

INTRODUCTION TO PHILOSOPHICAL PRINCIPLES

LOGIC, PHYSICS, AND THE HUMAN PERSON



CONTINUUM PHILOSOPHICAL INSIGHT | BRIAN KEMPLE

CONTINUUM
PHILOSOPHICAL INSIGHT

INTRODUCTION TO
PHILOSOPHICAL
PRINCIPLES

LOGIC, PHYSICS, AND THE HUMAN PERSON

BRIAN KEMPLE

TABLE OF CONTENTS

TABLE OF CONTENTS

Introduction

Asking questions

On the structure

1 | LOGIC

1.1. The Basic Encounter with Thought

1.2. Terms

1.2.1. Categorematic and Syncategorematic

1.2.2. Simple and Complex

1.2.3. Superior and Inferior

1.2.4. Univocal, Equivocal, and Analogical

1.2.5. Collective and Distributive

1.2.6. Positive and Negative

1.3. Propositions

1.3.1. Categorical

1.3.2. Conditional

1.3.3. The Manner of Predication

1.4. Arguments & Argumentation

1.5. Difficulties: Terminology and Illation

1.5.1. Terminology

1.5.2. Illation

1.6. Reflecting on Signs

2 | PHYSICS

2.1. The Basic Encounter with the World

2.2. Sense Experience

2.3. Motion as Change

2.4. Matter, Form, and Privation

2.4.1. Matter

2.4.2. Form

2.4.3. Privation

2.4.4. Mobile Being

2.5. Causality

2.5.1. Cause in General

2.5.2. Taxonomy of Causes

2.5.3. Causal Relations

2.6. Act, Potency and Nature

3 | PERSON

3.1. The Nexus of Thought and World

3.2. Composite Being: Bodily Matter because of Formal Soul

3.3. Faculties of the Human Soul

- 3.3.1. Sensation
- 3.3.2. Perception
- 3.3.3. Intellection
- 3.3.4. Appetites
- 3.4. Truth about the Good
- 3.5. Personhood
 - 3.5.1. Consciousness
 - 3.5.2. Lived Experience
 - 3.5.3. Recursive Formation of the Person

INCONCLUSION

GLOSSES

BIBLIOGRAPHY

INDEX

PREFACE

There are many “introductions” to philosophy. Some of these are very good. Many more are not. The goal of this book is not to replace either the good or the bad, but only to provide another entryway into the philosophical way of life. It is intended for serious, dedicated persons who wish to challenge themselves and improve their ability to think; not for armchair “intellectuals” nor for those faint of heart; not for sophists nor pretenders nor anyone who would mistake eloquence for wisdom.

Despite being an “introduction”, this is not an *easy* book. Philosophy made easy, or simple, or for dummies, hardly deserves to claim the name. But there is reward in the struggle. Indeed, is there any reward without?

Brian Kemple
27 March 2019

INTRODUCTION

This short book introduces what I consider to be the most important principles for conducting any systematic philosophical inquiry, and therefore for building any serious philosophical habit. These principles are broken down into three sections: **logic, physics, and person**; or, the basic encounter with **thought, with the world, and the nexus of thought and world**. I draw primarily upon the Thomistic tradition of philosophy—that is, the tradition begun with St. Thomas Aquinas (c.1225-1274) which has seen two primary periods of development, the first from Capreolus (c.1380—1444) through John Poinot (also known as John of St. Thomas, 1589—1644) and the second from Pope Leo XIII’s 1879 encyclical *Aeterni Patris*, which exhorted a return to St. Thomas, most famously championed in the 20th century by Étienne Gilson (1884-1978) and Jacques Maritain (1882-1973), which continues up until today. Additionally, however, I include some insights taken from the traditions of semiotics as begun by Charles Sanders Peirce (1839—1914) and from the phenomenological approach advocated by Martin Heidegger (1889-1976).

Despite my drawing upon these traditions, the reader does not need to know anything about the persons involved or their teachings in order to engage the ideas presented herein; for the focus in this book is on neither history nor dialectic—that is, how these ideas have developed through time or the argumentative demonstrations of their veracity¹—but rather on a clear presentation of the ideas themselves along with heuristic suggestions for reflecting on these ideas and their

¹ The term “dialectic” gets thrown around to mean a lot of things, including “argumentation without certainty” or “non-demonstrative argumentation”. This is *not* how it is being used here, but rather, in the more general sense wherein it refers to *all* demonstrative argumentation, including that which is through causes (*propter quid* demonstrations), that which is from effects (*quia*), and that which appears fitting in light of clear principles (*convenientia*). This is dialectic as it was understood in the 17th century and as discussed by John Poinot in the beginning of the *Tractatus de Signis* edited by John Deely.

integration into our lives. History and dialectic are important but can be found in countless other books.

At the same time, this introduction should not be consumed in the manner of a textbook, nor should it be considered a reference for philosophical concepts. Rather, it should be considered an introduction to *philosophical questioning*; for one does not develop the philosophical habit by rote, but by pursuing thoughtful inquiry with dedication; and while repetition is the mother of all learning, there is profound difference between the repetition of a parrot and the repetition of a recursively-engaged program of rigorous inquiry after the truth.

As might be obvious, it is the latter kind of repetition that I would encourage, and it is to that kind of repetition that this book is oriented: to be a helpful series of guideposts not only as to the kind of material you should engage, the sorts of questions you should ask—an introduction to the cultural phenomenon of philosophy, that is—but to *how* the very process of philosophy is carried out. It may not always help, and the farther you progress in questioning thoughts, the world, and the nexus of the two, the less likely you will be to find a complete answer here, either as to content or as to method. But it is good, nevertheless, to have recourse to the basics even for the most advanced philosopher—just as writing this has been to my own benefit.

Asking questions

Because inquiry in philosophy needs no specialized training, it is often assumed that its practice requires minimal to no training at all. Indeed, one could assume that very little is required for the professional philosopher beyond the ability to read, perhaps, in a few languages, a course or two in logic, and the rhetorical ability to seem profound. But even if, in a certain respect, this is so—certainly, it seems that many within the academy possess little more in the way of genuine capability, regardless of their institutional credentials—the fact is, for the purposes of true philosophical habit, time and study alone are *not enough*.

Rather, one needs to learn to ask questions and to ask them *in the right way*. All too often, we tend to ask questions with the goal of getting the answer we want (which is usually the answer that allows us to keep doing and pursuing the things we desire) rather than the answer that is true (which often insists we change our behavior); and very often, do not realize what we are doing, as we have grown up in this bad habit since a time before we can remember. This kind of *pre-philosophical* attitude of

unquestioning, in which most of us spend most of our lives, often appears as the path of least resistance for getting along on a day-to-day basis in the workaday world. But it also encourages bad thinking and shoddily-formed beliefs to control our behavior unchallenged; it encourages us to take for granted that we know what is true, or at the very least, that we do not need to know any better. As the Eleatic Stranger says in Plato's *Sophist* (229c): "When a person supposes that he knows, and does not know; this appears to be the great source of all the errors of the intellect... And this, if I am not mistaken, is the kind of ignorance which specially earns the title of stupidity."

For this reason, philosophical inquiry always proceeds **disclosively**—meaning that it seeks to unveil what really is—in a **twofold manner**: namely, we want disclosure of both the *object* of our inquiry and of *our own conceptualization* of the object. We ask not only, "What is *that*?" but "How am I thinking about *that*?" and "Do I *really* know what I am talking about?"

This twofold necessity of disclosure structures the text here: logic teaches us how to understand our own thinking processes, physics (and later, metaphysics, upon which we only lightly touch in this book) discloses the structure of the world to us, and a study of the person helps us to understand how the two come together in a complex dynamic of potentially infinite growth.

On the structure

As stated, this "introduction" is not intended as a reference or as a textbook. It is not an introduction to logic, nor to physics, nor to the human person; but rather, an introduction to the principles which root both these studies *and* the philosophical habit as a whole. On its own, the most it can accomplish is to point you in the generally-right direction. To assist in this direction-pointing, I have included, by endnote, certain glosses which include reference to more substantial texts of philosophical inquiry as examples of how and where one might apply the lessons this text contains, and where one might look for further edification on the topics at hand. These texts are the "primary sources", in the sense that they are exemplars of asking questions "in the right way". Some glosses will dig a bit into the more complicated matters directly and provide a deeper, more elaborate answer given by yours truly.

Further, the **method** I employ here, as elsewhere, is what may be called a *resolutive method*: put as simply as possible, the goal of all our inquiries is to produce

conclusions that become part of a coherent whole, such that the answers to more difficult questions are resolved with the answers to simpler and more fundamental questions. We do not want a philosophy riddled with holes, but one without gaps; a philosophy that sees truth the revelation of a continuum of reality rather than an amalgamation of facts. Often, this disclosure of the continuous reality requires a **recursive** process: we might, and almost certainly will, cover the same ground multiple times, but—it is to be hoped—each time with a better understanding of how it all fits together;¹ our first pass over new ground will often leave us with a painfully incomplete understanding. Indeed, our understanding is *never* complete; but with a well-developed habit of philosophical reflection, that incompleteness turns from a pain into a joy; from a source of worry—over how much one does not know or understand—into a source of delight, for there is ever more to learn.

I have attempted to simplify the presentation as much as possible; at times, however, the language and ideas both will become complicated and perhaps difficult to grasp. Some sections, some paragraphs, and some sentences will not be clear on the first, second, or even third reading. But philosophy is never a linear pursuit; if you find yourself struggling with a concept or a section, come back to it later, and repeatedly. Like with any habit, the philosophical improves with practice.

1 | LOGIC

*ars quaedam necessaria est, quae sit directiva
ipsius actus rationis, per quam scilicet homo in ipso
actu rationis ordinate, faciliter et sine errore
procedat.*

- Thomas Aquinas
In Posteriorum Analyticorum Expositio

The words “logic” and “logical” get thrown around in common parlance quite a bit: the latter often forming a part of an insult or the vague facsimile of an argument, in the formats of “You are not being logical”, “That’s not logical”, or “[Institution or practice I dislike] is a relic of an illogical time”, or something along those lines. What is meant by the “logical” way of thinking in most of these usages is: “Asserting a viewpoint or behaving in a manner which conforms with my own unexamined presuppositions.” Thus, “logic” has some connotation of “right thinking”, but “right thinking”—unfortunately—is understood to mean “thinking that agrees with my own”... which usually is thinking that has not been well-thought.

On the other hand, mention “logic” around the typical university today and most people who hear you are likely to think of something having to do with computer programming: loops, if \rightarrow else \rightarrow then statements, and so on; or maybe they will think of a very dry textbook; or the name Gottlob Frege; or perhaps, if someone has taken a course called “Logic”—or stumbled upon the whiteboard leavings of such a class—something that looks a lot like this:

$$\neg \exists x(Rx \& Px) \rightarrow \exists xQx, \neg \exists x(Rx \& Px) \vdash \exists xQx$$

This lattermost sense of logic has much to do with computer programming and quite a lot to do with dry textbooks and Gottlob Frege, whose rather dry 1879 paper, *Begriffsschrift* (“Concept notation”), was a watershed moment in the development of a new, post-Aristotelian approach to logic for the ensuing 20th century. Frege’s work as a whole was a great advance in the field of formal logic, for he introduced a system more agile in dealing with both predicates and propositions than the traditional formal logic which had preceded it.²

Unfortunately, Frege conceived of his logic on the model of mathematics. I say this is unfortunate not because of the many and often-confusing (or confused) variations in abstract symbolization which have arisen since Frege (including those of Frege himself), but because of the consequent disconnection of logic from the reality of the λόγος: the *logos*, a Greek word which can be translated in a variety of ways, including reason, account, word, discourse, oration, thought, consideration, meaning, proportion, and even the person of Jesus Christ.³ The word has obvious importance for English: we use it to designate many of our fields of study (*biology*, *theology*, *psychology*, etc.) and it is, as one should expect, the source of our word “logic”.

² It is a legitimate point, raised by Frederik Stjernfelt, that Charles Sanders Peirce rather than Frege was really the most influential thinker on modern symbolic logic. As Stjernfelt writes in his 2014: *Natural Propositions: The Actuality of Peirce’s Doctrine of Dicisigns*, 50: “Already in the period from 1880-85, Peirce constructed his linear formalizations of propositional logic and first order predicate logic—following immediately, but unknowingly, in Frege’s 1879 footsteps. These few years apart, Frege and Peirce independently discovered predicate logic with polyvalent predicates and quantification. As has gradually become known, it was Peirce’s rather than Frege’s much more cumbersome formalization of the *Begriffsschrift* which came, via Schröder, Peano, and Russell, to be taken as the basis for modern formal logic.”

³ This lattermost stemming from the Gospel of John, in its opening lines (1:1): “Ἐν ἀρχῇ ἦν ὁ λόγος, καὶ ὁ λόγος ἦν πρὸς τὸν θεόν, καὶ θεὸς ἦν ὁ λόγος”, “In principio erat Verbum, et Verbum erat apud Deum, et Deus erat Verbum”, “In the beginning was the Word, and the Word was with God, and the Word was God.” This passage of the Bible comes as the appropriation of a truth recognized in ancient Greek philosophy; that is, a notion supposedly proposed by Heraclitus of Ephesus and adopted by the Stoics, of the λόγος as the source of the world’s order. Cf. Marshall McLuhan 1943: *The Classical Trivium: The Place of Thomas Nashe in the Learning of His Time*, 22.

But “the disconnect of modern logic from the λόγος”—as counterintuitive as it might seem, given the etymological connection—what do I mean by this? Put simply: the formal structure which logic studies ought to be studied *for the sake of* revealing something true about reality. The study of modern logic tends towards study of the formal structure for the sake of understanding the formal structure, and consequently in applying the lessons learned to manipulation of data, to engineering possibilities, and to abstracting the structure of thought so as to control its consequences. Consider the above formula of abstract symbols: there is meaning in it, but that meaning is removed from natural language and therefore from natural experience. If we elevate this concern for formula above all else, we enervate the λόγος and make it an empty shell.⁴

In contrast, we propose here, the λόγος is best understood as the **intelligibility of the real**; not as residing in intellects, but as transcending both the intellect which grasps it and the reality in which it is grasped, irreducible to either. In other words, the λόγος is what really is, as it can be understood, regardless of how poorly or incorrectly we or others might think about it. Logic, on the other hand, is *or ought to be* the study of this process by which the mind strives for grasping this intelligible reality in its full relation: in thought and in thing, in mind and world, and in the possible connections between the two.ⁱⁱ

In the preface of his commentary on Aristotle’s *Posterior Analytics*, Aquinas asserts:⁵ “a certain art is necessary, which is directive of the very act of reason, namely, that

⁴ This is not to deny a place for modern, formal, symbolic logic in our philosophical studies: but rather, to insist we study it *in the right way* and *for the right purposes*. Highly-abstracted formal systems of symbols can help us understand our own thinking and the logicity of relations more clearly than we can attain in natural language systems, but too exclusive a focus on such systems results in a divide of them from the real world in which we live, cleaving “thought” from “thing”.

⁵ Thomas Aquinas i.1269-72: *In Posteriorum Analyticorum Expositio, proem.*: “ars quaedam necessaria est, quae sit directiva ipsius actus rationis, per quam scilicet homo in ipso actu rationis ordinate, faciliter et sine errore procedat”. Distinctions of logic as either an *art* or a *science* have received a great deal of attention; for a science is certain knowledge while an art is knowledge concerning something to be done, something which can be otherwise. Put as succinctly as possible, the art of logic is the conduct of reasoning itself, while the science is the knowledge of how that reasoning occurs. To practice logic as an art requires investigating it as a science, though not all great scientific logicians are great logical artists; and vice versa.

through which humans may proceed orderly, more easily, and without error in the act of reasoning itself”; that is, logic. Logic has long been considered, therefore, a **liberal art**:⁶ “because it is at the core of the studies that free the mind in its own order by the disciplines proper to thought”.

1.1. The Basic Encounter with Thought

But what *is* thought, or thinking? Even though we all find ourselves “thinking” to some degree or another nearly all of the time we are conscious—it is something we encounter in the subjectivity of our lived experiences continually; you cannot think about thinking without thinking, and even if you think you are not thinking, you are still thinking—thinking is nevertheless an activity we find difficult to describe. Because it has an omnipresence in our consciousness, we take for granted that we “know” what we mean by “thinking”, which makes it a challenge to articulate what it really is, let alone how we would begin to *study* “thinking”.

One of the easy-out answers someone might give to the question, “What is thinking?” today is that thinking is the activity of our brains: an idea that has been floating around commonly since the 1940s, but which can be traced back into thinkers as early as Thomas Hobbes (1588—1679) and Gottfried Wilhelm Leibniz (1646—1716). However, our neurological activity—while very important for our cognitive abilities—is **not** what is meant by “thinking”, and anyone claiming it is has fallen into a **reductive fallacy**.⁷ After all, do we really believe that the neurological activity in our brains corresponding to sight is what we see? Or is it not a means *by which* we see? That is, I do not see synapses being fired between neurons, but because of those firing synapses, perceive the green of the glass from which I am drinking, the black of my keyboard, the white from my computer monitor.

⁶ John Deely, 1985: *Logic as a Liberal Art*, 4.

⁷ I.e., the fallacy of thinking that, because some whole is made up of parts, those parts are what is really real, while the whole is simply a mirage. For instance, if someone were to say that the table in front of you is not *really* there, but actually just a collection of atoms with a relatively enormous amount of “empty space” in between, this would be a reductive fallacy—likewise that a fetus is just a clump of cells, or that water is just hydrogen and oxygen.

Why would thought be any different?

We are further inclined today to computational metaphors: metaphors which posit that thinking is some kind of “information processing” or that it is the “software” to the brain’s “hardware”; as though thoughts are programs or subroutines running in a massively-complex operating system installed by our genes. This description often finds an audience that takes it literally and unquestioningly, rather than metaphorically—especially those who are involved with research in artificial intelligence and the continual advancement of our programmed, computational prowess, and *most* especially those who are committed (whether as advocates or as political [and not theoretical] opponents of *transhumanism* or *posthumanism* movements—ideologies that believe the next stage of life will be achieved through programmed intelligence).⁸

Or we might think of thinking as “talking to ourselves”, or “talking without speaking”, perhaps as a kind of interior, spiritual, mystical, ethereal experience carried on by a force not only inexplicable by any means of study—not by neuroscience, psychology, physiology, biology, chemistry, physics, or philosophy—but even undetectable: an *anima ex machina*.

In general, that is, we tend to presume that thinking is an in-principle *private* endeavor: something that happens “inside” of us, “in” our minds. But why? Our thinking—while it is certainly something that we as individuals do—seems entirely dependent upon things experienced *outside* of ourselves; and perhaps most dependent upon language, which certainly does not arise spontaneously from our minds, but is something we learn through interaction with other human beings. This dependence does not mean that thinking *is* language, but it does seem to indicate that thinking operates principally *through* language (among other things which become subordinated to the structure that language gives us).ⁱⁱⁱ So while we certainly do have “private thoughts”, and we are all quite practiced at “keeping our thoughts to ourselves”, the privacy is incidental to thinking, rather than essential.

⁸ An accessible book explaining this ideology—wherein one finds little serious questioning about what *thinking* really means, it being taken for granted at every step that thinking is nothing more than information processing in the same manner as held by a computer—is Max Tegmark’s 2017: *Life 3.0: Being Human in the Age of Artificial Intelligence*.

Rather, thought as we experience it begins and usually ends in something public: in the reception and transmission of thought between persons.^{iv}

In other words: we seem to encounter our own capacity for thought primarily through language; for thinking, said most generally, is the effort to produce concepts: whether good or bad, for moral or immoral purposes, whether ordered to necessary truths or to contingent projects, when we *think*, we are attempting to produce a conceptual sign—or a series of signs which somehow resolve into a coherent whole—which directs our minds to these ends. When we try to study the operation of the mind, therefore, we do so through language, because a language is composed from perceptible signs which signify the concepts of the mind. Conventionally, and rightly, the history of logic has focused on three kinds of linguistic structures: **terms, propositions, and arguments.**^v

We will come to these three structures in a moment. But first, we must warn against taking the term “structure” too literally: that is, just as computational metaphors misleadingly suggest a mechanical functioning to the mind’s operations, so too the “structural” metaphor may misleadingly suggest a kind of static architecture to the development of thought. That is, “thought” does not have walls nor ceilings, framing nor trellis nor trestle, nor, for that matter, a foundation. Prior to every thought, there is some other thought—or at least, something “thought-like”. In other words, our thinking is always conditioned by prior thinking, and our prior thinking is itself conditioned by activity that may not be “thought” properly speaking but is nevertheless “thought-like”. You cannot start to have an entirely new thought, right now, at this moment which is not prompted by some other thought, either a thought of your own or that of another. You cannot start a new foundation for thinking on untrammelled mental real estate like you could a new building on land untouched by human hands. And while you might remember a “first thought”, there were undoubtedly thoughts you had before that one, and prior to those, something else that enabled you have those thoughts, which in turn enabled you to have the thoughts you now remember.

Nevertheless, the idea of “structure” is not limited to architecture: atoms, planets, plants, and animals, too, have structures, and in a way more closely analogous to the kind of structure that we discover in thought than is the kind of structure we discover in the artifices of humankind: rooted but flexible, organic and intrinsically-

purposive, and self-developing, growing from within by appropriating what it discovers, absorbs, and transforms from without. If we think of plants as a simple analogate, terms are like roots, propositions are like stems and branches, and arguments are like fruits or flowers—fruits and flowers that cross-pollenate and reproduce and may seamlessly continue the life of thought, if we encourage them.

GLOSSES

¹ This idea of recursive progress in intellectual proceeding is found in Thomas Aquinas, but often implicitly and with great confusion, especially among Thomists. The most important text where Aquinas discusses resolution (the *via resolutionis*) as it is being used here is in the very first paragraph of the *corpus* in i.1256-59: *Quaestiones disputatae de veritate*, q.1, a.1:

English	Latin
Just as it is necessary in treating of demonstrable things to make a reduction to some principle which is known in itself to the intellect, so too in investigating “what” anything is; otherwise, each kind of knowledge would regress infinitely, and thus every science and cognition of things would perish.	sicut in demonstrabilibus oportet fieri reductionem in aliqua principia per se intellectui nota, ita investigando quid est unumquodque; alias utrobique in infinitum iretur, et sic periret omnino scientia et cognition rerum.

Aquinas goes on to explain the distinctions of predicates—both the categories and the transcendentals—and implies their resolution into “being as first known”. There are a lot of complexities involved in tracing the course of this resolution—such as distinguishing precisely “each kind of knowledge” (i.e., “science” and “cognition of things”)—which I attempt in my 2017: *Ens Primum Cognitum in Thomas Aquinas and the Tradition*, 241-46. Neither my book nor Aquinas’ *De veritate* are texts for beginners (mine was my doctoral dissertation and written specifically for the goal of advancing Thomism’s thinking, and therefore was written for experienced Thomists), but the diligent student could profit from encountering both sooner or

later. The *De veritate* contains some of the richest passages that Aquinas wrote on knowledge and goodness and is well-worth turning to time and again.

By no small consequence, a recursive process is found also in Charles Peirce and Martin Heidegger. This parallel of recursive approaches (between the latter two) is found in my 2019: *Intersection of Semiotics and Phenomenology: Peirce and Heidegger in Dialogue*.

ⁱⁱ Though he wrote no original systematic treatise on logic, preferring instead to confine his remarks primarily to commentaries—as might be expected, given that most of his writings were theological even if perfused with philosophical insight—Thomas Aquinas grants logic a very high importance in q.6 of the *tertia pars* of his *Super Boethium de Trinitate*:

English	Latin
To the third it must be said that we begin in learning from that which is most easily done, unless something is required of necessity. For sometimes it is necessary in learning to begin not with that which is easier, but with that the cognition of which cognition of subsequent matters depends. And for this reason it is necessary in learning to begin from logic, not because it is easier than other sciences, for it has the greatest difficulty, since it is concerned with second intentions, but because the other sciences depend upon it, insofar as it teaches the mode of proceeding in every science; and it is necessary first to know the mode of a science before that science itself, as said in <i>Metaphysics II</i> .	Ad tertium dicendum quod in addiscendo incipimus ab eo quod est magis facile, nisi necessitas aliud requirat. Quandoque enim necessarium est in addiscendo incipere non ab eo quod est facilius, sed ab eo, a cuius cognitione sequentium cognitio dependet. Et hac ratione oportet in addiscendo a logica incipere, non quia ipsa sit facilior ceteris scientiis, habet enim maximam difficultatem, cum sit de secundo intellectis, sed quia aliae scientiae ab ipsa dependent, in quantum ipsa docet modum procedendi in omnibus scientiis. Oportet autem primo scire modum scientiae quam scientiam ipsam, ut dicitur in II metaphysicae.

To put this otherwise: we cannot have *any* science—philosophical or empirical, which were not clearly distinguished from one another in Aquinas’ time—unless we have logic, and ignorance of logic will lead to error in the conduct of those sciences.

Thus, even though logic is the most difficult of sciences, “since it is concerned with second intentions”, it is necessary for all sciences, since science operates through the mind. An illogical mind is an unscientific one; hence, all minds engaged in pursuits of science—philosophical or otherwise—should be trained in logic.

ⁱⁱⁱ The idea that there exists a “private language” which we have internally in our minds and which receives expression only incidentally in verbal articulations was quite popular in the 20th century, and persists still in many so-called “analytic” philosophers. One of the early proponents of this idea, Ludwig Wittgenstein, later set about unveiling its fallacy. The entirety of his posthumously published (in 1953) *Philosophische Untersuchungen (Philosophical Investigations)* is ordered to questioning whether there exists a kind of intellectual meaning-realm which exists antecedently to our verbal articulations, beginning with the way it is presented by St. Augustine of Hippo.

One finds similar exposure in the work of Robert Sokolowski, particularly in his 1978: *Presence and Absence* and 2008: *Phenomenology of the Human Person*. In the latter, especially, Sokolowski draws explicit attention to the *publicness* of the structure of our species-specifically human linguistic encounters. Thus, the first part of the book, “The Form of Thinking”, explains how through syntax we are connected into an intersubjective—and, I would add, essentially suprasubjective—realm of discourse through our linguistic appropriations and expositions.

^{iv} Besides any “common sense” reasons for believing that “thinking” is an interior, private pursuit, a great deal of the intellectual tradition of the Western world has reinforced this notion—including what is found not only in Plato and non-Christian Platonists, but also in St. Augustine of Hippo, who in his *De magistro (On the Teacher)*, translated by J.H.S. Burleigh) writes:

when we have to do with things which we behold with the mind, that is, with the intelligence and with reason, we speak of things which we look upon directly in the inner light of truth which illumines the inner man and is inwardly enjoyed. There again if my hearer sees these things himself with his inward eye, he comes to know what I say, not as a result of my words but as a result of his own contemplation. Even when I speak what is true and he sees what is true, it is not I who teach him. He is taught not by my words but by the things themselves which inwardly God has made manifest to him.

That is, Augustine saw our intellectual understanding not as the product of a dynamic interaction between persons and things, but rather a divine illumination which unveiled to the “inner person” the intelligible nature of the sensible reality. The text of the *De magistro* is a curious one, for Augustine spends the majority of it showing how we *are* informed by signs, especially by those employed by other human beings—teachers—but in the final pages he shifts the claim: stating that what we are shown by our teachers are merely signifiers which *if* we have received a divine illumination we may *then* recognize for their proper signification.

∨ These three structures are one set of names for a linguistic or verbal kind of sign. Charles Sanders Peirce, over the course of his career, assigned various names to these kinds of signs, which, although they are ordinarily encountered in language, are intimately ingrained in the signification of a fundamental trichotomic structure of reality. Among the more mature classifications for these signs that Peirce gave was a tenfold possible organization (1903: “Nomenclature and Divisions of Triadic Relations as Far as They Are Determined”, *EP.2*: 294-96):

Rhematic Iconic Qualisign	Rhematic Iconic Legisign	Rhematic Symbol Legisign	Argument Symbolic Legisign
	Rhematic Iconic Sinsign	Rhematic Indexical Legisign	Dicent Symbol Legisign
	Rhematic Indexical Sinsign		Dicent Indexical Legisign
			Dicent Indexical Sinsign

This complex and perhaps intimidating structure demonstrates how difficult it can be to adequately classify our logical means. The rough equivalents to terms and propositions in Peirce’s schema are **rhemes** and **dicents**. “Iconic”, “indexical”, and “symbolic” identify the kind of sign a thing is: an icon is a sign by its likeness, an index by pointing, and a symbol by generality. “Qualisignificative”, “sinsignificative”, and “legisignificative” specify the manner of signification: a qualisign signifies by appearing alike to, a sinsign is an individual event or

occurrence which directs towards, and a legisign is a law or rule which signifies by a necessity.

Every qualisign is by necessity both rhematic (a term) and iconic (by a likeness), whereas a legisign, for instance, can be a rheme, a dicent, or an argument; it can be indexical or iconic, etc., etc.

My point in bringing this extremely complex and nuanced method of classification up here is neither to scare anyone off nor to teach the complex theories of signs found in Charles Peirce, but to point out the complexity behind our every use of language; there are countless nuances which influence both our own understanding and our attempts to convey our understanding to others of which we are seldom precisely aware. I certainly recommend a study of semiotics for those who are interested—semiotics being nothing other than the natural later development of the doctrine of logic.