*. These relationships do not hold for ideas. The third problem (which might be called the weighting problem) is that even though the proposal is to view meaning as involving some kind of averaging function, it is unlikely that all ideas are similarly weighted in the calculation. On the individual level, some associations may be more important than others because they occurred more recently than others, or because of the context in which they occur. The idea that Smith associated with “whale” as a child may factor into his present idea of a whale, but his more recent associations which are influenced by reading an encyclopedia article on whales is likely to have more impact on his individual meaning. And it is likely that the same problem will exist on the social level. Both the mechanic and chemist have their individual meanings of “gold”. But these ideas are probably not the same; and the idea of the latter is likely to weigh more in the social meaning of the word than the idea of the former.⁴⁹¹

It is not my goal to present a detailed theory about how the meanings of words are determined on either the individual or social level. The main goal is to draw a distinction between signification and meaning, and to stress that (unlike signification) the meaning

⁴⁹⁰ If we had access to a group of ideas, we could easily figure out the mode (the idea that occurs most often), but not the median or the mean. The problem of incommensurability raises problems only for figuring out the average idea in the sense of the median or the mean.

⁴⁹¹ Some may find this idea absurd. Perhaps it is mistaken. But in any event, it is reminiscent of Hillary Putnam's division of linguistic labor.

of a sign always involves some kind of averaging of ideas.⁴⁹² In rough outline, the theory proposes that the meaning of a word for an individual is a function of all the ideas that the individual has associated with the word; and the meaning of a word for a group of people, at a given time, is a function of the meanings of the individuals in that group at that time. But to say that social meaning is a function of individual meanings is not to exclude the possibility that individual meanings are in some ways influenced by social meaning. Without doubt, there is a kind of mutual influence that takes place between individual and social meanings. Yet, since social meaning is a function of individual meanings, to say that social meaning influences individual meanings is merely to say that one's individual meanings are influenced by the individual meanings of others. This influence is a good thing too, for if individual meanings were not influenced by the individual meanings of others, communication would be very difficult and ineffective, if not impossible.

The social nature of meaning goes a long way toward explaining some of its other properties. As an abstract average of ideas, the social meaning of a word is often vague and indeterminate. This is not simply because all the ideas associated with the word are vague and indeterminate. Vagueness can creep in by averaging clear ideas with confused ones, or even perhaps by averaging only clear ideas that differ from one another.⁴⁹³ On the bright side, the fact that social meanings are some kind of average of actual individual

⁴⁹² The average in this case is probably best thought of as the mode, not the median or the mean. Nevertheless, a Galtonian photograph is a kind of average of photographs, and this average is most like a mean photograph (not the mode or the median). It is certainly not the mode, because it is not identical to any of the originals; and it is not the median, for there is no unique way of ordering photographs.

⁴⁹³ Statisticians tell us that the average American family has 2.5 children. One might say, "this is absurd because no one has 2.5 children!" But this objection misunderstands what the statistician is saying.

cases guarantees that in *most* cases (but certainly not in all) there will be some similarity between the social meaning and a given individual's meaning.

Two other properties of social meaning that are explained by this account are its variability and invariability. As Saussure pointed out, the social meanings of words change over time—they are variable (or mutable). This, he claims, is inevitable because the connection between a linguistic sign and its associated idea is arbitrary and grounded only in the brains of individuals that make up the linguistic community. And since a linguistic community—like the ship of Theseus—is continually undergoing a replacement of parts, as some individuals pass away and new ones come to be, any slight difference in the individual meanings of those who come and go will manifest itself as a slight difference in meaning on the social level. These many slight changes over a long period of time, however, often result in a complete change of meaning.

At the same time, Saussure claims that social meaning is invariable or immune to sudden change; and this, once again, is because the connection between a linguistic sign and its social meaning is grounded in the brains of all the individuals in that linguistic community. To change the social meaning of a word on a whim in a radical way would require that we radically change the neurological dispositions that ground the association of the word and its idea (and change them in a great number of individuals in the linguistic community). This cannot be done, according to Saussure, because those dispositions are firmly established.⁴⁹⁴

⁴⁹⁴ Saussure was writing before the age of mass communication. The advent of radio, television, and the internet pose interesting questions for his thesis of the invariability of social meaning. Television is a particularly interesting case because it reaches a large audience but its content is controlled by a small number of people who often have an interest in changing or forming certain associations in the brains of the general public. Consider, for example, the L-word.

Most philosophers would agree that meaning is a semantic relation. But the precise nature of that semantic relation is often unclear. Is the meaning of a sign its sense? Is the meaning of a sign its denotatum? Is the meaning of a sign its signification? Is the meaning of a sign its use in a language game? Is it some combination of these? My conception of a sign answers all of these questions with a negative. The meaning of a sign, according to my conception, is a kind of average of associated ideas. As a result, the meaning of "meaning" in the English language is something quite different from the stipulated signification of "meaning" proposed here.

§12 CONSTRUCTING DENOTATION

Not all signs denote something. This is widely acknowledged and supported by numerous examples. First, there are natural signs like dark clouds. Dark clouds are a sign of rain, but they do not denote rain. Second, there are words like "if", "because", and "to", conventional signs that do not denote anything because it is not in their nature to do so. Third, there are many conventional signs, like "nothing" and "the present King of France", which have the nature of "denoting signs" but which do not denote anything.⁴⁹⁵ There are plenty of signs that do not denote anything, and denotation is far from being an essential characteristic of signs in general.

Nevertheless, if an account of the concept of a sign cannot offer any explanation of how denotation works, it would be either flawed or incomplete. For even though many signs do not denote anything, there is an important class of signs that do denote;

⁴⁹⁵ Here I am following Russell's lead. Russell claims that "a phrase may be denoting, and yet not denote anything." "On Denoting" p. 41.

and understanding how denotation works is crucial to understanding how language connects with the world.

The first question that must be addressed before an account of denotation is formulated is: What kinds of signs are normally thought to be denoting signs? According to Mill, names are denoting signs, and few would take issue with this claim.⁴⁹⁶ But by “name” Mill does not mean only proper names, nor even only nouns. Adjectives like “white” are also names, as are phrases like “The place which the wisdom or policy of antiquity had destined for the residence of the Abyssinian princes”.⁴⁹⁷ To summarize Mill's position, the class of denoting signs is the same as the class of Categorematic terms, and includes all and only signs that can function as either the subject term or the predicate term of a categorical statement. This is the concept of a denoting sign that will be explicated in what follows.

In order for x to denote y , x must be a sign. This means that x must signify something (perhaps y). But x 's signifying something is only a necessary condition of x 's denoting y . There are other necessary conditions that must be met if x is to denote y . The second necessary condition is that y must fall under the signification of x . The third necessary condition is that there is a convention of using x to stand for y . More specifically, x denotes y for z if, and only if,

- ia) z 's impression of x tends to give rise to z 's idea of w ,
- ib) the idea of w is not the idea of x
- ii) y falls under the idea of w .
- iii) there is a convention of using x (or tokens of type x) to stand for y (or things of type y)

⁴⁹⁶ Mill, J.S., *A System of Logic*, pp. 30-31. But also see all of Chapter 2 and Chapter 3 of Book One.

⁴⁹⁷ *Ibid*, p. 31.

It might be wondered why a fourth variable (w) occurs in this account. The fourth variable is needed to cover the case in which x is a general term and its significant idea (the idea of w) is a general idea. In this case, many different things will fall under the idea of w , and x will denote all of them. This account of denotation may be better understood through an example.

Consider the objects on the following display lines.

ODL(3.4.1) ■
ODL(3.4.2) **square**

The object on ODL(3.4.2) denotes the object on ODL(3.4.1) for English speaking people.⁴⁹⁸ It does so, on this account, because:

- ia) a literate English speaking person's apprehension of the object on ODL(3.4.2) tends to give rise to his idea of a square,⁴⁹⁹
- ib) the idea of a square is not the idea of the object on ODL(3.4.2)
- ii) the object on ODL(3.4.1) falls under the idea of a square,
- iii) there is a convention of using the tokens of the type of object on ODL(3.4.2) to stand for tokens of the type of object on ODL(3.4.1).

The importance of condition (iii) should not be underestimated. If we consider, once again, dark clouds and rain, it will be seen that conditions (1a-ii) are met:

- ia) Smith's apprehension of dark clouds tends to give rise to his idea of rain,
- ib) the idea of rain is not the idea of dark clouds.
- ii) rain falls under the idea of rain,

Condition (iii), however, is not met in this case.

- iii) there is no convention of using dark clouds to stand for rain.⁵⁰⁰

⁴⁹⁸ Strictly speaking, I should say that it *would* denote in this way if taken off its lines.

⁴⁹⁹ I am using "literate" in this case in the sense of "capable of reading and writing". There are English speaking people who cannot read.

⁵⁰⁰ Here some may object to this on the grounds that weather forecasters often use dark clouds to stand for rain. The reply to this objection is obvious. They do not use dark clouds; they use icons of dark clouds. A real dark cloud is not something that we can easily manipulate, and that is one reason there is no convention of using it to stand for something.

As a result, dark clouds are a sign of rain, for Smith, but they do not denote rain.

According to this account, denotation is not a simple semantic relation; and whether anything is denoted by a denoting sign depends on two conditions:

- 1) whether there is anything that falls under the sign's significant idea,
- 2) whether there is a convention of using the sign to stand for the things that fall under the significant idea.

These two conditions are completely independent of each other. The case of the dark clouds shows that the first can be met while the second is not met. The case of non-denoting terms like "nothing" or "the present King of France" show that the second can be met without the first. However, if either of these conditions is not fulfilled, the corresponding sign does not denote anything.

One final point seems worthy of mention. A particular token of a sign may denote, even when it is not being used to stand for anything it denotes. $\forall \in \text{square}$, for example, denotes the object on ODL(4.3.1), but it is not currently being used to stand for that object. A particular token of a sign need not actually stand for anything in order to denote. All that is required is that there is a convention of using signs of that type to stand for the things that fall under its significant idea. And there can be a convention of using a sign to stand for things, even when a particular token of the sign is not being used to stand for anything.

Conventions usually involve something social; and the denotation of most signs is grounded in a social convention. But not all conventions are social in the sense that they involve more than one person. A convention is a rule of conduct, and anyone who has ever worked on developing a notation from scratch will quickly realize that one must establish conventions for himself regarding the denotation of his signs. To be sure,

establishing and following these conventions is not always the easiest thing to do, but doing so is possible. To what degree this last statement conflicts with Wittgenstein's arguments against the possibility of a private language, or his reflections on following a rule, I will not investigate here.

§13 SIGNIFICATION AND CONTEXT

When Frege distinguished the sense of a sign from the idea associated with it, he did so on the grounds that different people associate different ideas with the same sign. But he also noted that "the same sense is not always connected, even in the same man, with the same idea."⁵⁰¹ If we recognize, in conjunction with what Frege says, that some signs have more than one sense (homonyms), it turns out that an individual may associate many different ideas with a single sign or object. And this, beyond following from what is said above, is what we seem to find if we consider a number of examples.

Consider, for example, "bank". The signification of this word will vary relative to its context among other signs, as in the case of "I'm going to the bank to withdraw all of my money before the economic collapse occurs." and "I'm going to the bank to catch a fish." Also consider "bats". The idea associated with this word will vary relative to its context among mere objects, as in the case where it is placed among certain items in a sporting goods store and the case where it is placed on an exhibit in a zoo. Although both of these cases involve homographs, they nevertheless suggest that a complete account of signification must take into consideration the context in which a sign occurs.

⁵⁰¹ Frege, G. "Ueber Sinn und Bedeutung," pp. 59.

The following cases also suggest that the context in which a sign occurs influences its signification. Suppose I point to an red triangle and pronounce a token of color. In this case it is likely that the idea of red will come to mind. If I point to a blue square and pronounce a token of color, it is likely that the idea of blue will come to mind. Does this suggest that the signification of a token of color (which is not a homonym) is relative to the context in which the sign occurs? More generally, is it always mistaken to talk of *the* signification of a sign, if no context is mentioned? At first glance it might appear so.

Yet, can we really say in these cases, with any degree of certainty, that the general idea of color doesn't come to our mind before the idea of red or the idea of blue? If I pronounced a token of shape instead of color in these cases, wouldn't we expect completely different ideas to come to mind? Of course. And the best explanation for the difference is that that the general ideas of shape and color must be doing some work in these cases. We can suppose that (i) the general idea of color is combined with (ii) the pointing finger and (iii) the object of ostension to narrow the signification. Thus, the idea of red is not the signification of $\exists \in$ color in the first case, but it is the signification of the conglomerate which is formed by the word, the pointing finger (which are both signs) and the mere object.⁵⁰² Indeed, this must appear a strange conglomeration to anyone

⁵⁰² In Goodman's terms, this is a case of a compound composite sign. It is syntactically composite because it involves more than one sign. It is semantically compound because its signification is a product of the signification of its parts. See *Languages of Art*, pp. 143-146. The case we are considering, however, involves something that Goodman does not consider. It involves the mixture of completely different kinds of signs (linguistic and gesture) with a mere object; and it is questionable whether his concept of a symbol

who focuses only on language and thinks of signification as a property of words or of conventional signs. But signification is not limited to words, nor are its reactants and catalysts limited to signs. The investigation of how the combination of signs with signs, or signs with mere objects, gives rise to different kinds of significations would be a kind of *chemistry of signs*. And just as the structure of the atom is the foundation for the current understanding of the chemistry of matter, the structure of a sign must be the foundation for our understanding of the chemistry of signs.

The main question that we are exploring is whether context is something that is essential to signification. There is no doubt that context influences signification in some cases. What is unclear is whether all signs have signification only relative to a context—whether it is a mistake to talk about *the* significance of a sign for an individual without mentioning context. In order to have any hope of resolving this issue, we must briefly consider the nature of context.

Without going into a complete and detailed analysis of context, we can recognize that particular signs occur in both a spatial and temporal context. In its spatial context a sign may be surrounded by many other signs and mere objects. In its temporal context a sign may be apprehended before, after, or at the same time as many other signs and mere objects. But the number of things falling within the spatio-temporal context of a sign is not a constant. Some contexts are more sparse or more dense than others. And once we realize that the density of a context comes in degrees, we must wonder: how sparse can we go? Is there something like a null context, containing nothing but the sign itself?

system can account for it. Following what was said in Chapter 1, Part II, §2, this case might be considered as an example of a heterogeneous construct.

The continuity of space and time, and the continuity of our experience of them, seem to rule out anything like a true null context. All signs are apprehended in space and time, and if there appears to be a vacuum in the immediate vicinity of a sign, we need only look further in one direction or another to find something. If we place a token of "color" on an otherwise blank sheet of paper, we need only look beyond the whiteness of the paper to find other things. But what if we place Smith in a sensory deprivation tank while monitoring his neural activity until it reaches some kind of minimum, and then we electronically introduce a single token of "color" through an audio speaker? Will that token occur in a null context? Even in this extreme case we need only go back to the time before Smith got into the tank to find signs and mere objects. A true null context is both a practical and a theoretical impossibility.

If the null context is an impossibility, what about the next best thing: a minimal context? Because the density of a context (the number of things in it) comes in degrees, it seems that there must be something like a minimal context. And if so, the signification of a sign for an individual can be defined as the idea that the individual tends to associate with the sign when he apprehends the sign in the minimal context. This all sounds promising; and the only rough spots which remain are i) defining the minimal context for a sign, and ii) proving that it is unique. For if the second condition is not met (there is more than one minimal context), then it may well happen that Smith tends to associate one idea with a sign in one minimal context, but a different idea with the same sign in a different minimal context. And if this were the case, it would never be proper to talk about *the* signification of a sign for Smith simpliciter. Instead, we would always have to talk about *the* signification of a sign for Smith in a given context.

I am not going to take a stand on whether there is a unique minimal context in which the signification of a sign for an individual occurs pure and unadulterated. I am not even going to attempt to define what a minimal context is. I will only suggest three necessary conditions for a minimal context:

- i) a minimal context of a sign should not contain any other signs in the immediate spatio-temporal vicinity.
- ii) the minimal context for a sign should not include any objects that the sign either signifies or denotes.⁵⁰³
- iii) the individual should not be able to know or anticipate which sign will be placed in the context.

With this much said, I leave the project of working out a precise notion of a minimal context for a different time.⁵⁰⁴

§14 A FINAL VERSION OF THIS CONTEMPORARY ASSOCIATIONIST DEFINITION OF A SIGN

After considering some of the limitations of the preliminary version of the my definition, we are now ready to set out a final version. The definition, stated in quasi-English terms, runs:

D 3.9 (x is a sign) \equiv x is an empirical object, an idea y and a person z, and z has a tendency to associate y with x, and the idea y is not the same as the idea of x.

Or formally:

D 3.10 (x is a sign) \equiv $(\exists y)(\exists z)[x \text{ is an empirical object} \cdot y \text{ is an idea} \cdot z \text{ is a person} \cdot z \text{ has a tendency to associate } y \text{ with } x \cdot y \neq \text{the idea of } x.]$

⁵⁰³ This is impossible, of course, in certain cases. ☞sign☞ , for example, denotes itself.

⁵⁰⁴ It is important to understand what is at stake in working out a precise notion of a minimal context. If it is accomplished, it will provide a less relativistic concept of signification, and allow us to identify the pure signification of a sign for an individual (this pure signification would have to be observed from the third person perspective on the neurological level through an MRI or some other type of brain imaging device). Once we have this purified signification, it will also allow us to conduct experiments on the changes in signification when other objects and signs are added to the context. In this way we will be able to learn more about how signs interact with each other, and how we can create signs that do things which we want them to do.

One benefit of this definition is that it completely avoids quantifying over a signified or a denotatum. According to this definition, a sign need not signify, represent/stand for, or denote anything. What is essential to a sign is that it has a signification (an idea that someone tends to associate with it). A sign must have a signification, but whether a sign signifies anything is a question of whether *there is* anything represented by its signification. In many cases our ideas represent things that do not exist—nothing falls under them.

The formal existential definition of a sign runs:

$$(\exists x)(x \text{ is a sign}) \equiv (\exists x)(\exists y)(\exists z)[x \text{ is an empirical object} \cdot y \text{ is an idea} \cdot z \text{ is a person} \cdot z \text{ has a tendency to associate } y \text{ with } x \cdot y \neq \text{the idea of } x.]$$

It should be observed that this definition, once again, does not make reference to the object falling under the idea of y . If the current existence of a sign's object were a necessary condition for the existence of a sign (i.e. if signs were constantly dependent on their objects), there could never be a sign of something that did not exist. But clearly there are signs of things that do not exist. As a result, the existence of the signified object cannot be a necessary condition for the existence of its sign.

An analysis of this existential definition reveals that $\text{“}x \text{ is a sign”}$ is ontologically compressed in several ways. It is adically compressed to degree 2, because the triadic relation *1 tends to associate 2 with 3* occurs in the definiens, while the definiendum is a monadic predicate. $\text{“}x \text{ is a sign”}$ is existentially compressed to degree 2, since there are two more existential quantifiers in the definiens than in the definiendum. And it is logically compressed to degree 4, since there are four more logical operators in the definiens than in the definiendum.

Finally, we come to the question of ontic compression. *How many quantifiers in the definiens of my definition must take unique values?* We may suppose that they all must take unique values. The agent is clearly distinct from the sign and the idea. The sign and the idea are distinct, since one is empirically apprehended while the other is not. And since my definition makes no reference to the sign's object, the questions: *Must a sign's object exist in some way?* and *Can something signify or denote itself?* are irrelevant to considerations of the predicate's ontic value. So the predicate's ontic value is 3, and it is ontically compressed to degree 2.

§15 THE ONTOLOGICAL STATUS OF SIGNS ACCORDING TO THIS CONTEMPORARY ASSOCIATIONIST CONCEPTION OF A SIGN

According to my contemporary associationist conception of a sign, ☞ is a sign ☞ is a monadic predicate that primarily applies to objects (i.e., it does not apply to relations). Moreover, it applies only to objects that we can apprehend through the five empirical senses (i.e., it does not apply to ideas). And although it applies to empirical objects, it does not apply to every object that we apprehend through the five senses. Some of the objects we apprehend through the senses are not signs. These claims accord well with the use of ☞ sign ☞ in ordinary language. As a result, it might seem pointless even to discuss them. But many philosophers who have studied signs have denied one or more of these claims, and that is why arguments were needed in their defense.

We come now to the question whether ☞ is a sign ☞ applies to empirical objects themselves or to our impressions of empirical objects. This question, of course, assumes that there is a difference between empirical objects and our impressions of them. Because the question rests on a dubious assumption, anyone who rejects the assumption

will likely reject the question on the grounds that it is a pseudo-question. And in this case, no answer is needed. On the other hand, there are those who recognize a difference between empirical objects and our impressions of them. To those who hold such a position, the answer is "both." And if this answer causes concern on the grounds that it leads to confusion, my conception of a sign comes to the rescue with two new predicates, viz. ☞ is a proximal sign ☞ and ☞ is a distal sign ☞. The latter applies to the empirical object itself (insofar as it is a sign) while the former applies to our impression of the empirical object (insofar it is a sign).

Finally, we come to the question: *What must exist in order for a sign to exist?* According to the existential definition presented in the previous section, ☞ is a sign ☞ has a constant ontic value of 3. And this entails that at least three things must exist (at a given time) in order for a sign to exist (at that given time).⁵⁰⁵ (i) there must be a human, (ii) there must be an empirical object (which may or may not be apprehended by that human at that given time), and (iii) there must be an idea; and the human must have a tendency (at that time) to associate that idea with that empirical object. This account entails that signs are objects that depend on the existence of other things. They do not necessarily depend on other things insofar as they are objects, but they depend on other things insofar as they are signs.

One consequence of this account—a consequence which might strike some as unintuitive—is that an object can be a sign at one moment in time, but cease to be a sign a moment later if, for example, all the humans which have a tendency to associate something with that object are annihilated. In light of this consequence, it might be

⁵⁰⁵ And here I remind the reader, one last time, that ☞ sign ☞ is used in these latter sections as an abbreviation of ☞ human sign ☞.

helpful to reconsider the example of "is a grandfather" from Part II of this chapter.

There it was asked: *Does Smith remain a grandfather if his only grandchild Hope dies a few minutes after she is born?* In response to this question it was observed that ordinary language cannot settle the question. There is no fact of the matter to be discovered, but only a decision about linguistic usage to be made. And the same might be said in response to the analogue question which is now under consideration: *Does an object remain a sign if all the people who have a tendency to associate an idea with it die?*

According to the existential definition in the previous section, the answer to this question is "no". That is the decision that was made.

Be that as it may, there will be some whose linguistic intuitions revolt against this decision. And to support their intuitions, they raise what I call *the example of buried signs*. Suppose (they say), that, as a result of an archeological investigation, a piece of ancient pottery is uncovered. And suppose that as the archeologists examine this artifact they notice some unfamiliar markings on its surface which they correctly take to be a form of an unknown ancient symbolism. Aren't these markings signs? Shouldn't "sign" apply to these markings even though all the people who had a tendency to associate something with them are gone?

My response to the buried signs objection is two-fold. First, I concede that these markings are signs. But, then again, so is the piece of pottery itself. Both are indices. Both are signs that indicate to us the past existence of an ancient civilization. The piece of pottery indicates to us that the ancients not only existed in the past, but that they made pottery. The marks on the surface indicate to us, not only that the ancients existed, but that these ancient people engaged in certain forms of symbolic semiosis. So, the marks

are signs. They are signs for us. But they are not the same kind of signs for us that they were for the ancients. For us the marks are indices, for the ancients they were symbols.

After hearing the first part of my response to the buried signs objection, those who raise the objection are likely to respond: "OK. You are splitting hairs when you introduce the distinction between indices and symbols. But my objection still stands. I say that these marks are not only indices for us, but that they are symbols for us as well, since we recognize that they were symbols for the ancients, and I declare: Once a symbol, (from then on) always a symbol!" To this I reply: that is the decision you are making with regard to the use of ☞symbol☜. I, however, prefer to say that they *were* symbols, but are not symbols anymore. I will allow, on the other hand, that they may become symbols again if we figure out their signification. But as of now, they are not symbols, because they do not function as symbols for anyone who is currently alive.

At this point, if we step back for a moment, we may take the foregoing paragraph as an example. Two people are disagreeing about how a term should be used. And it is helpful to notice the method employed by each person to justify his own position. Each party digs in, and repeats things that reinforce his linguistic intuitions. But a philosophical solution can (and should) do more. After all, the disagreement is trivial, and this suggests that its resolution is trivial as well. One philosophical solution to the disagreement is to develop terminology that is capable of making finer distinctions.

Let us make a distinction between *live signs* and *dead signs*. Live signs are objects for which there is currently a person who exists who has a tendency to associate an idea with that object. Thus, what was considered to be the existential definition of ☞is a sign☜ in the previous section will now be the definition of ☞is a live sign☜:

$(\exists x)(x \text{ is a live sign}) \equiv (\exists x)(\exists y)(\exists z) [x \text{ is an empirical object} \cdot y \text{ is an idea} \cdot z \text{ is a person} \cdot z \text{ has a tendency to associate } y \text{ with } x \cdot y \neq \text{the idea of } x.]$

A dead sign, on the other hand, will be any object for which there was a person who had a tendency to associate an idea with that object, but no person currently exists who has such a tendency. Thus:

$(\exists x)(x \text{ is a dead sign}) \equiv (\exists x)(\exists y)(\exists^{\sim} z) [x \text{ is an empirical object} \cdot y \text{ is an idea} \cdot z \text{ is a person} \cdot z \text{ had a tendency to associate } y \text{ with } x \cdot y \neq \text{the idea of } x \cdot x \text{ is not a live sign}]$

This latter definition places a past wedge on the z variable instead of a present wedge. According to these existential definitions, live signs have a constant ontic value of 3, while dead signs only have a constant ontic value of 2, since only two of the quantifiers in the definiens of the latter definition have present wedges. Both live signs and dead signs, however, have a historic ontic value of 3.

If both live signs and dead signs are signs (which is not an unreasonable hypothesis), then the existential definition for ☞ is a sign ☞ must include both a present and past wedge on the z variable.

$(\exists x)(x \text{ is a sign}) \equiv (\exists x)(\exists y)(\exists^{\sim} z) [x \text{ is an empirical object} \cdot y \text{ is an idea} \cdot z \text{ is a person} \cdot (z \text{ has a tendency to associate } y \text{ with } x \vee z \text{ had a tendency to associate } y \text{ with } x) \cdot y \neq \text{the idea of } x.]$

This account of signs should satisfy the those who are concerned with the problem of buried signs, while simultaneously providing an example of how simple developments in notation are capable of resolving philosophical disagreements.

In conclusion (and according to the latest existential definition), ☞ is a sign ☞ is a H3-C2 monadic predicate that is adically compressed to degree 2 (since the definiens

contains a triadic predicate and the definiendum is a monadic predicate), existentially compressed to degree 2 (since the definiens contains two more existential quantifiers than the definiendum), logically compressed to degree 5 (since the definiens contains five logical operators and the definiendum contains none), and ontically compressed to degree 1 (since only one subject term is needed to create a sentence with $\text{“}x \text{ is a sign”}$, but at least two things must exist in order to instantiate the predicate). In short, $\text{“}x \text{ is a sign”}$ is a monadic predicate that is ontologically compressed in many ways; and perhaps this helps explain, in the end, why there have been so many philosophical confusions over the nature of signs.

§16 ON THE WEAKNESSES OF THIS CONTEMPORARY ASSOCIATIONIST CONCEPTION OF A SIGN

My conception of a sign can be criticized on several accounts. First, it is complicated. Second, it does not explain several important relations between ideas and their objects (e.g., how an idea stands for its object and how objects fall under ideas). Third, many of the terms in the definiens of the definition require further analysis. Although these objections are well-taken, a few things can be said about them.

My conception is, without doubt, complicated; but this is not an objection in itself. It would be an objection only if there were another conception that had all the strengths of my conception, but were simpler.

My conception makes no attempt to explain how an idea stands for its object, nor does it explain how things fall under an idea. Here again, it simply assumes that these

things happen. Since, however, it claims that these relations are not semantic relations, it can be pardoned for taking them for granted.

My conception takes the dispositional relation of mental association as primitive. It also takes the relation of constant dependency as primitive. If one were to attempt to spell out these relations in terms of things which are more primitive, one would likely see that they both involve modality of some sort. What this means, however, is that my conception actually involves modality. This fact by itself would lead to the objection that my conception is an intensional account of signs—not a purely extensional account.⁵⁰⁶ On the other hand, even if these relations could be replaced by others that were purely extensional, the account would remain intensional, since it involves ideas, and explains the extension of a sign in terms of its intension. For those who seek a purely extensional account of signs, my conception will not be satisfactory.

§17 ON THE STRENGTHS OF THIS CONTEMPORARY ASSOCIATIONIST CONCEPTION OF A SIGN

My conception has several advantages over the other conceptions. First, it agrees with ordinary language insofar as it claims that "sign" applies only to empirical objects—not to ideas. Second, it agrees with ordinary language insofar as it claims that "sign" applies to objects—not to relations.⁵⁰⁷ Third, it agrees with ordinary language insofar as it makes room in the world for things that are not signs—it avoids pansemiosis. The conceptions of Ockham and Peirce fail on the first account; Saussure's conception

⁵⁰⁶ The criterion that is used to distinguish intensional from extensional logics is substitution *salva veritate*. Intensional logics do not always preserve truth when extensionally equivalent terms are substituted for each other.

⁵⁰⁷ In *Handbook of Semiotics*, Nöth suggests that this idea is out of the mainstream of current semiotic thinking. Thus, under the entry for "Sign" he begins with the subsection "THE SIGN IS NOT THE SIGN VEHICLE," p. 79. The my conception rejects this.

fails on both the first and the second account; and Peirce's conception fails on the first and the third.

The final advantage of my conception relates to denotation. First, it is capable of giving an account of denotation. Second, it avoids quantifying over a denotatum, and helps explain how some signs are denoting signs, yet fail to denote. Augustine's and Saussure's conceptions fail on this first account, while Ockham's, Poinset's, and Peirce's conceptions fail on the second.

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