Chapter Nine

Williamson's 'Model-Building' Conception of Analytic Philosophy

Abstract: Timothy Williamson is the Wykeham Professor of Logic at the University of Oxford. He has published many books and articles in diverse fields. He writes for the *New York Times Literary Supplement*. Williamson's *The Philosophy of Philosophy* (2007) has been the subject of much attention.[1] In *Philosophical Method: A Very Short Introduction* (2020), Williamson presents an introduction into his vision of proper scientific methodology for philosophy, alongside the other sciences. In this chapter, we will follow Williamson's narrative and critically analyze his claims. Williamson's 'mathematical model building' is in contrast to the 'social science conceptual analysis' methodology advocated here.

Introduction

Timothy Williamson graduated from Oxford University in 1976 with a B.A. (first class honors) in Mathematics and Philosophy, and in 1981 with a doctorate in philosophy (D.Phil.) for a thesis entitled "The Concept of Approximation to the Truth." As will be discussed, Williamson overall desire is to guide philosophy into a more mathematical form, with the hopes of generating more precise answers to certain philosophical questions or problems. He argues that since other disciplines utilize mathematical methods (e.g., physical science, linguistics, computer science, economics, psychology) to make theoretical progress in their sciences, then philosophy (as a science) should too.

In the overview, Williamson is concerned to compare the broad disciplines of physical science, mathematics, and philosophy, as having interconnections with respect to achieving knowledge about some mutual concerns (e.g., the mind). Williamson wishes to characterize what a 'science' is, in a certain broad way. He is greatly influenced by the history of Western philosophy and the 'empiricist' versus 'rationalism' debate. As we shall see, Williamson favors rationalism, meaning that the concept of 'rational' is key to his theories. Williamson argues that "philosophy is a *science* in its own right, interconnected with the others and as autonomous as they are" (p. 127, italics added).

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[1] See P.M.S. Hacker (2009) "A Philosopher of Philosophy" in *The Philosophical Quarterly* (Vol. 59, No. 235) for a strong rebuke of *The Philosophy of Philosophy* (2007). Hacker says that all we are shown in this book is "how the current Wykeham Professor of Logic does philosophy" (p. 340). I likewise criticize Williamson's argument with its attention to metaphysical possibility and necessity as a result of historical conceptual distinctions, errant conceptual interpretations, and a mistaken worldview which advocates that philosophy should be practiced more like mathematics (rather than a social science).

Philosophical History: The Empiricism-Rationalism Debate

Williamson places his 'armchair' metaphysical theory among past philosophical theories. One of the most basic epistemological disputes historically, is the 'empiricism' versus 'rationalism' debate. These theories of knowledge are summarized:

> **Empiricism:** Empiricists believe that *'experience'* has primacy in human 'knowledge' and 'justified belief.' But the major problem with this theory is that different philosophers pick out different phenomena with 'experience'; and even if they pick out the same phenomenon, they have different views of the structure of the phenomenon that they call 'experience.' There are many distinctions among empiricisms, but 'sense experience' is primary in acquiring *a posteriori* knowledge. Historically, Locke, Berkeley, and Hume are known as *British Empiricists* who were attracted to *physical science* as a model for knowledge.
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> **Rationalism:** Rationalists believe that *'reason'* has precedence over other ways of acquiring knowledge, or more strongly, that it is the unique path to knowledge. The term 'rationalism' does not generally designate a single precise philosophical position; there are several ways in which 'reason' can have precedence, although the term 'reason' is not clear. Sometimes it designates a faculty of the soul, distinct from sensation, imagination, and memory, and which is the ground of *a priori* knowledge. It is believed that we can have *rational access* to the *truth* about the way the world is, and 'reason' is superior to truths from the senses. Historically, Descartes, Spinoza, and Leibniz are known as *Continental Rationalists* who were attracted to *mathematics* as a model for knowledge.

With these theories, an epistemic distinction between *a posteriori* and *a priori* truth is manifest. A proposition is said to be knowable *a posteriori* if its truth-value is determined by sense experience and observation. In comparison, a proposition is said to be knowable *a priori* if its truth can be established by reasons that are independent of empirical investigation or observation. Mathematics is deemed *a priori* in nature.

Another historical distinction due to Immanuel Kant (1724-1801) is the *analytic* and *synthetic* semantic distinction, where mathematics was deemed *analytic* in nature.

> An **'analytic assertion'** is a sentence that is true solely in virtue of the meaning or definition of its terms.
>
> A **'synthetic assertion'** is a sentence that is true (or false) dependent upon how the world is.

As these philosophical distinctions (*a priori*, analytic, *a posteriori,* synthetic) indicate, there has been a long history of metaphysical theorizing about how 'mathematics' and

'philosophy' differs from the 'physical sciences.' Williamson's theories follow from the recognition of these distinctions and problems, and he wants to respond to them.[2]

Leibniz's Worldview: Existence, Identity and Necessity

Williamson is heavily influenced by GW Leibniz (1646-1716) a rationalist metaphysician. Metaphysicians seek to investigate the fundamental structure of reality, which involves identifying the nature, constitution, and structure of *all that there is*. Metaphysicians seek to develop a conceptual framework involving the notions of 'object,' 'existence,' 'identity,' 'property,' 'relation,' 'necessity,' 'similarity,' 'possible worlds,' 'temporality,' 'persistence,' and 'causation,' among others.

For Leibniz, it is axiomatic that 'everything exists' *means the same* as 'there exists nothing which does not exist.' Assuming a non-empty universe, he argues the conclusion that 'everything exists' follows from the following three premises:

1) To exist is to be identical with something.
2) Everything is identical to itself.
3) Everything is identical to something (viz. itself).
4) Everything exists.

We can interpret the premises of this argument as consisting of implicit definitions (i.e., axioms) about the concepts of existence, identity, and thing, with a validly prescribed conclusion about what 'existence' is, in terms of the universal quantifier and things. All things are existents, and there are no nonexistent things.

In "On Contingency" (1686), Leibniz states:

> In my view it is common to every truth that one can always give a reason for every nonidentical proposition; in necessary propositions, that reason necessitates; in contingent propositions, it inclines. And it seems to be common to things that exist, both necessarily and contingently, that they have more reason for existing than others would, were they put in their place.
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> Every true universal affirmative proposition, either necessary or contingent, has some connection between subject and predicate. In identities this connection is self-evident; in other propositions it must appear through the analysis of terms.

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[2] During the era of The Vienna Circle (1922-1938), for logical positivists, the concepts of a proposition being 'analytically true,' 'tautologous,' '*a priori*,' or 'necessary' became nearly interchangeable. The concepts of 'synthetic,' '*a posteriori*,' and 'contingent' proposition also became nearly synonymous. Synthetic propositions are justifiable *a posteriori,* while analytic propositions are justified *a priori*.

> And with this secret the distinction between necessary and contingent truths is revealed, something not easily understood unless one has some acquaintance with mathematics. For in necessary propositions, when the analysis is continued indefinitely, it arrives at an equation that is an identity; this is what it is to demonstrate a truth with geometric rigor. But in contingent propositions one continues the analysis to infinity through reason for reasons, so that one never has a complete demonstration.[3]

Leibniz's writings are the roots of the historical discussion of 'contingent truths' and 'necessary truths.' In contemporary epistemology, it is claimed that there exists knowledge of (1) *necessary truths*, e.g., '2 + 2 = 4,' which cannot fail to be true, and (2) *contingent truths*, e.g., 'Obama was the 44th President of the United States,' which, while true, might have been false. The truth of a sentence (or proposition) asserted in context is either necessary or contingent. A proposition is 'necessarily true' if it is true in all possible worlds. A 'necessary proposition' is one that could not be false. Equivalently, a 'necessary falsehood' is true in no possible world. A proposition is 'contingent' if it is true in some possible worlds, and false in others. This sort of necessity/possibility involves a commitment to the existence (by stipulation) of possible worlds in order to account for the epistemic status of modal assertions. The semantic properties of sentences (e.g., necessity, possibility, impossibility, contingency) are understood in terms of possible worlds and from axioms of metaphysics, logic, and set theory. It is claimed that ordinary sentences (i.e., propositions) are not used to merely talk about how things actually are, but they are also used to talk about how things (e.g., individual objects, ways of being) could have been different. The 'meaning' of a word or sentence (asserted in context) is understood as a referential concept and must be analyzed in terms of the notion of an extension (and intensions). The referential force of a linguistic expression can extend beyond objects in the actual world to objects in other possible worlds. The concept of 'possible world' should shed light on what is called the 'nature' of modality.

Williamson's main concern is about metaphysical possibilities. As a proponent of possible world semantics, Williamson understands philosophical claims as *not* just being about what is the case (i.e., how things are), but that philosophy seeks to assess how things *must* be. In comparing a philosopher's occupation with that of mathematicians, he

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[3] From *G.W. Leibniz: Philosophical Essays*, edited and translated by Ariew and Garber (1989), p. 28.

says that both “sciences” work from their “armchairs” (and engage with experts in their armchairs). In comparison, physical scientists go out into the world to measure it and hypothesize about it. This *armchair* (non-experimental) *practice* that is *common* to both philosophers and mathematicians is how it *should* be according to Williamson. According to orthodoxy, ‘metaphysical possibility' cannot be reduced to linguistic rules and conventions: it constitutes a mind-independent subject matter for thought and talk. [4]

Textual exposition, interpretation, and criticism

We now turn to an exposition (and interpretation) of the main points of contention that Williamson argues about in his eleven chapters. All page references are to the 2020 edition with most of the text being direct quotes, and only *a few minor modifications* for *continued clarity*. Critical comments, as well as clarifications, are found in the footnotes.

In chapter 1, entitled ‘Introduction,’ Williamson considers the history of Philosophy going back to its ancient origins. He talks about its traditional concerns. He then raises a concern about how philosophy is related to natural sciences. At the beginning of philosophy, and at present, philosophers often have an interest in the same phenomena as natural scientists. He says that “philosophy and natural science seem to be in competition to answer the same questions about the underlying nature of reality” (p. 3). Williamson wishes to frame the methods of philosophy in relation to other ‘sciences,’ including ‘mathematical science.’

> Traditionally, philosophers have wanted to understand the nature of everything, in a very general way: existence and non-existence, possibility and necessity, the world of common sense, the world of natural science, the world of mathematics, parts and wholes, space and time, cause and effect, mind and matter. They want to understand our understanding itself: knowledge and ignorance, belief and doubt, appearance and reality, truth and falsity, thought and language, reason and emotion. They want to understand and judge what we do with that understanding: action and intention, means and ends, good and bad, right and wrong, fact and value, pleasure and pain, beauty and ugliness, life and death, and more. Philosophy is hyper-ambitious. (p. 3).

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[4] Williamson (2007) favors an investigation of 'metaphysical modality': "Philosophers characteristically ask not just whether things are some way but whether they could have been otherwise. What could have been otherwise is *metaphysically contingent*; what could not, is *metaphysically necessary*. We have some knowledge of these matters. We know that Henry VIII could have had more than six wives, but that three plus three could not have been more than six. So, there should be an epistemology of metaphysical modality… the epistemology of metaphysical modality is one of mind-independent truths" (p. 134).

He continues:

> This brief description raises an obvious question: since scientists study many of these topics, how is philosophy related to science? (p. 3).[5]
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> Philosophy and natural science seem to be in competition to answer the same questions about the underlying nature of reality.[6]
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> A crisis of method is created by the philosopher seemingly sitting in an armchair theorizing about how the universe must be, while the scientist goes out to look and see how it really is. If that's right, isn't philosophy obsolete? Thus, the rise of modern natural science has provoked a slow-burning crisis of philosophical method. (pp. 3-4).
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> Mathematics is just as scientific as natural sciences like physics, chemistry, biology… and mathematicians don't do experiments. Like *philosophers*, *mathematicians* work by *thinking* in an *armchair*. This book explains how the methods philosophers use, are the appropriate scientific methods for answering *their questions*, which are questions of *the traditional ambitious kind*. Like mathematics, philosophy is a non-natural science. Unlike mathematics, it is not yet a fully mature science. (p. 4, italics added).[7]
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> Many philosophers will hate my picture of philosophy. I leave the reader to judge. This book explains how philosophy can answer questions of stupendous generality.[8]

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[5] Williamson's concern with the relationship of 'philosophy' to the 'physical sciences' and 'mathematics' as kinds of 'sciences' is idiosyncratic. Intuitively something may be called a 'science,' if in at least part, it is a systematic theoretical description (e.g., explanation, prediction) of some given phenomena (e.g., human psychology, economic behavior, atomic behavior, geological structure, etc.). It has been argued here that philosophy should be practiced as a social science. At present it is anti-scientific, largely led by authorities.

[6] Analytic philosophy *shouldn't* be seeking the nature of reality in competition with physical scientists. It should be primarily about language and speaker intentions when using language and asserting sentences.

[7] Is this armchair methodology the way philosophy *should* be practiced? It leaves contemporary philosophy irrelevant to almost everyone. That mathematicians and nuclear scientists work in "armchairs" (e.g., with models) and collaborate with a well-trained and sophisticated staff in order to answer theoretical problems is acknowledged. But to imply that a philosopher's philosophical questions and answers (and explanations) can only be stated and judged by professional philosophers, in their *armchairs* with their *own vocabulary*, should *not* be granted. It is unfortunate that philosophers work in an environment of professional expertise and precision among talented thinkers, whose opinions dominate theoretical discussion.

[8] The PE theory of knowledge is neither empiricist nor rationalist. Substantial important knowledge comes from an introspective understanding of both 'natural' and 'artificial' languages and not directly (nor derivatively) from sense experience. To better understand languages, a familiarization with six kinds of concepts, as well as the three kinds of definition (i.e., reportive, theoretic, stipulative) are needed.

Chapter two is entitled “Starting from Common Sense” where Williamson takes the vague group resemblance term ‘common sense’ and then stipulates that by ‘common sense’ he means ‘whatever most of a society’s members know.’ He says that much of our knowledge comes naturally or casually as we grow up and live in the world, even without formal education at school or university. He says that there’s a distinction between ‘knowledge’ and ‘ignorance,’ which is a task for philosophy (specifically, epistemology) to explain. But Williamson says that thinking about common-sense distinctions can sometimes leave us unsatisfied. He maintains that we may need to introduce new terminology to mark clearer or deeper distinctions that create a more helpful framework for further investigation.

Williamson asserts that common sense is the starting point, not the end point for theoretical investigations. After observing actions of leopards and impalas in the wilds of Africa, Williamson says that it is biologically implausible to deny common-sense knowledge to these non-human animals. Leopards and impalas have many common-sense *beliefs* and *skills* that allow them natural survival. It is therefore biologically implausible to deny ‘common sense’ knowledge to humans. He says that ascribing such knowledge to humans isn’t favoritism, as there is good evidence for it. Williamson’s *Knowledge and its Limits* (2000) argues that it is a mistake to analyze knowledge in terms of other, more fundamental epistemic notions, because knowledge itself, in at least many cases, is more fundamental. This is termed ‘knowledge first’ epistemology.

> We have no choice but to start from the knowledge and beliefs that we already have for getting new knowledge and beliefs. In a phrase, we have to start from common sense. Of course, that doesn’t mean that we have to end at common sense. We hope to go far beyond it. But can we ever completely escape our reliance on common sense? Don’t we bring it with us on our journey? Philosophers are not quite easy about common sense. (p. 6).

> What does common sense include? Humans start with more or less the same cognitive capacities (there are exceptions, of course). We can look and see. We can listen and hear. We can touch and feel. We can lick and taste. We can sniff and smell…. manipulate, search, remember, imagine, compare, and think. We can communicate to others in words and pictures, and understand what they say and show to us. In such ways we come to know the world of which we are a part. Much of that knowledge comes naturally or casually as we grow up and live in the world, even without formal education at school or university. (p. 7).

As stated above:

> By 'common sense' knowledge in a society I mean whatever most of its members know. Thus, common-sense knowledge varies from one society to another. In modern societies, it's common-sense knowledge that the sun is much larger than the earth. In stone age societies, that wasn't common sense knowledge... In every human society it's common-sense knowledge that people have heads and blood. (p. 7). [9]
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> Common sense *beliefs* in a society are whatever most of its members *believe*. All common-sense knowledge may be common-sense belief, but not all common-sense belief is common-sense knowledge. For if a belief is false, it isn't knowledge. In an isolated society where everyone believes that the earth is flat, they don't *know* that it's flat, simply because it isn't. They may *believe* that they know that it is flat, but that belief is false too. Similarly, in a racist society, most members have a false belief about people of other races. They are common-sense beliefs in that society, but not common-sense knowledge, simply because they are false, so not knowledge at all…. It's hard to distinguish between common-sense knowledge and common-sense beliefs in one's own society, but often members of another society can tell the difference. (p. 8).
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> I'll apply the phrase 'common sense' not only to common-sense knowledge and common-sense belief in a society, but also to the usual ways of thinking which produce that knowledge and belief. (p. 8).
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> Humans, like many other animals, are curious. We want to know. It's good to have lots of knowledge. It comes in handy in all sorts of unpredictable ways.
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> 'What is' questions go back to the beginning of philosophy. Plato asked, "What is justice?" and "What is knowledge?"—still central philosophical questions. He was not asking about (ancient Greek) words or concepts, but about justice and knowledge themselves… there's a distinction between just and unjust actions; one task for philosophy (specifically, political philosophy) is to explain the underlying difference. (p. 9).[10]

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[9] Philosophers are way too fond of creating technical stipulative definitions (not truth-apt) and proceeding with dialogue using those stipulations. Williamson's definitions of 'common sense knowledge' and 'common sense belief' needn't be terms that we use in judging what knowledge is. Of course, philosophers will typically treat such definitions as descriptive (truth-apt) about how the author intends to use a term.

[10] Williamson's claim that Plato wasn't asking about the *concepts* of 'justice' and 'knowledge,' but instead about justice and knowledge 'themselves,' is just an assertion of Williamson's own perspective. From the perspective here, it is the *concepts* of 'justice' (or 'moral rightness') and 'knowledge' that need to be studied. That Williamson believes that there is a real distinction between 'just' and 'unjust' actions implies his acceptance of a 'moral realist' metaethical worldview. Williamson's moral realist stance is stated in "Unexceptional Moral Knowledge" in the *Journal of Chinese Philosophy* 49 (2022) 405-415.

There's a distinction between 'knowledge' and 'ignorance.' It is a task for philosophy (specifically, epistemology) to explain that underlying difference. Common sense recognizes life, justice, and knowledge. Our natural curiosity can make us want to understand life, justice, and knowledge better. (pp. 9-10).[11]

As mentioned above: Of course, thinking about common-sense distinctions sometimes makes us dissatisfied with them. The ordinary words with which we draw them may be too vague, or muddle several different distinctions, or mark only superficial differences. That can happen in both philosophy and natural science. We may need to introduce new terminology to mark clearer or deeper distinctions and create a more helpful framework for further investigation. Common sense is the starting point, not the end point. (p. 10).

Any theory inconsistent with common-sense knowledge is false. For whatever is known is the case, so whatever is inconsistent with it is *not* the case… Contemporary philosophers rule out philosophical theories by showing them to be inconsistent with common-sense knowledge. (pp. 10-11).

There's an obvious worry about using common sense as a standard by which to judge philosophical theories. What if we are mistaking a false common-sense belief for common-sense knowledge? In some societies, they believe that 'Torture is not wrong'; indeed, they believe 'We all know that torture is not wrong.' Philosophers in such a society may think that they have refuted a theory of human rights by showing it to be inconsistent with common-sense knowledge… The worry is that appeals to common sense are just a disguise for reliance on popular prejudice in judging philosophical theories. (p. 11).

Natural science is rooted in our capacity to make observations… A theory is self-undermining if is incompatible with the possibility of obtaining evidence in its favor. This goes for theories both in natural science and philosophy. Since obtaining such evidence ultimately depends on common-sense methods of knowing through the senses, there's a limit to how far defensible theories can disagree with common sense. (p. 12).

The disputed role of common sense as a check on philosophical theorizing raises a more general question: what kind of evidence have we to go on in philosophy?

Many philosophers treat *appearances* as the gold standard of evidence by which to judge theories in both natural science and philosophy. On their view, a good theory must *save the appearances*. In other words, it should accurately predict how things will appear to us—or at least, avoid inaccurately predicting those appearances. (p. 12).

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[11] The attention to a distinction between 'knowledge' and 'ignorance' is rather unique to Williamson. The distinction between 'true belief' (that may or may not be knowledge) and 'false belief' is more standard.

Why equate evidence with how things appear to us? What makes the equation appealing is this thought: I may be wrong about how things really are, but at least I'm not wrong about how things *appear* to me. But are we really infallible about how things appear to us? … Judgments can be right or wrong. We humans are fallible in making judgments about how things appear to us… Whatever our evidence is, we are fallible in making judgments about it. Sometimes we get it wrong. (p. 13).

In any case, equating evidence with appearances runs contrary to the spirit of science. That spirit requires evidence to be checkable, repeatable, open to scrutiny by others… The case of natural science suggests that the quest for a kind of evidence about which we are infallible is a wild goose chase. *Whatever* evidence is; what we treat as evidence will sometimes turn out to be false. No scientific procedures are designed to provide 100 per cent guarantees against error in practice. Rather, they are designed to facilitate the correction of errors in the long run. That is the best to which philosophy can aspire. (pp. 13-14).

Both philosophy and natural science must rely in multiple ways on our ordinary human capacities to learn about the world in common-sense ways. Both must therefore develop strategies for responding to the danger that what we have treated as knowledge is in fact false… we cannot rely on prevention alone, for occasional errors are bound to creep in, despite our best efforts… we must allow a right of appeal of evidence… but a mischievous skeptic would bring both philosophy and natural science to a halt, just by mechanistically questioning whatever was produced as evidence. Rather, to be taken seriously, the critic must offer good reasons for doubting a specific piece of supposed evidence. Those reasons themselves had better be based on evidence, which can in turn be questioned. (p. 14).[12]

Think of a leopard stalking a herd of impalas… For both leopards and impalas, it is literally a matter of life or death to know whether there is a member of the other species nearby, and if so, where. They have evolved to be good at acquiring such knowledge. We can often explain why a particular leopard or impala acts as it does by attributing just such knowledge to it. Of course, like us, they are fallible… an impala may falsely believe that no leopard is nearby. But what explains the error is the leopard's skill or luck, not the impala's total detachment from reality. (p. 15).

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[12] Williamson says that to be taken seriously, the skeptic must offer 'good reasons' for doubting a specific piece of supposed evidence and the reasons themselves had better be based on evidence, which can in turn be questioned. Williamson's claim that persons must rely on ordinary human capacities (and common sense) to learn about the world and *avoid the regress* of skepticism seems to be similar to the 'contextualist theory' of personal justification that was described in chapter 3, where it was argued that regresses terminate with *personal judgments* about what constitutes 'adequate evidence' (or 'good reasons') to affirm a proposition as being likely true. Williamson is *correct* here, that arbitrary 'mechanical' skeptical questioning doesn't prevent the existence of human knowledge.

> It is biologically implausible to deny common-sense knowledge to non-human animals. It is just as biologically implausible to deny common-sense knowledge to human animals. Ascribing such knowledge involves no favoritism towards ourselves. There is good evidence for it. (p. 16).
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> The practice of testing philosophical theories against common sense knowledge is thus quite reasonable. So too is the practice of challenging alleged cases of common-sense knowledge given specific grounds for doing so. It can be hard in practice to say just what should count as part of our evidence. But the same goes for natural science too: evidence is always in principle open to challenge. (pp. 16-17).

Chapter 3 is entitled 'Disputing.' It focuses on the practitioners of philosophy and their peer interactions, and the prevalence of arguments. He says that by arguing with each other, all sides may test the strengths and weaknesses of their starting points, and there is nothing new about 'interpersonal dispute' as a medium for philosophy.

> Conferences on philosophy have much in common with academic conferences about anything else. But in one way they differ. Amongst philosophers, a lecture often follows— a question and answer (Q&A) period. That is when the speaker's arguments and conclusions are put to the test. Questioners propose counterexamples, allege fallacies, discern ambiguities. In response, the speaker fights for the life of their cherished ideas. Exchanges continue, back and forth, over several turns. The rest of the audience watches keenly, as if following a chess match, trying to work out who's winning. Sometimes a draw is offered with the words "It's a standoff" and tacitly accepted; sometimes the chair intervenes to cut short a stalemate… conferences often schedule an hour for question and answer (Q&A). (p. 18).
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> When it comes to the outcome, the chess analogy is misleading, since it suggests that, once the exchange is over, it's always clear who won. But the rules of argument are much less clear than the rules of chess, and can themselves be disputed, so two sides may disagree on the legitimacy or effect of a move. The chair is no umpire or referee, and doesn't rule on such matters. There may be no consensus on who had the better of the exchange. Perceptions can depend on prior theoretical commitments. Indeed, the exchange may itself have been partly or wholly on the legitimacy of moves in the lecture. (pp. 18-19).
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> Many exchanges in Q&A are straightforwardly cooperative. Audience members may suggest additional evidence for the speaker's idea, or new applications of it, or ways to generalize it, or modifications of it in the speaker's aims, or ways to simplify a supporting argument. (pp. 19-20).

The phenomenon of two sides arguing *against* each other is central to philosophical practice; and is connected with the starting point of philosophy. For how is one to discover the limitations of one's common sense and get beyond them? A natural answer: by meeting someone whose common sense is in conflict with one's own. By arguing with each other, both sides have to test the strengths and weaknesses of their starting points. (p. 20).

Intellectual inquiry requires relevant disagreements to be out in the open, not muffled up. I have occasionally experienced philosophical cultures in which hard criticism was frowned on. They were deeply hierarchal: those lower down the hierarchy were not supposed to question those higher up. This is an ideal habit for error. (p. 20).[13]

Like defense and prosecution lawyers, philosophers often argue for what others see as a lost cause. The reason is different, though: typically, these philosophers become over-attached to their own ideas. This is not a peculiarity of philosophers: it is a natural human trait. With pardonable exaggeration, the great physicist Max Planck said that truth triumphs in science not because opponents are won over, but because they die. Such obstinacy is not all bad; it ensures that ideas are given every chance to overcome criticisms, rather than being abandoned prematurely. (p. 21).

When two senior philosophers argue some issue out with each other in public, with prestige at stake, it is often clear that neither of them will ever persuade the other, even so, it is not a waste of time if there are uncommitted students in the audience, making up their own minds so as to which of the two having the better of the argument. (pp. 21-22).

To say that philosophical culture of interpersonal argumentation encourages competition instead of cooperation is like saying that a chess club encourages competition instead of cooperation. There's some truth in it, but it is a facile contrast… although there are winners and losers in some philosophical disputes, the institution of philosophy is a cooperative venture of philosophers… although chess does not primarily aim at knowledge in the way that philosophy may primarily aim at knowledge, games of chess do in fact add to knowledge, for instance of which positions are wins for black. Similarly, philosophical disputes add to knowledge, at the very least of which philosophical positions are defensible. Both philosophers in a dispute may improve their theories as a result, even if they still disagree. (pp. 22-23).

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[13] This seems to be exactly the error that journal editors are now making. Which ideas have influence depends on what looks promising to other philosophers. During 'normal philosophy,' philosophers don't like to question assumptions that they are *certain* of. Since current philosophy is mostly 'normal' philosophy (e.g., assuming compositionality, linguistic reference) theorists tend to ignore (and not confront) dissident opinion. Any criticism of the opinions of a strong hierarchy often meets with silence.

There is nothing new about the interpersonal dispute as a medium for philosophy. In medieval scholastic philosophy, oral disputations were formalized as a sort of game, played in Latin, with rules almost as formal as chess… There are also logic games more closely related to modern logic. They typically involve a defender and an attacker… if the statement is true, the defender has a winning strategy. Thus, if both players make the best moves available to them, the defender will win if the statement is true, and the attacker will win if the statement is false: the outcome of the game corresponds to the truth-value of the statement. Such games show the naivety of a general contrast between games and the search for truth, since their rules are designed precisely to serve as the search for truth. Of course, most philosophical discussion is *much* less formally structured than a logic game. Nevertheless, such games provide a good model of how, under suitable conditions, an adversarial framework can serve as the pursuit of truth.

In less formal terms, the natural written form to represent philosophical disputes and question and answer exchanges is the dialogue… Plato's dialogues are the most famous and evocative of the genre… The Greeks regarded philosophy as an interpersonal activity, not a solitary one… In general, the philosophical dialogue is a less pluralistic form than it looks: it has various characters but only one author. At worst it is a dialogue between the ventriloquist and his puppet… In contemporary philosophy, it plays only a minor role… For expository purposes, it embodies the interaction of different points of view in a vivid, memorable, and perspicuously structured way. A reader's emotions are more easily engaged by a dispute between imagined people than logical inconsistency between abstract theories. (p. 27).

Discussions of skepticism often focus on imaginary dialogs with a skeptic. Contemporary epistemologists are much concerned with the vulnerability of common-sense ways of thinking and talking to skeptical objections. They dramatize it in mini dialogues like this:

S: I know that the animal in this cage, is a zebra.

S1: For all you know, it is just a mule cleverly painted to look like a zebra. The zoo may be having financial difficulties and unable to afford a zebra.

S: I suppose that you are right, and I'm wrong. I don't know it is a zebra from my perceptual viewpoint.

S1's next step could be to suggest that **S** doesn't even know that he's awake, because he could be dreaming that he is at the zoo…

The *culture* of philosophy *supports* these skeptical moves by its unusually tolerant attitude to bizarre possibilities. (pp. 30-31, italics added).

Chapter 4 is entitled 'Clarifying Terms.' In this chapter, Williamson outlines some of his worldview and linguistic intuitions about definition, truth, reality, objects, number, concept, among other things. He concludes that as a *model for philosophy*, basic *mathematics* is far *more helpful* than the *dictionary*.[14] He says that what we need for clear reasoning is not trivial 'truths by definition' but strong, explicitly articulated theory. Clarity does not aim at a mythical standard of indubitability. Rather, its point is to make our reasonings clearly visible, as they are in mathematics.[15]

> Many philosophers have hoped to make philosophy less disputatious by clarifying terms, and to escape from futile, deadlocked arguments. (pp. 33-34).
>
> If we have to decide what to mean by a word, one definition may be more *useful* than another, but not more *true*.[16] For instance, in mathematics, it is more convenient to define the word 'prime' not to apply to the number 1, but making the opposite decision would not have led to false theorems, just to differently worded ones. (p. 34).
>
> According to Rudolf Carnap (1891-1970), when philosophers ask what sound like deep *theoretical questions about the nature of reality*, such as "Do numbers exist?", what is really at stake is a practical question about which language it would be most fruitful to speak, for scientific purposes. (p. 34, italics added).
>
> For Ludwig Wittgenstein (1889-1951), philosophical problems arise because our ordinary language exerts a deep pull on us toward confusions…concerning proper names (e.g., of a named river, Danube) and numerical terms (e.g., number 7) tempting us to think that *numbers* are just as much *objects* as *rivers*, only more abstract. Then we wonder how we can think about *things* (e.g., 7, 2, 6) that are *nowhere* (pp. 34-35, italics added).[17]
>
> What matters is not the word 'number' but the concept *number*. Different words can express the same concept, or have the same meaning. For Carnap and Wittgenstein, philosophy asks *conceptual* questions, not merely *verbal* ones. It clarifies concepts, sorts out conceptual confusions. In the 20th century, many philosophers held such views. Many still do. Naturally, those views influence how they do philosophy in practice. (p. 35).

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[14] This doesn't seem right.

[15] 'Visible' is a metaphor. The term is applicable to visual empirical sensing. not math or philosophy.

[16] Unclear.

[17] This is a conceptual problem for philosophers only.

> Clarifying concepts: if that is the philosophy's job description, it has something useful to do without attempting, hopelessly, to rival science… The picture may seem to legitimize the armchair way of doing philosophy, to explain why philosophers have no need to go out and look at the world and experiment on it. For they already possess the concepts under investigation, by their competence in a language that expresses them; either natural language or an invented artificial language defined by explicit rules. It's not like studying a foreign language from the outside. (p. 35).

> In practice, hopes that this linguistic or conceptual turn would make philosophy less disputatious have been dashed. Identifying the unspoken rules of one's own language turns out to be very hard.[18] If you have ever helped someone learn your native language, you probably have the experience of knowing that something that they said sounded wrong but without being able to explain to them why—what rule they had broken. (pp. 35-36).

> Although *linguists* have made significant *progress* in understanding the *rules* of *one's native language* from the armchair, this isn't a fully adequate method. If we switch from describing how words are currently used to saying how it might be helpful to use them in the future, things are just as controversial, because people disagree about what the effects would be, and whether they would be improvements. (p. 36, italics added).[19]

> There are controversies about how to use words in the future. An example is a recent bitter controversy about the word 'woman.' The standard definition was biological: a woman is an adult female human. But what about the social role of women—their moral and legal rights to get an education, to own property, to vote, conventional expectations of their behavior in sex, marriage, child-rearing, careers, and so on? Don't those have something to do with the concept *woman*? … There is no easy answer to the question *what concept* or concepts the word *'woman'* now *expresses*… The very idea of someone in authority telling ordinary people how they ought to use ordinary words like 'woman' is controversial too…. a trend towards redefining terms may favor sinister causes, for instance, when 'torture' is redefined to exclude waterboarding. Politically, *people habituated* to *going along* with *linguistic reforms* are easier to manipulate. (pp. 36-37, italics added).[20]

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[18] Is it a purpose of philosophy to identify the unspoken rules of one's language? This entire chapter is unconvincing and uninformative. See chapter 6 (vol. 1) for a better explanation of 'concept clarification.'

[19] That linguists have made progress understanding (syntactical) rules for given natural languages shouldn't be of importance for analytic philosophers (except for formal semanticists and metaphysical realists).

[20] The last sentence is interesting. With so many technically formalized fixed definiens concepts (e.g., 'propositional attitude,' 'rigid designator,' etc.), it seems that philosophers are easy to manipulate. The topic of linguistic 'reform' is also addressed in Herman Cappelen's *Fixing Language* (2018).

> Still, words sometimes need clarification. That applies to *all* forms of inquiry (e.g., 'mass' in physics and 'feudal' in history), not just to philosophy. Does conceptual clarification play a special role in philosophy, or does it play more or less the same role there as it plays in all forms of serious inquiry? (p. 37).
>
> The need to clarify 'mass' came from theoretical developments in physics, in particular Einstein's theory of special relativity. The need to clarify 'feudalism' came from developments in history—more detailed analyses of more societies in more periods. Where is the need for philosophers' clarifications supposed to come from, if all they do is clarify? If they are just clarifying previous philosophy, wouldn't it be cheaper and easier to abolish philosophy altogether? (pp. 37-38).
>
> We can never expect to make our words perfectly precise. For in order to make one word more precise, we must use other words that are themselves to some extent vague, and that vagueness will infect our clarifications. Vagueness can sometimes be reduced, but it never be eliminated from either language or thought. Efforts at clarification should be concentrated where there is a special need for it. The need may be either theoretical or practical. There were special theoretical needs to clarify 'mass' and 'feudalism.' (p. 38).
>
> As a model for philosophy, *basic mathematics* is far *more helpful than the dictionary*. What we need for *clear reasoning* are not trivial 'truths by definition' but strong, explicitly articulated theory. Clarity does not aim at a mythical standard of indubitability. Rather, its point is to *make our reasoning clearly visible*, as they are in mathematics. If you hear someone deny the value of clarity, ask yourself why he might not want *mistakes* in reasoning to stand out clearly. (p. 44, italics added).[21]

Chapter 5 is entitled 'Doing Thought Experiments,' Williamson asks us to use our imaginations when presenting a Gettier case: **S** sees what appears to be smoke coming from a distance and believes that **p**: 'There is a fire over there.' In fact, **p** is true. There is a fire over there. But as it so happens, **S**'s perceived smoke coming from a distance was really a swarm of bees. As a consequence, most thoughtful people would agree that (in this thought experiment) **S** possesses a reasonable and true belief, but this isn't an instance of knowledge. Even though **S** possesses a justified true belief, **S** didn't really know that there was a fire. Williamson elaborates:

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[21] To repeat, Williamson seeks 'clear thinking' where mistakes in reasoning 'stand out clearly.' He says that what is needed for progress is 'explicitly articulated theory' and not articulations of definitions.

> Since knowledge is not mere justified true belief, what more is it? Dozens of alternative answers were proposed. One after another, they too fell victim to such counterexamples. The attempted analyses of knowledge had to become more and more complicated, as did the counterexamples to them. Perhaps we shouldn't try to analyze knowledge in terms of belief plus truth plus other factors, because somehow knowledge is more basic than belief. (p. 46).[22]

Another imagined 'thought experiment' briefly described by Williamson is an argument (involving a violinist) about the ethics of abortion as presented by Judith Jarvis Thomson (1971). She argues that just granting that the fetus is a person, does not settle the issue about the morality of abortion. Williamson returns to the question of methodology:

> Although thought experiments are in widespread use, they can be made to sound like cheating. After all, physicists have to do their experiments, and observe the results. It's not enough for them to just *imagine* doing their experiment and *imagine* observing the result. How come philosophers get away with just sitting in their armchairs and imagining it all? (p. 48).
>
> Part of the answer is that philosophical theories typically claim that some generalization is necessary: it holds in all *possible* cases, not just in all *actual* ones… Another part of the answer is that physicists (e.g., Galileo, Einstein) as well as philosophers use thought experiments. (p. 48).
>
> We can go deeper by reflecting on how a theory is tested—*any* theory, in philosophy, physics, whatever. To test it properly, we have to work out its consequences, what it predicts about various possible situations… If the theory's prediction about the scenario turns out to be correct, that is serious evidence for the theory. If its prediction turns up to be incorrect, that is serious evidence against the theory. (p. 49).
>
> What is needed is some reliable way, independent of the theory, to judge whether its prediction is correct. That may even be quite easy once we imagine the relevant scenario. For instance, without relying on any philosophical theory of knowledge, humans have some ability to recognize the difference between knowledge and ignorance in down-to-earth cases— for instance, who knows when you got up this morning and who doesn't. We can apply that ability to the 'fire' thought experiment (above) to recognize it as not a case of knowledge. Actualizing this possible situation is unnecessary. (pp. 49-50).

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[22] Williamson claims that since informative definitional analyses of 'knowledge' in terms of 'belief' and 'justification' have failed (in the past), we should adopt 'knowledge' and 'ignorance' as the fundamental concepts of epistemology. Since it is obvious that wild animals (e.g., leopards) have knowledge based on their beliefs and skills, it is certain that humans also possess skills and beliefs so as to possess knowledge.

But when a thought experiment is used as a serious objection to a theory, it matters whether the scenario is possible. For instance, if there was some inconsistency hidden in the 'fire' story, it would not refute the theory that reasonable true belief is knowledge. *If zombies* are *totally impossible*, then Chalmers (1996) *cannot use them* against theories that reduce mind to matter. (p. 51, italics added).[23]

Sometimes it's hard to tell which hypotheses are possible, which impossible. That is a problem for some thought experiments—but not for all. The possibility of the 'fire' scenario is beyond reasonable doubt. Through imagining it properly, we know that it is possible. Also*, through our imagination*, we can learn more about it. Crucially, we can come to know that, in such a scenario, the person who reasonably and rightly believes there's a fire over there doesn't *know* that there is a fire over there. (p. 52).

At first, the idea of knowing by imagining may sound crazy. [24] Isn't knowledge to do with *fact*, imagination with *fiction*? But that stereotype of the imagination is too simple. The human species did not evolve such an elaborate psychological capacity just so we can indulge in our fantasies. When you think about it, a good imagination brings all sorts of practical rewards. For instance, it alerts us to future possibilities, so we can prepare for them in advance—guard against dangers, be prepared to take advantage of opportunities. As you enter a forest, it tells you there may be wolves, but also edible berries, to be on the look-out for. If you have a problem, your imagination may suggest possible solutions, such as different ways that separates you from your destination. (p. 52).

For practical purposes, a good imagination doesn't generate lots of possibilities; too many for you to think about. Instead, it generates a few possibilities; those it is most useful for you to think about—*practical* possibilities. Such an imagination improves your chances of survival. It is closely linked to predict the future. If you see someone starting across a rickety bridge, you may predict it will collapse. Even if no one is starting across it, you may imagine yourself doing so, predict that it would collapse, decide not to try, and so save your life. In the long run, evolutionary pressures are likely to improve the accuracy and reliability of such imaginative exercises. (p. 53).

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[23] David Chalmers (1996) *The Conscious Mind: In Search of a Fundamental Theory* involves metaphysical questions about the philosophy of mind. It includes talk about zombies.

[24] Williamson is right. The idea of 'knowing by imagining' does indeed sound crazy.

> Imagining is our most basic way of learning about hypothetical possibilities. No wonder we use it when doing thought experiments… Only the dumbest of animals would *not* think about hypothetical possibilities. When we do it, we usually do it in the normal human way, by using our imagination. Thought experimentation is just slightly more elaborate, careful, and reflective version of that process, in the service of some theoretical investigation. Without it, human thought would be severely impoverished. (p. 53).[25]

> Unfortunately, some philosophers have described philosophical thought experiments in ways in which make them sound much more exceptional and mysterious than they really are. When we judge that **S** doesn't know that **p** (i.e., there is a fire over there), they say we are relying on an *intuition* that he doesn't know there's a fire over there. 'Intuition' sounds like some strange inner oracle, guiding or misguiding us from the depths. (p. 54).[26]

> Recently, some philosophers have argued that philosophers *shouldn't* rely on intuitions. Others have argued that philosophers don't rely on intuitions. The debate rests on confusion about what 'intuitions' are supposed to be. (p. 55).

> In the philosophical tradition heavily reliant on thought experiments, they had been mainly judged by white males, but why should whites be any better than non-whites at judging thought experiment, or males any better than females? … Recent studies show that the statistical differences between different ethnicities and genders are minimal. On the picture emerging now from the new evidence, the patterns underlying our *reactions to philosophical thought experiments* have far more to do with the *cognitive capacities* we share, irrespective of our ethnicity and gender. (pp. 56-57, italics added).[27]

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[25] For Williamson, thought experiments in philosophy (e.g., Gettier cases) employ deductively valid arguments with counterfactual premises that we evaluate as we evaluate other counterfactuals, using a mixture of imaginative simulation, background information, and logic. Thought experiments turn out to be modal arguments, typically valid ones, with counterfactual conditionals and possibility claims as premises.

[26] Williamson's aversion to the term 'intuition' is simply a statement of a personal linguistic intuition. As discussed in chapter 9 (vol 1), an 'intuition,' as understood by many philosophers, is what a person takes to be true at the outset of an inquiry (or as a matter of 'common sense'). An intuition as a kind of belief, or an opinion. An intuition is a belief that we are pre-theoretically committed to, inclined to believe, or seems intrinsically plausible. It is a report of 'what we would say' if asked our gut-level opinion about the correct answer to a given question. 'Intuitions' differ from empirical beliefs about the physical world and language because they involve an *interpretation* of the way things are and (to some extent) are *non-inferential* (i.e., without explicit reasons). Intuitions provide the evidential data to be explained and scrutinized by a philosophical theory. Both 'world-view intuitions' and 'linguistic intuitions' play a role in conceptual analyses. An intuitive belief can be a 'seems to be the case' and unreflectively tentative; or alternatively an intuitive belief can be strongly held (but not infallible). Persons sometimes have strong pre-theoretical beliefs (e.g., 'the sun moves around the earth,' 'there are moral truths,' 'I know I'm not a brain-in-a-vat') but such beliefs may be in error. Intuitions are the starting point for the development of a philosophical theory.

[27] Only philosophers with good cognitive capacities, can make judgments about thought experiments?

> We often make mistakes in judging real-life cases; why should we be immune to making them in judging thought experiments. This isn't a reason for not using thought experiments, for all human faculties are fallible. Rather, it's a reason for spreading our bets, not relying exclusively on thought experiments. If we use other methods too, they may help us catch occasional mistakes in judging thought experiments, even if those mistakes are species wide… In the long run, cognitive science, including the experimental philosophy movement may cast light on inherent bias in human thinking, and to help us resist them, in ourselves as well as others… (pp. 57-58).[28]

Chapter 6 is entitled 'Comparing Theories.' Williamson argues that the methods of philosophy in choosing between rival theories isn't so different from the more theoretical methods of natural science. We want the theory that best explains whatever evidence we can get. The method of choosing between theories on that basis is called *inference to the best explanation*. It is widely used in natural science and philosophy.[29]

> In contemporary philosophy, physicalism says that everything is physical. Physical here means whatever laws of physics govern, including electromagnetic fields and spacetime as well as matter… Amongst recent philosophers, a leading physicalist was WVO Quine (1908-2000). (pp. 59-60).
>
> You might wonder why physicalism belongs to philosophy rather than to physics itself. The reason is the total generality of 'everything' in stating the theory. For instance, if there are numbers, then everything includes them, so physicalism implies that numbers are physical. If there are minds, then 'everything' includes them too, so physicalism implies that minds are physical. (p. 60).
>
> But "Are numbers physical?" and "Are minds physical?" are not questions in physics. By themselves, the mathematical and experimental methods of physics don't answer them… The people who grapple with such issues are philosophers. (p. 60).
>
> The methods philosophy needs for choosing between rival theories need not be so different from the more theoretical methods of natural science. We want the theory that best explains whatever evidence we can get. The method of choosing between theories on that basis is called *inference to the best explanation*. It is widely used in natural science and philosophy… That general way of choosing between theories is called *abduction*. (p. 70).

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[28] Williamson favors an interdisciplinary approach to philosophy and for all 'sciences.'

[29] This abductive methodology was deemed as a correct way for doing analytic philosophy in chapter 9 (vol. 1). Williamson is *correct* in making 'abduction' central when comparing some theories.

In chapter 7, entitled 'Deducing,' Williamson indicates his worldview and linguistic intuitions about abduction and philosophy's relationship with the disciplines of natural science and mathematics. He says that abduction plays a discreet but fundamental role in logic and mathematics. In respect of real-life experimentation, *philosophy* is *closer to mathematics* than to natural science. He says that as a systematic form of inquiry philosophy is a science, but not a natural science.[30]

> Most research in logic and mathematics is non-fundamental. One proves theorems deductively, applying accepted principles and methods, taking their correctness for granted without asking where they come from. But when their correctness is questioned, the answer is abductive. Thus, it is a false contrast to describe natural science and philosophy as abductive, logic and mathematics as deductive. Abduction plays a discreet but fundamental role in logic and mathematics. (p. 82).

> We might picture philosophy as somewhere 'between' mathematics and natural science, except that doing so misleadingly suggests a one-dimensional comparison. In respect of *abduction,* philosophy is closer to *natural science* than to the non-natural science of mathematics. In respect of *real-life experimentation*, philosophy is closer to *mathematics* than to natural science… As a systematic methodological form of inquiry, philosophy is a science but not a natural science. (p. 82, italics added).

> As Bertrand Russell wrote, "logic is concerned with the real world just as truly as zoology, though with its more general and abstract features." Classical logic is a good theory of the most abstract and general features of the world. It has no transcendental justification, no proof… It needs no such justification. (p. 86).[31]

> Rather, classical logic is justified like other scientific theories, by the sort of abductive comparison with its rivals. Classical logic is simple and elegant. It is logically stronger than most of its rivals: more informative, with more power to unify and explain general patterns… It is one of our best scientific theories… *Classical logic* is also a contribution to philosophy. The abstract and general *patterns in reality it describes* are of central philosophical significance. (p. 86, italics added).[32]

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[30] A distinction between 'natural science' and 'non-natural science' is old and should be retired.

[31] Logic' is not neutral. For example, standard systems rely on (1) **p** is either true or false, (2) words have reference, meaning, and aboutness, and (3) the meaning of a sentence depends on the meanings of words that it is composed of. This isn't a neutral interpretation of language. Add a vocabulary of properties/relations,' 'singular terms/predicates,' 'extensions/intensions,' 'propositions,' 'propositional attitudes,' and 'possible worlds,' there is no clear sense in which 'logic' is a 'neutral' arbitrator of debate.

[32] Does classical logic describe 'patterns in reality' or is this just Williamson's metaphysical worldview?

> Classical logic concerns the logic of 'not,' 'and,' 'or,' 'every,' 'some,' and 'is.' Rather than revising classical logic, some logical theories extend it. An example is modal logic, which concerns the logic of 'can' and 'must,' or 'possible' and 'necessary.' *Since it often matters philosophically whether something is possible or impossible, necessary or contingent, modal logic is the relevant branch of logic for many philosophical arguments*. (p. 86, italics added).[33]

Chapter 8 is entitled 'Using the History of Philosophy.' Williamson says that in practice, those who make significant original contributions to philosophy are well acquainted with both the historical and recent work of other philosophers. He says that to that extent, philosophy resembles mathematics and natural science. At any time, only a limited range of ideas are under discussion in philosophy. Knowing more of philosophy's history expands one's resources.

> Much of what is taught in Philosophy courses at major universities is the *history* of philosophy. By contrast, little or none of what's taught in a department of mathematics or natural science is history of mathematics or of natural science… Meanwhile, philosophy students have to read books, or large chunks of them by long-dead great philosophers… Philosophy seems to have a different relation to its past from that of mathematics and natural science to their pasts. (p. 89).

> The idea that philosophy can only be the history of philosophy is self-defeating, for it is itself a controversial philosophical option, which we are under no obligation to accept. Philosophers in the history of philosophy wrote on the history of philosophy. Their objective was not to interpret other philosophers' theories… but to construct their own (e.g., the mind-body problem) which is not radically different from scientific theories… and there are ways of deciding *rationally* between such theories. (p. 91, italics added).

Williamson analogizes philosophy as a kind of aesthetic experience:

> One can explore the history of philosophy as a sort of intellectual tourist. Just as an atheist can wander in admiration and awe through a great temple, cathedral, or mosque, so one can read great monuments of philosophy while rejecting the theories they express. Some works, such as Plato's dialogues, are unforgettable masterpieces of literature with obviously artistic qualities of prose, style, imagery, and dramatic form. Others… as Kant's *Critique of Pure Reason* (1781) and GWF Hegel's *Phenomenology of Spirit* (1807), are turgidly written but still constitute tremendous works of art by their towering, intricate architecture of ideas. (p. 91).

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[33] For Williamson and metaphysical realists, the idea of 'possible worlds' as a fully detailed course of events that the universe *could* have taken, is central to understanding the meaning and logic of modal verbs such as 'can' and 'must,' 'may' and 'ought.' What's "possible" is what holds in *some possible* world; what's "necessary" is what holds in *every possible* world. These are its central fixed definiens definitions.

He talks about how philosophers come to have an impact on each other:

> Which ideas have influence in philosophy depends on which look convincing or at least promising to other philosophers. (p. 93).
>
> There is the myth of the lone genius, thinking out everything out for themselves in glorious isolation. That is not how philosophy or mathematics or natural science works. Although much of what has been achieved there by solitary thought, it is done by thinkers who had already learned much from the work of others… Philosophy advances by rationally comparing ideas, through dialogue, not monologue. One must be involved in the conversation to know which ideas have been proposed as rivals to one's own, and what common ground one has with their proponents to start arguing against them… In practice, those who make significant original contributions to philosophy are well acquainted with the recent work of other philosophers. To that extent, philosophy resembles mathematics and natural science. (p. 95).
>
> At any time, only a limited range of ideas are under discussion in philosophy. Knowing more of its history expands one's resources. Like good mathematicians, good philosophers have lots of different examples and strategies up their sleeve… (p. 96).
>
> The idea of a possible world—a fully detailed course of events the universe could have taken—has turned out to be central, technically and philosophically, to understanding the meaning and logic of modal verbs such as 'can' and 'must,' 'may' and 'ought.' What's possible is what holds in some possible world; what's necessary is what holds in every possible world…Three hundred years ago, Leibniz wrote about possible worlds. (pp. 97-98).
>
> Perhaps more than any discipline, philosophy is willing to question its own assumptions, as well as those of others. (p. 98).
>
> Of course, progress in mathematics and natural science often depends on *not* questioning basic assumptions, but instead building on them. Such activity is 'normal science,' in the words of the physicist, historian, and philosopher of science Thomas Kuhn (1922-96). Only when normal science hits a crisis is there a return to basics, and questioning of them, often followed by a scientific revolution, according to Kuhn. Much contemporary philosophy is 'normal philosophy,' building on assumptions without questioning them. (pp. 98- 99).[34]

[34] As mentioned above, and as Williamson indicates, during periods of 'normal philosophy,' philosophers don't like to question assumptions that they are certain of. There are key assumptions that philosophers of language are currently unwilling to question (e.g., the principle of compositionality, that linguistic entities used in context have 'reference' which allows them 'meaning'). Since current philosophy is mostly 'normal philosophy,' theorists tend to ignore (and not confront) dissident opinion (as hindering theorists' progress).

> However, philosophy also includes more revolutionary theory or would-be revolutionary activity than most disciplines do, because its traditional intellectual values so encourage and reward the questioning of basic assumptions. (p. 99).

In chapter 9 entitled 'Using Other Fields' Williamson surveys other disciplines and compares them with philosophy.

> Philosophy is one amongst many fields of systematic inquiry: mathematics, physics, biology, history, economics, psychology, linguistics, social anthropology, computer science… none is soundproofed from the other. *Creativity* often involves combining ideas and knowledge from different areas. Philosophy is no exception. That doesn't make it somehow secondary, any more than physics is secondary because it relies on mathematics. If philosophers brought no distinctive *skills* of their own to encounters with another field, they would add nothing new to its work. Often, the influence goes in both directions, teaching and learning. (p. 100, italics added).

> (1) *Political philosophy* asks how society *should* be organized. Some people say the best form of government is benevolent dictatorship. (p. 100).

> The *point* of a system of government is to work in practice, living with people in real time. When someone advocates such a system, we should demand evidence that in practice benevolent dictatorship works better than the alternatives. An example of a real-life benevolent dictatorship was that of Yugoslavia's Tito (1892-1980), where upon a few years after his death, the country broke into civil war. What was life like under his rule? How benevolent was he really? (p. 101).

> I'm hardly neutral, since my father-in-law spent fourteen months in prison for publishing an article abroad criticizing Tito. In any case, assessing Tito's rule is a complex task, requiring deep historical knowledge. If advocates of benevolent dictatorship deny Tito's tenure as an example of benevolent dictatorship, they should tell us who was an example. Then we can assess their alternative examples, in ways properly informed by history. If they say no dictator has ever been benevolent, we should ask them how they know that benevolent dictatorship *would* work well if it were tried. (p. 101).[35]

> (2) *Social anthropology* studies diverse human societies and cultures: how they are organized, what people in them believe, value, make, and do; how they think, feel, and behave… which help us understand how other societies, past or present, are in some ways very different from ours, in others very similar. (p. 102).

[35] Williamson is a moral realist. He believes that political science should play a normative role as well as its descriptive analysis of the realities of political systems. He thinks that there are reasons for preferring one political system over another, in part based upon real-life histories.

Radical disagreement between human cultures is possible, but so is rational communication across such disagreements… Languages are like marketplaces where people with clashing worldviews and forms of life can sometimes exchange ideas. (p. 103).

None of this means that no worldview or belief system it truer than another. The extreme relativist belief (or theory) that all beliefs are somehow equally true implies a refusal to take the challenge of other beliefs seriously. In dismissing the possibility that we are right, and they are wrong, it also dismisses the possibility that they are right and we are wrong. (p. 103).[36]

(3) *The philosophy of language and linguistics* have theoretical overlap. Language is the essential medium of philosophy. If we misunderstand *how words work*, we are liable to do philosophically badly. (p. 103, italics added).

In assessing philosophical arguments, we look for valid patterns in the words. Is the remark, 'What happens must happen' deep or shallow, controversial or trivial? It depends on how the word 'must' is working. (p. 103).

One branch of philosophy, philosophy of language, studies language in its own right. It engages closely with linguistics, especially semantics, which concerns linguistic meaning and pragmatics, which concerns the use of language in various conversational contexts. (p. 105).

Philosophy of language and linguistics overlap extensively. Indeed, much of the theoretical framework for contemporary semantics and pragmatics was devised by philosophers of language. They include Donald Davidson, Richard Montague, David Kaplan, Saul Kripke, David Lewis, and Hans Kamp in semantics, and J.L. Austin, Paul Grice, and John Searle in pragmatics. These authors' research has been applied and developed by linguists. Since philosophers have always been interested in language, the dominant means of expressing ideas and communicating information; it is no wonder that many philosophers continue to learn from linguistics. (p. 105).[37]

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[36] Metaethical prescriptivism, as advocated in chapter 5 (vol. 1), does not imply that all values (or ethical assertions) are somehow 'equal,' much less 'equally true.' A 'prescription' is an assertion that purports to express a stipulation (or rule) upon a practice, where its correctness (or incorrectness) is *dependent* upon its acceptance (or non-acceptance) by particular persons. Moral assertions do not function to 'represent reality' as do beliefs, but instead they function to represent choice and guide action. Ethical assertions can be agreed-on, adopted, or accepted by persons having shared values. With prescriptions, *a social consensus is typically sought, and not the discovery of ethical truth*. The possibility that ethically 'we are right,' and that 'they are wrong' is not dismissed but is evaluated as a prescriptive assertion.

[37] Chapter 1 above, is an extended critique of contemporary semantics and pragmatics.

(4) From the 19th century on, with more experimental methods, *psychology* became more like a natural science and split from philosophy. The philosophical study of 'the mind' was the *unsystematic introspection*: looking into one's own consciousness and trying to observe what was going on there, and reasoning about the results. (p. 106).

Introspection has proved an unreliable way of finding about what's going on in one's own mind. Even though one seems to have a view from the best seat, most of the action is happening offstage. The focus of one's attention is far narrower than it seems. Philosophy of mind needs *experimental psychology* to keep it honest and go deeper. (p. 106).

(5) *Theoretical economics* aims to understand the complexities of decision making for agents interacting with each other, pursuing their own agendas while uncertain about their environment, the future, and each other, often competing for scarce resources. (p. 108).

Traditionally, the agents are assumed to meet a least minimal standards of rationality, where rationality is a good approximation to make a helpful starting point. Experimental economics investigates the gap between the predictions of idealized models and observed human behavior. (p. 108).

The most theoretical economics is not unlike philosophy in its levels of *abstraction* and *generality*, though philosophy tends to be more concerned with questioning basic assumptions, economics with using them in a *precise framework* in which to develop ever more sophisticated mathematical models. Philosophy and economics overlap extensively in ideas about what makes a decision *rational*; each can learn from the other. (p. 108, italics added).

Decision theory, epistemic logic, and similar inquiries are philosophical in their aims, mathematical in their methods, and spread across many fields, including economics and computer science, in their applications. Although philosophers bring a distinctive emphasis to such collaborations, as they should, their interest in them is not radically different. The boundary between philosophy and non-philosophy runs across a continuous landscape. (pp. 109-110).

(6) Practitioners of theoretical *computer science* use epistemic logic as the best framework for working on distributive systems, where computers need to 'know' a message is received… Fundamental to computer science is the distinction between *hardware* and *software*. Your laptop, the physical machine that can be dropped on the floor, is hardware. A program that runs on it, the ordered set of instructions, is software… Software is more abstract than hardware… Further developments in computer science and artificial intelligence show how much software can do. (pp. 110-11).

(7) One central strategy in *philosophy of mind* and *biology* is to understand *mental states* by their *function*. What are knowledge, belief, desire, intention, emotion, sensation *for*? … We don't intend most of our own mental states in advance; we just find ourselves in them. For example, when scratched by thorns, you don't *intend* to feel pain; you simply feel it. Nevertheless, it still *makes sense* to ask *what pain is for*, and to *suggest* that *its function* is to *alert us to injury*, so that we can act accordingly. Such hypotheses may help explain the nature of mental states. (p. 111, italics added).

How can we understand this talk of functions without intentions? The best place to look is biology. The function of the heart is to pump blood round the body, whether anyone intends it to do so or not. After all, most animals with hearts have no idea that hearts pump blood. Nor is biological function a matter of what *usually* happens. The function of sperm is to fertilize eggs, but most sperm never fertilize anything. An *evolutionary explanation* is *more promising*. *Very* roughly, there are sperm because past sperm occasionally fertilized eggs. Similarly, perhaps, we feel pain because feeling pain sometimes helped our ancestors protect themselves from injury. At a more general level, mightn't the function of knowledge be to enable one to adapt quickly and flexibly to complex changes in one's environment? (pp. 111-112). [38]

(8) *Metaphysics* is the branch of philosophy that studies the general nature of reality, its structure and content… Both physics and metaphysics study *time*. Some questions about time belong to both physics and metaphysics. Can time pass without change? Can time end? Between any two instants, is there another instant? Those questions concern the nature of time itself, not just our experience or descriptions of time. (p. 112).[39]

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[38] This is a dubious strategy about 'the nature of mental states' which indicates an evolutionary biological explanation. Mental states are best described in ordinary language material terms. In chapter 5 (vol. 1), we characterize a *'belief'* as a functional mental state involving affirming, doubting, or suspending judgment about a propositional assertion. Beliefs function to *represent the world* (and assert something *objective* that is *true* independent of its acceptance by persons). A *'desire'* is a functional brain state that is a primitive psychological, emotional, or hormonal state that motivates many of our actions. Beliefs and desires lead us to action. A *'value'* is a functional physical brain state that measures the worth or importance of certain physical objects, events or actions. Assertions of value are the product of a person's desires, feelings, interests, beliefs, and other values in a social environment. An *'intention to act'* is a determination to behave in a certain way. An *'action'* is defined as behaviors that are under our control or could be, if we gave them enough thought. Not only do *intentions* (as functional brain states) manifest themselves in *actions*; the intention to communicate using language is often called a *speech act*. In context, it is contended here, that persons assert (i.e., express, utter, communicate) thoughts (i.e., well-formed sentences) that are intended to be either descriptive or prescriptive.

[39] Williamson (2007, p. 18): "Much contemporary metaphysics is not primarily concerned with thought or language at all. Its goal is to discover what fundamental kinds of things there are and what properties and relations that they have, not to study the structure of our thought about them… Contemporary metaphysics studies substances and essences, universals and particulars, space and time, possibility and necessity."

> Most (academic) subjects use numbers one way or another, and so rely on mathematics. Philosophy is no exception to the rule. (p. 113).[40]

Chapter 10 is entitled 'Model-Building' and chapter 11 is the 'Conclusion.' In these two chapters, Williamson defends model-building in philosophy, and in particular 'semantics' as a way of achieving philosophical progress, akin to the progress being made with experiments and model-building in the natural sciences. He recites the contemporary dogma that the meanings of words and other expressions must combine with each other, so that sentences can say something true or false. To explain how such combining can work, one needs a clear story about what meanings are, and it requires a vast project that is called *compositional semantics* to which both philosophers of language and linguists have contributed.

> Many natural scientists aim at a distinctive kind of progress which philosophers are starting to recognize as an appropriate aim for them too.
>
> The stereotype of scientific progress is discovering a new law of nature. Such laws are meant to be universal generalizations about the natural world, holding for all times and places, by some sort of necessity: nice, if you can find one. However, most natural and social science studies involve messy complex systems—cells, animals, planets, galaxies, families, organizations, societies—which are hard to characterize by universal laws. (p. 114).
>
> To manage the problem, scientists have revised their objective. Instead of seeking universal laws about complex systems, they build simplified models of them… Typically the models are abstract, defined by mathematical equations which describe how a hypothetical system changes over time. The hypothetical system is vastly simpler than the real-life systems of interest, but still has a few of their key features. The strategy is to analyze the behavior of the hypothetical system mathematically, in the hope that it will simulate some puzzling aspects of real-life systems' behavior, and thereby cast light on them. (p. 115).
>
> Much progress in natural science is now of this kind. Once we have a successful model, we can try building a little more real-life complexity back into it, step by step, but the models will always be vastly simpler than real-life itself—otherwise they would be too complex to analyze… Humans are a classic example of messy complex systems. In one way or another, much—though not all—of philosophy is about humans. Thus, moral and political philosophy concerns a good human life and a good human society. (p. 116).

[40] This is Williamson's controversial worldview which he thinks is revolutionary and worthy of attention.

Many philosophers aim at exceptionless universal laws, even about messy complex systems—humans—for whom natural scientists have mainly abandoned that ambition. In that respect, philosophers have done their field a disservice by inadvertently setting up for failure, making it search for something that isn't there. (p. 117).

People who contrast *progress* in natural science with *deadlock* in philosophy, often do so on the basis of a false image of each side. Failing to appreciate how much scientific progress consists in building better models, they fail to ask how much philosophical *progress* consists in *building better models* too. (p. 117, italics added).[41]

In philosophy of language, model-building goes back to at least Carnap. To understand what he was up to, we first need some background in semantics, the theory of meaning. (p. 119).

A striking feature of human languages is that once you master a few words and grammatical constructions, you can use them to build a potential infinity of meaningful sentences, for instance "Picasso slept," "Picasso's aunt slept," "Picasso's aunt's aunt slept," and so on. You can understand them even if you have never heard or read them before. (p. 119).

The central project of modern semantics is to explain how the meaning of a complex expression (e.g., the sentences involving Picasso above) is determined by the meaning of the simpler components of which it is composed (e.g., "Picasso," "aunt," "slept," and the possessive "s"), and how they are put together—"Cats scratch dogs" and "Dogs scratch cats" have different meanings but the same components. (p. 119).

The meanings of words and other expressions must be able to combine with each other, so that sentences can say something true or false. To explain how such combining can work, one needs a clear story about what meanings are. The whole vast project is called *compositional semantics*, to which both philosophers of language and linguists have contributed. (p. 119).

Before Carnap, logicians made considerable progress in compositional semantics by treating the meaning of an expression as its *extension*, its actual application out there in the world… The approach turned out to work very nicely for sentences built up using logical words such as 'and,' 'or,' 'not,' 'every,' and 'some,' which already enable one to build up more and more complex sentences. (pp. 119-120).

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[41] The issue of 'philosophical progress' is widely debated. See Blackford & Broderick (2017), Dietrich (2011), Chalmers (2015), Stoljar (2017), Kitcher (2023, 148-151), Maslen (2024), Sarihan (2024) Garancini (2025), Smith (2025), Bengson et. al (2026). Dellsen et. al. (2024) provides both discussion and references. Philosophical progress is oftentimes compared to the progress found in the physical sciences.

However, extensional semantics ran into a roadblock with *modal* words such as 'can' and 'must,' or 'possibly' and 'necessarily,'… extensional semantics makes inconsistent predictions about the result when the meaning of 'possibly' combines with falsity and when the meaning of 'necessarily' combines with truth. (p. 120).

Carnap realized that extensions carry too little information for the *meanings* of modal words like 'possibly' and 'necessarily' *to work on*. The underlying problem is that extensional semantics only considers extensions in the actual world, whereas modal words are sensitive to extensions in non-actual but *possible* worlds too. (p. 121, italics added). To solve the problem of developing a compositional mathematics for modal words like 'possibly,' he equated meanings with *intensions* rather than extensions. The intension of a word or sentence is the entire spectrum of its extensions across all possible worlds, actual and non-actual. Carnap showed how the meaning of 'possibly' combines with the intension of any sentence 'A' to give the intension (and extension) of 'Possibly A,' and likewise for 'necessarily.' In effect, he interpreted 'possibility' as 'in some possible world,' and necessarily as 'in every possible world.' Thus, instead of an extensional semantics, Carnap gave us an *intensional semantics* for modal words. (p. 121).

Carnap gave a complete intensional semantics for an artificial formal language: every formula, however complex, has an intension, determined step-by-step form the intensions of the simplest constituents of which it composed. It is a much more sophisticated *model of meaning* than extensional semantics. (p. 121, italics added).

Through the work of Richard Montague, Saul Kripke, David Lewis, and many others, Carnap's intensional semantics has massively influenced both philosophy of language and semantics (as a branch of linguistics). Although the models have become still more elaborate, they preserve the crucial move from extensions to intensions. (p. 121).

Carnap constructed a simple model language to demonstrate a way for words like 'possibly' and 'necessarily' to work. He thereby cast light on natural languages too. As we learn ever more of the extraordinary complexity underlying even the most ordinary conversations, philosophers of language and linguists will have to increasing rely on a model-building methodology. (p. 123).

Models are fun. You can play with them. That's not just an incidental side benefit; it's what they are for, both in natural science and philosophy. We learn by manipulation, playing about: if you can't manipulate the real thing, a good second-best is often to manipulate a model of it. You can fiddle with this or that component, changing it slightly to see what difference it makes, what varies with what. That way you become to understand more deeply how the model works. (p. 123).

If the model is any good, you thereby come to understand better how the real thing works too. For instance, you can't arbitrarily change how English works, so see what difference it makes, but you can arbitrarily change the rules of an artificial language, and calculate the consequences. (p. 123).

To be easily manipulated, a model should be defined in mathematically or logically precise and tractable terms. If the definition is vague, or too complicated, its consequences are unclear: one has to fall back on one's prior philosophical instincts and guess how it behaves, instead of using a model to test those instincts. By contrast, a well-defined model allows one to calculate rigorously how it and variations on it behave, bypassing those earlier instincts, and so to learn something unexpected. With a model-building methodology, rigor and playfulness go naturally together. (p. 124).[42]

The rigor of model-building is not the rigor most philosophers are used to. Traditional philosophical rigor requires dismissing a claim once a counterexample has been given. In that sense, most models are born refuted, because they involve false simplifying assumptions. For instance, models in epistemic logic typically idealize away from the logical imperfections of normal humans. Some philosophers dismiss those models accordingly. (p. 124). The potential of the model-building methodology for philosophy is only beginning to be explored. Its scope and limits should be clearer fifty years from now. (p. 126). Philosophy is a *science* in its own right, interconnected with the others and as autonomous as they are. *It is also* under *constant pressure* to be *something else*:

(1) Lifestyle advice or political polemic
(2) Moralizing sermon or grammar lesson
(3) Godless religion or unreadable literature
(4) Pop physics or pop biology
(5) Pop psychology or pop neuroscience
(6) Calculation or opinion poll

These pressures are hard to understand, because they express deep-rooted though conflicting expectations of philosophy and play on philosophers' own insecurities about their field. Most of all they depend on incomprehension—amongst both philosophers and non-philosophers—of how philosophy could be what it is. I hope that this book will do something to reduce the incomprehension. (p. 127). [43]

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[42] Williamson's enthusiasm and fascination with formal models and artificial languages (pp. 123-124) puts him in company with a large number of other philosophers who are obsessively interested in niche technical specialization. Williamson simply thinks of philosophy as an exercise in counterfactual imagination. Many contemporary journal articles are devoted to parochial discussions.

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[43] Williamson's audiences have certainly pressured him with some odd-sounding demands. My personal demand is that analytic philosophy should be able to explain what knowledge is, as well as the nature of metaethics, mathematics, aesthetics, definition, and concepts, as well as that of a descriptive-prescriptive distinction. At this point, neither Williamson nor any other philosopher has provided a satisfactory answer to any of these concerns.

Conclusion

With these final page excerpts, we have completed a short exposition and criticism of Williamson's *Philosophical Method*: *A Very Short Introduction*.[44] His proposed methodology with its emphasis towards *mathematical precision* within a 'realist metaphysics' is a misguided way of approaching philosophy. Philosophy shouldn't be conceived of as a never-ending debate that makes 'progress' among specialists. Philosophers, like Williamson, are much too accepting of creating technical stipulative definitions (which are not truth-apt) and then proceeding with dialogue using those stipulations.

Let's compare mathematics with philosophy. Most people have a working understanding of basic mathematics, and it allows us to get the right answers to practical questions (e.g., using addition, subtraction) learned from a formal education. With introductory analytic philosophy, it too should be taught like elementary mathematics and economics courses, showing the basic issues of philosophical contention without an excess of outdated historical thinking and vocabulary. Instead of being similar to theoretical mathematics that seeks highly specialized progress, philosophy should aspire to embrace mundane conceptual analyses that get the 'right' and 'informative' answers that involve and instruct laypersons.

Rather than being conceived of as an 'armchair' science, philosophy is better conceived as an 'instructional' science, which uses case studies to evaluate a speaker's intentions, and provide some definite answers (or clarification) to everyday philosophical issues that are of interest to critical-thinking ordinary individuals. In chapter 10 (vol. 1), twenty-eight (28) questions about epistemology, ethics, language, mathematics, aesthetics, philosophical methodology, and metaphysics were posed of which are of intellectual interest to many persons. Williamson's revolutionary attempt to turn analytic philosophy into a dialogue among metaphysical-mathematical specialists is not acceptable.

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[44] *Philosophical Method*: *A Very Short Introduction* (2000*)* was originally published as *Doing Philosophy* (2018) by Oxford University Press.