

Second Philosophy

A naturalistic method

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Introduction

These days, as more and more philosophers count themselves as naturalists, the term has come to mark little more than a vague science–friendliness. To qualify as unnaturalistic, a contemporary thinker has to insist, for example, that epistemology is an a priori discipline with nothing to learn from empirical psychology or that metaphysical intuitions show quantum mechanics to be false. There are those who take such positions, of course, but to lump everybody else under one rubric is clearly too crude a diagnostic. My goal in this book is to delineate and to practice a particularly austere form of naturalism. One minor difficulty is that the term ‘naturalism’ has acquired so many associations over the years that using it tends to invite indignant responses of the form, ‘but that can’t be naturalism! Naturalism has to be like this!’ As my project is to spell out an approach that differs in subtle but fundamental ways from other ‘naturalisms’, it seems best to coin a new term, on the assumption that I will then be permitted to stipulate what I intend it to mean. Thus, ‘Second Philosophy’.

A deeper difficulty springs from the lesson won through decades of study in the philosophy of science: there is no hard and fast specification of what ‘science’ must be, no determinate criterion of the form ‘ x is science iff...’. It follows that there can be no straightforward definition of Second Philosophy along the lines ‘trust only the methods of science’. Thus Second Philosophy, as I understand it, isn’t a set of beliefs, a set of propositions to be affirmed; it has no theory. Since its contours can’t be drawn by outright definition, I resort to the device of introducing a character, a particular sort of idealized inquirer called the Second Philosopher, and proceed by describing her thoughts and practices in a range of contexts; Second Philosophy is then to be understood as the product of her inquiries.

This Second Philosopher is equally at home in anthropology, astronomy, biology, botany, chemistry, linguistics, neuroscience, physics, physiology, psychology, sociology, ... and even mathematics, once she realizes how central it is to her ongoing effort to understand the world. Her interest in other subjects, at least as far as we see her here, is limited to her pursuit of their anthropology, psychology, sociology, and so on. She uses what we typically describe with our rough and ready term 'scientific methods', but again without any definitive way of characterizing exactly what that term entails. She simply begins from commonsense perception and proceeds from there to systematic observation, active experimentation, theory formation and testing, working all the while to assess, correct, and improve her methods as she goes.

Though the Second Philosopher's approach is what we would typically term 'scientific', I contend that she is fully capable of appreciating and addressing a wide range of questions we would just as typically regard as 'philosophical'. The central examples here are fundamental questions in the philosophies of logic and mathematics: what is the ground of logical and mathematical truth? how do we come to know such truths? what role do they play in our investigation of the world? These issues take center stage in Parts III and IV, but before I can describe the Second Philosopher's take on them, I need to explain who she is and how she operates. This is the main goal of Parts I and II. The Second Philosopher is introduced in I.1 in contrast with Descartes's First Philosopher and the rough outlines of her character emerge gradually, by a sustained exercise in compare and contrast, through the step-by-step historical review of Part I. Toward the end of Part I, she begins to advance positions of her own (in I.6 and I.7).

Part II employs a different technique to illuminate Second Philosophy. It takes up a well-known contemporary debate over the nature of truth and reference and of word-world relations more generally and asks to what extent it can be understood as a piece of naturally occurring Second Philosophy; the process of reconfiguring the question in the Second Philosopher's terms should provide further insight into her motivations and methods. In the end, she stakes out a tentative position of her own on the topics at issue (and her second-philosophical understanding of the available options eventually helps clarify the central ontological discussion of IV.4). The stage is then set for the sustained pursuit of Second Philosophy in Parts III and IV, primarily in the philosophy of logic and mathematics.

Though ‘Second Philosophy’ is never explicitly defined in all this, I hope that Parts I and II provide enough guidance for at least some sympathetic readers to get the hang of how to carry on. I should note that the delineation of Second Philosophy itself and the pursuit of particular questions by the Second Philosopher are independent: for example, one might adopt the account of logical truth in Part III or of mathematical ontology in Part IV without buying into the full austerity of the second-philosophical method in all things; conversely one might sign on as a Second Philosopher while thinking I’ve gone astray in my pursuit of the particulars. Finally of course none of this amounts to an argument that we should all strive to conduct ourselves as Second Philosophers. My hope is that the appeal of the approach will be obvious to the susceptible.

Those content to allow the book’s line of thought to unfold in its own time are encouraged to skip from here directly to Part I, perhaps returning to the rest of this introduction for summaries as desired. For those who prefer to read the reviews before seeing the movie, even at the risk of spoilers, let me sketch the upcoming terrain in more detail.

In I.1 we see our first example of the practical consequences of the Second Philosopher’s lack of a criterion for demarcating science from non-science: when Descartes proposes that she adopt his Method of Doubt, she doesn’t reject it as ‘unscientific’; impressed by the promised pay-off—a firmer foundation for her beliefs—she’s quite willing to give his proposal a try; she eventually discards it only as it proves ineffective. When the contemporary skeptic issues his challenge in I.2—claiming that her commonsense methods, even as corrected by her more developed and self-conscious inquiries, lead to radical skepticism—the Second Philosopher is troubled; only the hard-won conviction that there is some sleight of hand in his arguments, that they don’t actually proceed from common sense, sets her mind at ease. Once she understands the peculiarly philosophical way he wishes to pose the question of knowledge—an understanding apparently closed to Moore—she can sympathize with his desire that all our methods be justified in a way that doesn’t presuppose any of them, but she doesn’t regard the impossibility of gratifying that desire as undermining her reasonable beliefs about the world. I.3 raises the possibility that the naturalistic Hume, originator of the empirical Science of Man, may have uncovered a more viable route from common sense to radical skepticism. Here we see our first example of another recurring phenomenon: a noble attempt at naturalism that loses its way.

The discussion of Kant in I.4 introduces another perennial motif: the two-level philosophical theory. In his effort to account for a priori knowledge of the world, Kant undertakes a transcendental inquiry wholly distinct from ordinary science (in his terms, empirical inquiry). (Here it's Kant, not the Second Philosopher, who draws a science/non-science distinction. This is typical of two-level views.) What makes the view two-leveled in the intended sense is that Kant's empirical inquiry is methodologically independent of his transcendental considerations, that is, ordinary science is entirely in order for purposes of investigating the empirical world, it's just that Kant also has other purposes. Notice that in these terms, the Descartes of I.1 isn't proposing a two-level project: he doesn't regard science as methodologically independent, as entirely in order for its purposes; he's out to correct it, to improve its foundations. Still, as in her reaction to Descartes, the Second Philosopher doesn't reject transcendental inquiry as extra-scientific; open-minded as always, she asks Kant, as she did Descartes, why she should undertake his distinctive study, what purposes it's intended to serve, and simply comes away unpersuaded. (I.4 also lays the groundwork for the discussion of Kant's view of logic in III.2.) I.5 on Carnap's project of rational reconstruction presents another two-level position and an analogous second-philosophical response.

Consideration of Carnap leads inevitably to the celebrated Quine, father of contemporary naturalism and direct inspiration for Second Philosophy. Alas, the task of I.6 is to point out how the Second Philosopher differs from the Quinean naturalist in matters great and small, and this initial separation broadens in the second-philosophical account of logic in Part III and of mathematical ontology in Part IV. For now perhaps it's enough to note that the Second Philosopher is born native to her scientific (our term) world-view, she isn't driven to it, as Quine's naturalist seems to be, by despair over the failed Cartesian project of grounding science. More substantive disagreements concern radical skepticism and the nature of naturalized epistemology, and holism and the confirmation of theories (as illustrated by the case of atomic theory which returns at intervals throughout the book).

Part I concludes with a look at Putnam's Quine-inspired naturalism of the 1970s and especially his subsequent anti-naturalism of the 1980s. This later Putnam develops yet another two-level position, with predictable reactions from the Second Philosopher, but his critique also helps clarify her position on the status of inquirers whose evidential standards differ starkly from her

own. Of course the Second Philosopher, using her methods, can justify her standards and expose the shortcomings of the astrologer's, but presumably the astrologer, using his methods, can likewise justify his standards and find fault with hers. A certain breed of naturalist might conclude that the astrologer's position is as good as her own—this is 'relativism'—but the Second Philosopher is unimpressed by the astrologer's efforts; she has every reason to trust her well-honed means of investigation and they show him to be misguided—this is 'imperialism'. In addition, Putnam's critique spotlights the theory of truth and the role it might play in an empirical explanation of how human language use functions in our dealings with each other and with the world—a question that helps shape the discussion of Part II.

In sum, then, Part I aims to zero in on the nature of second-philosophical inquiry by tracing the Second Philosopher's reaction to various skeptical challenges and two-level positions, and by comparing and contrasting her with such naturalistic thinkers as Hume and Quine. Part II takes a different approach. Given the current tendency toward 'naturalism' in its various forms, given that Second Philosophy isn't a theory but simply a way of conducting philosophical inquiry, we might expect to find Second Philosophy taking place somewhere, in practice if not in name. After a brief opening discussion (in II.1) to allay the worry that there's nothing left for the Second Philosopher to do, Part II explores a particularly promising case: the contemporary debate over the nature of word-world connections that arose after Hartry Field's 1972 criticism of Tarski's theory of truth. II.2 traces the discussion from Tarski to Field to Stephen Leeds; II.3 focuses on Field's valence analogy to show how the Second Philosopher is motivated by more concrete explanatory goals than the others. With the debate reconfigured second-philosophically, II.4 sketches a form of disquotation-alism that descends from Field and Leeds, and II.5 clarifies its structure by contrasting it with the minimalism of Crispin Wright and Paul Horwich. Finally, in II.6, we meet in Mark Wilson a true Second Philosopher and help ourselves to a few of his many insights to deepen the account begun in II.4.

In Part II, then, I hope to have illustrated how an apparently naturalistic philosophical discussion is subtly reconfigured when regarded from the Second Philosopher's point of view, and to have demonstrated that there is at least one natural-born Second Philosopher at work today. Along the way, a tentative second-philosophical take on truth, reference, and word-world relations has emerged, but what carries forward to the

ontological discussion of IV.4 is not this particular view, but the accompanying second-philosophical understanding of both correspondence and disquotational theories. (There I argue that the ontological distinctions at issue are independent of one's stand on truth.)

Parts I and II are designed primarily to illustrate the nature of Second Philosophy; assuming they've done their job, Parts III and IV attempt to practice it. My aim is to provide a philosophical backdrop for the methodological views of *Naturalism in Mathematics*, but this effort requires a prior investigation of the nature of logical truth, the subject of Part III. III.1 gives a brief survey of familiar naturalistic options. Building on the sketch of Kant's views in I.4, III.2 outlines a Kantian account of logic; III.3 converts it into a possibility open to the Second Philosopher. III.4 and III.5 examine the viability of the claims this position makes about the structure of the physical world and of human cognition, producing a modified account with considerable claim to empirical support. The status of the rudimentary logic it validates is examined in III.6: contingent, perhaps a priori in some sense, empirical though difficult to revise, not obviously analytic in any useful way. III.7 catalogs the restrictions and idealizations along the path from this rudimentary logic to full classical logic, pausing to note the various deviant logics that present themselves as alternatives. Finally, the empirical contingencies on which this view rests are reviewed in III.8.

At last the stage is set for a second-philosophical look at mathematics. The opening section of Part IV returns to the themes of Part I—skepticism and two-level positions—but this time in the context of current debates in the philosophy of science; this serves as a transition to the discussion of applied mathematics in IV.2. There I draw the consequences of the Second Philosopher's rejection of holism (in I.6) for the Quine/Putnam indispensability arguments for mathematics realism, explore the extent to which mathematical structures are physically realized, and attempt a mild debunking of the purported 'miracle of applied mathematics'. IV.3 returns to the central topic of *Naturalism*, the methodology of pure mathematics: having discerned that mathematics is an invaluable aid to her investigation of the world, the Second Philosopher undertakes to pursue it herself; her methodological decisions are then based on an analysis of the goals of the practice and of the effectiveness of available means for reaching them. This brings us finally to the classic ontological and epistemological questions about mathematics: what is the nature of mathematical truth?

and how can we come to know it? In IV.4, I present three very general styles of answer to these questions—Robust Realism, Thin Realism, and Arealism—and argue that despite appearances Thin Realism is closer to Arealism than to Robust Realism. For the Second Philosopher, Robust Realism is problematic (including, alas, the position of my [1990]). I suggest that Thin Realism is independent of the debate over truth (a pay-off from II.4), that Arealism can accommodate the application of mathematics, and indeed that Thin Realism and Arealism are superficial variants of the same underlying position. Part IV concludes with a look at the broader prospects for metaphysics in the second-philosophical spirit.

One last comment by way of orientation: the discussions of IV.3, IV.4, and IV.5 may, indeed should, strike the reader as especially open-ended. Surely more can be said about the search for new set theoretic axioms and possible solutions to the Continuum Problem, about the workings of Thin Realism and Arealism, about the case for the atomic hypothesis, and about Second Metaphysics more generally! Let me just say, that is my hope.

I.1

Descartes's first philosophy

To explain what 'Second Philosophy' is supposed to be, I should begin with René Descartes and his *Meditations on First Philosophy* (1641a). The key to this work is Descartes's dramatic Method of Doubt.¹ It begins modestly enough, noting that our senses sometimes deceive us about objects that are very small or very distant, but quickly moves on to perceptual reports that seem beyond question, like my current belief that 'this is a hand' (as I hold up my hand and look at it). Still, the meditator wonders, might I not be mad, or asleep?

Yet at the moment my eyes are certainly wide awake ... as I stretch out and feel my hand I do so deliberately, and I know what I am doing. All this would not happen with such distinctness to one asleep. Indeed! As if I did not remember other occasions when I have been tricked by exactly similar thoughts while asleep! As I think about this more carefully, I see plainly that there are never any sure signs by means of which being awake can be distinguished from being asleep. The result is that I begin to feel dazed ... Perhaps ... I do not even have ... hands ... at all. (Descartes [1641a], p. 13)

In his dizziness, the meditator anxiously grasps for a fixed point:

... whether I am awake or asleep, two and three added together are five, and a square has no more than four sides. It seems impossible that such transparent truths should incur any suspicion of being false. (Descartes [1641a], p. 14)

But the midnight fears cannot be stopped. What if God is a deceiver, or worse, what if there is no God, and I am as I am by mere chance? Mightn't I then be wrong in absolutely all my beliefs?

¹ The following account of Descartes's goals and strategies comes from the elegant and enlightening Broughton [2002].

I have no answer to these arguments, but am finally compelled to admit that there is not one of my former beliefs about which a doubt may not properly be raised. (Descartes [1641a], pp. 14–15)

And he concludes that

in future I must withhold my assent from these former beliefs just as carefully as I would from obvious falsehoods, if I want to discover any certainty. ... I will suppose therefore that ... some malicious demon of the utmost power and cunning has employed all his energies in order to deceive me. I shall think that the sky, the air, the earth, colours, shapes, sounds and all external things are merely the delusions of dreams which he has devised to ensnare my judgement. I shall consider myself as not having hands or eyes, or flesh, or blood or senses, but as falsely believing that I have all these things ... this is an arduous undertaking ... (Descartes [1641a], p. 15)

Arduous, indeed, for me to deny that I have hands, that I'm now typing these words, or for you to deny that you're reading them, following along as I rehearse the familiar Cartesian catechism. We might fairly ask, what is the point of this difficult exercise?

The point is not that I am somehow unjustified in believing these things. Despite the doubts that have just been raised, Descartes and his meditator continue to regard my ordinary beliefs as

highly probable ... opinions, which, despite the fact that they are in a sense doubtful ... it is still much more reasonable to believe than to deny. (Descartes [1641a], p. 15)

The very reasonableness of these beliefs is what makes it so difficult to suspend them. For this purpose, some exaggeration² is needed:

I think it will be a good plan to turn my will in completely the opposite direction and deceive myself, by pretending for a time that these former opinions are utterly false and imaginary. (Descartes [1641a], p. 15)

So, the Evil Demon Hypothesis is designed to help to unseat my otherwise reasonable beliefs, though the doubt raised thereby is 'a very slight, and, so to speak, metaphysical one' (Descartes [1641a], p. 25).

² In the 'Fourth Replies', Descartes refers to 'the exaggerated doubts which I put forward in the First Meditation', and in the 'Seventh Replies' he reminds us that 'I was dealing merely with the kind of extreme doubt which, as I frequently stressed, is metaphysical and exaggerated and in no way to be transferred to practical life' (Descartes [1642], pp. 159, 308). See Broughton [2002], p. 48.

But this just pushes the question one step back. We now wonder, why should I wish to unseat my otherwise reasonable beliefs? The meditator is explicit on this point. He is concerned about the status of natural science, and he holds that

It [is] necessary, once in the course of my life, to demolish everything completely and start again right from the foundations if I [want] to establish anything at all in the sciences that [is] stable and likely to last. (Descartes [1641a], p. 12)

The Method of Doubt, the suspension of belief in anything in any way doubtful, is just that, a method—designed to lead us to a firm foundation for the sciences:

I must withhold my assent from these former beliefs just as carefully as I would from obvious falsehoods, *if I want to discover any certainty in the sciences*. (Descartes [1641a], p. 15, emphasis mine, underlined phrase from the 1647 French edition)

The hope is that once we set aside all our ordinary beliefs, reasonable or not, some absolutely indubitable foundational beliefs will then emerge, on the basis of which science and common sense can then be given a firm foundation. The Method of Doubt is the one-time expedient that enables us to carry out this difficult task.

Janet Broughton, the scholar whose account of Descartes I've been following here, describes the mediator's situation like this:

Of course, there is nothing about the strategy of this [Method of Doubt] that guarantees it will do what we want it to do. Perhaps we will find that all claims can be impugned by a reason for doubt. Perhaps we will find some that cannot, but then discover that they are very general or have few interesting implications. (Broughton [2002], p. 53)

Of course, this is not the fate of Descartes's meditator. In the second Meditation, he quickly establishes that he must exist—as he must exist even for the Evil Demon to be deceiving him!—and that he is a thinking thing. From there, he moves to the existence of a benevolent God, the dependability of 'clear and distinct ideas', and so on, returning at last to the reasonable beliefs of science and common sense.³

Alas, a sad philosophical history demonstrates that the path leading from the Evil Demon Hypothesis to hyperbolic doubt has always been

³ Though not quite in their original form, as we'll see in a moment.

considerably more compelling than the route taken by the meditator back to belief in his hands. Still, the Cartesian hope of securing an unassailable foundation for science has persisted, down the centuries. So, for example, the good Bishop Berkeley (in his [1710]) suggested that our sense impressions are incontrovertible evidence for the existence of physical objects, because such objects simply *are* collections of impressions, but the price he paid—subjective idealism⁴—was one nearly all but Berkeley have found entirely too high. More recently, Bertrand Russell (in his [1914]) and the young Rudolf Carnap (in his [1928]⁵) applied the full scope and power of modern mathematical logic to the project of construing physical objects as more robust logical constructions from sensory experiences, but both efforts ultimately failed, even in the opinions of their authors.⁶ There is surely much in this historical record—both in the detail of each attempt and in the simple fact of this string of failures—to lead us to despair of founding science and common sense on some more trustworthy emanations of First Philosophy. Thus, Willard van Orman Quine speaks of a ‘forlorn hope’ and a ‘lost cause’ (Quine [1969a], p. 74).

But perhaps the situation is not as tragic as it is sometimes drawn. Let’s consider, for contrast, another inquirer, one entirely different from Descartes’s meditator. This inquirer is born native to our contemporary scientific world-view; she practices the modern descendants of the methods found wanting by Descartes. She begins from common sense, she trusts her perceptions, subject to correction, but her curiosity pushes her beyond these to careful and precise observation, to deliberate experimentation, to the formulation and stringent testing of hypotheses, to devising ever more comprehensive theories, all in the interest of learning more about what the world is like. She rejects authority and tradition as evidence, she works to minimize prejudices and subjective factors that might skew her investigations. Along the way, observing the forms of her most successful

⁴ That is, the view that what I experience as the external world is really just the orderly flow of my subjective impressions (‘ideas’). (I come back to Berkeley briefly in I.4.)

⁵ On the ‘standard reading’ (Richardson [1998], pp. 10–13). See I.5 for more on Carnap.

⁶ e.g., see Carnap [1963], p. 57: ‘We assumed there was a certain rock bottom of knowledge, the knowledge of the immediately given, which was indubitable. Every other kind of knowledge was supposed to be firmly supported on this basis... Looking back at this view from our present position, I must admit that it was difficult to reconcile with certain other conceptions which we had at that time, especially in the methodology of science. Therefore the development and clarification of our methodological views led inevitably to an abandonment of the rigid frame in our theory of knowledge.’ Baldwin [2003] traces the development of Russell’s thinking.

theories, she develops higher-level principles—like the maxim that physical phenomena should be explained in terms of forces acting on a line between two bodies, depending only on the distance between them⁷—and she puts these higher-level principles to the test, modifying them as need be, in light of further experience.⁸ Likewise, she is always on the alert to improve her methods of observation, of experimental design, of theory testing, and so on, undertaking to improve her methods as she goes.

We philosophers, speaking of her in the third person, will say that such an inquirer operates ‘within science’, that she uses ‘the methods of science’, but she herself has no need of such talk. When asked why she believes that water is H₂O, she cites information about its behavior under electrolysis and so on;⁹ she doesn’t say, ‘because science says so and I believe what science says’. Likewise, when confronted with the claims of astrology and such like, she doesn’t say, ‘these studies are unscientific’; she reacts in the spirit of this passage from Richard Feynman on astrology:

Maybe it’s... true, yes. On the other hand, there’s an awful lot of information that indicates that it isn’t true. Because we have a lot of knowledge about how things work, what people are, what the world is, what those stars are, what the planets are that you are looking at, what makes them go around more or less... And furthermore, if you look very carefully at the different astrologers they don’t agree with each other, so what are you going to do? Disbelieve it. There’s no evidence at all for it. ... unless someone can demonstrate it to you with a real experiment, with a real test ... then there’s no point in listening to them. (Feynman [1998], pp. 92–93)

My point is that our inquirer needn’t employ any general analysis of what counts as ‘scientific’ to say this sort of thing, though we use the term ‘science’ in its rough and ready sense when we set out to describe her behavior.

Movies without much plot are sometimes called Character Studies; the conventions of the genre seem to dictate that it center on an otherwise inconspicuous person who undergoes some familiar life passage with terribly subtle, if any, reaction or results. If thesis is to philosophy as plot is to movie,

⁷ This is the methodological principle Mechanism. See II.3.

⁸ Mechanism was finally rejected with the rise of field theories. See II.3 for discussion and references.

⁹ Wilson ([2006], pp. 427–429) analyzes the complexities of our usage of the terms ‘water’ and ‘H₂O’ in terms of his façade structures, described in II.6. The Second Philosopher’s claim here should be understood as belonging loosely to analytic chemistry (or the analytical chemistry ‘patch’ of the façade), as opposed to, say, discussions of official standards for drinking water.

then perhaps what I'm up to here should be classified as a Character Study, with this inquirer as its Character, a mundane and unremarkable figure, as the genre requires. Following convention, I hope to tease out the hidden elements of her temperament by tracing her reactions to a familiar philosophical test: the confrontation with skepticism. How will she react to the challenge Descartes puts to his meditator? Does she know that she has hands?

In response to this question, our inquirer will tell a story about the workings of perception—about the structure of ordinary physical objects like hands, about the nature of light and reflection, about the reactions of retinas and neurons, the actions of human cognitive mechanisms, and so on. This story will include cautionary chapters, about how this normally reliable train of perceptual events can be undermined—by unusual lighting, by unusual substances in the bloodstream of the perceiver, and so on—and she will check as best she can to see that such distorting forces are not present in her current situation. By such careful steps she might well conclude that it is reasonable for her to believe, on the basis of her perception, that there is a hand before her. Given that it is reasonable for her to believe this, she does believe it, and so she concludes that she knows there is a hand before her, that she has hands.

But mightn't she be sleeping? Mightn't an Evil Demon be deceiving her in all this? Our inquirer is no more impressed by these empty possibilities than Descartes's meditator; with him, she continues to think it is far more reasonable than not for her to believe that she has hands, that she isn't dreaming, that there is no Evil Demon. The question is whether or not she will see the wisdom, as he does, in employing the Method of Doubt. Will she see the need 'once in [her] life, to demolish everything completely and start again' (Descartes [1641a], p. 12)?

This question immediately raises another, which we haven't so far considered, namely, what is it exactly that Descartes's meditator sees as forcing him to this drastic course of action? The only answer in the *Meditations* comes in the very first sentence:

Some years ago I was struck by the large number of falsehoods that I had accepted as true in my childhood, and by the highly doubtful nature of the whole edifice that I had subsequently based on them. (Descartes [1641a], p. 12)

Our inquirer will agree that many of her childhood beliefs were false, and that the judgments of common sense often need tempering or adjustment in light of further investigation, but she will hardly see these as reasons to

suspend her use of the very methods that allowed her to uncover those errors and make the required corrections! It's hard to see why the meditator feels differently.

The reason traces to Descartes's aim of replacing the reigning Scholastic Aristotelianism with his own Mechanistic Corpuscularism. As he was composing the *Replies* that were to be published with the first edition of the *Meditations*, he wrote to Mersenne:

I may tell you, between ourselves, that these six Meditations contain all the foundations of my physics. But please do not tell people, for that might make it harder for supporters of Aristotle to approve them. I hope that readers will gradually get used to my principles, and recognize their truth, before they notice that they destroy the principles of Aristotle. (Descartes [1641b], p. 173)

To get a sense of the conflict here, notice that on the view Descartes comes to by the end of the *Meditations*, all properties of physical objects are to be explained in terms of the geometry and motions of the particles that make them up; the features we experience—like color, weight, warmth, and so on—exist, strictly speaking, only in us. For the Aristotelians, in contrast, physical objects themselves have a wide variety of qualities, which brings Aristotelianism into close alliance with common sense.

This background is beautifully laid out by Daniel Garber, who then takes the final step:

Descartes thought [that] the common sense worldview and the Scholastic metaphysics it gives rise to is a consequence of one of the universal afflictions of humankind: childhood. (Garber [1986], p. 88)

On Descartes's understanding of cognitive development, children are 'so immersed in the body' (Descartes [1644], p. 208) that they fail to distinguish mind and reason from matter and sensation, and

The domination of the mind by the corporeal faculties ... leads us to the unfounded prejudice that those faculties represent to us the way the world really is. (Garber [1986], p. 89)

So these are the 'childhood falsehoods' and Aristotelianism is the resulting 'highly doubtful edifice' that the meditator despairs of in the opening sentence of the *Meditations*.¹⁰ As these errors of childhood are extremely difficult to

¹⁰ As Broughton points out ([2002], p. 31), the meditator comes 'uncomfortably equipped with Cartesian theories' at the outset of the *Meditations*, though those theories aren't revealed to him until the end.

uproot in adulthood, only the Method of Doubt will deliver a slate clean enough to allow Descartes's alternative to emerge: the resulting principles of First Philosophy will be completely indubitable, and as such, strong enough to undermine the authority of common sense.¹¹

Now our contemporary inquirer, unlike the meditator, has no such Cartesian reasons to believe that her most reasonable beliefs are problematic,¹² so she lacks his motivation for adopting the Method of Doubt. Still, if application of the Method does lead to First Philosophical principles that are absolutely certain, principles that may conflict with some of our inquirer's overwhelmingly reasonable, but ever-so-slightly dubitable beliefs, then she should, by her own lights, follow this course. Even if all her old beliefs re-emerge at the end, some of them might inherit the certainty of First Philosophy.¹³ Though she quite reasonably regards such outcomes as highly unlikely, she might well think it proper procedure to read past the first Meditation, to see what comes next. The unconvincing arguments that follow will quickly confirm her expectation that there is no gain to be found in this direction.¹⁴

So our inquirer will continue her investigation of the world in her familiar ways, despite her encounter with Descartes and his meditator. She will ask traditionally philosophical questions about what there is and how we know it, just as they do, but she will take perception as a mostly reliable guide to the existence of medium-sized physical objects, she will consult her astronomical observations and theories to weigh the existence of black holes, and she will treat questions of knowledge as involving the relations between the world—as she understands it in her physics, chemistry, optics, geology, and so on—and human beings—as she understands them in her physiology, cognitive science, neuroscience, linguistics, and so on. While

¹¹ The need to undercut our most tenacious commonsense beliefs explains Descartes's interest in certainty: if p and q conflict, and there is some slight reason to doubt p , but q is certain, we take q to undermine p . See Broughton [2002], p. 51.

¹² She doesn't see the errors of childhood as based on a serious inability to distinguish mind from body, so she thinks her ordinary methods of inquiry can correct them.

¹³ Not all of the new science will be indubitable, of course. See Garber [1986], pp. 115–116, and the references cited there. Even perceptual beliefs are only trustworthy when properly examined by Reason, so some room for error remains here as well (see the final two sentences of Descartes [1641a]).

¹⁴ Recall that our Second Philosopher has no grounds on which to denounce First Philosophy as 'unscientific'. Open-minded at all times, she's willing to entertain Descartes's claim that the Method of Doubt will uncover useful knowledge. If, by her lights, it did generate reliable beliefs, she'd have no scruple about using it. But if it did, by her lights—that is, by lights we tend to describe as 'scientific'—then we'd also be inclined to describe the Method of Doubt as 'scientific'.

Descartes's meditator begins by rejecting science and common sense in the hope of founding them more firmly by philosophical means, our inquirer proceeds scientifically and attempts to answer even philosophical questions by appeal to its resources. For Descartes's meditator, philosophy comes first; for our inquirer, it comes second—hence 'Second Philosophy' as opposed to 'First'. Our Character now has a name: she is the Second Philosopher.¹⁵ Let's continue our Study by turning her attention from Descartes's project to contemporary radical skepticism.

¹⁵ The Second Philosopher is a development of the naturalist described in my [2001b] and [2003], building on [1997]; I adopt the new name here largely to avoid irrelevant debates about what 'naturalism' should be. Though some take naturalism to be a metaphysical doctrine—e.g., there are no abstracts or everything is physical—Second Philosophy is closer to various methodological readings—e.g., there are no extra-scientific means of finding out how the world is. Still, as we've seen, the Second Philosopher espouses no such doctrine: she is simply a certain type of inquirer (which it is the burden of Part I to delineate); the conclusions of her deliberations constitute Second Philosophy.

I.2

Neo-Cartesian skepticism

The Descartes we've been examining so far—let's call him Broughton's Descartes—regards the skeptical hypotheses as an invaluable tool in his search for a new foundation for science,¹ but contemporary epistemologists tend to entertain a more potent skepticism that takes center stage all on its own. To see how our Second Philosopher fares in this context, let's turn our attention to another Descartes, of whom Barry Stroud writes:

By the end of his *First Meditation* Descartes finds that he has no good reason to believe anything about the world around him and therefore that he can know nothing of the external world. (Stroud [1984], p. 4)

The claim here is not merely that Descartes cannot be certain of the truth of his beliefs about the world; the claim is that he has no good reason to believe anything at all about the world, no good reason even to believe that it is more likely than not, on balance, that he has hands. This Descartes stands in clear conflict with common sense, with Broughton's Descartes, and with our Second Philosopher: though she may well admit that it's possible she has no hands—as a good fallibilist should²—she will insist that this is extremely unlikely.

Stroud's argument for this strong claim brings us back to the possibility of dreaming. The meditator realizes that the senses sometimes mislead him—when the light is bad, when he is tired, and so on—so he focuses on a best possible case: he sits comfortably by the fire with a piece of paper in his hand. At first, it seems to him impossible that he could be wrong about this—until he's hit by the thought that for all he knows he might be

¹ Both Broughton ([2002], pp. 13–15) and Garber ([1986], p. 82) would allow that Descartes has some interest in replying to the skeptical arguments current among his contemporaries, but they see this as a side benefit to carrying out his real project of revising the foundations of science.

² A fallibilist holds that we can't be absolutely certain that our reasonable beliefs about the world are true.

dreaming. ‘With this thought,’ Stroud writes, ‘Descartes has lost the whole world’ (Stroud [1984], p. 12). If this is correct, then Broughton’s Descartes has misunderstood the force of his own skeptical scenario; he fails to realize that the dream possibility undercuts not only the certainty, but also the reasonableness of his belief that he’s awake and has hands. If this is true, then the sensible-sounding approach of II.1—that it’s far more reasonable than not to believe that I’m not dreaming, but I adopt the Method of Doubt for instrumental purposes—is in fact not fully coherent.

Challenged once again with the possibility that she might be dreaming, the Second Philosopher is tempted to answer in the spirit displayed by Descartes himself at the end of the *Meditations*:

The exaggerated doubts...should be dismissed as laughable...especially...my inability to distinguish between being asleep and being awake...there is a vast difference between the two, in that dreams are never linked by memory with all the other actions of life as waking experiences are...when I distinctly see where things come from and where and when they come to me, and when I can connect my perceptions of them with the whole of the rest of my life without a break, then I am quite certain that when I encounter these things I am not asleep but awake. (Descartes [1641a], pp. 61–62)³

Along these lines, the Second Philosopher points out that her experience is continuous and coherent: objects aren’t popping in and out of existence (as they do in dreams); they have relatively stable identities (they don’t morph one into another, as they do in dreams); ordinary expectations are fulfilled (animals don’t speak, I don’t fly, as happens in dreams), and so on. Furthermore, she continues, my thought process is deliberate—I can focus my attention—and sustained—I can follow a line of logical steps, or carry out a series of premeditated actions. All this clearly distinguishes my current experience from what I’ve experienced while dreaming.⁴

Descartes’s First Meditation meditator also considers a reply along these lines:

...at the moment, my eyes are certainly wide awake when I look at this piece of paper; I shake my head and it is not asleep; as I stretch out and feel my hand I do

³ If ‘I am quite certain’ is replaced with ‘I have good reason to believe’, it seems Descartes’s meditator, on Broughton’s reading, could have said this in the First Meditation.

⁴ In my [2003], I forgo any sustained effort to rebut the dreaming challenge by ordinary means, on the grounds that the Evil Demon hypothesis is immune in principle to this style of response. It now seems to me important to explicitly distinguish the two challenges—ordinary dreaming and the Evil Demon—for reasons I hope will become clear in what follows.

so deliberately, and I know what I am doing. All this would not happen with such distinctness to someone asleep. (Descartes [1641a], p. 13)

His response, at this point, is brief:⁵

Indeed! As if I did not remember other occasions when I have been tricked by exactly similar thoughts while asleep! (Descartes [1641a], p. 13)

The ‘similar thoughts’ here must be those I have when I convince myself while dreaming that I’m not dreaming: I might, for example, shake my head in the dream, or dream that I’m carrying out a long and involved chain of reasoning. In Stroud’s words, if

there is a test or circumstance or state of affairs that unfailingly indicates that he is not dreaming... In order to know that his test has been performed or that the state of affairs in question obtains Descartes would... have to establish that he is not merely dreaming that he performed the test successfully or that he established that the state of affairs obtains. (Stroud [1984], pp. 21–22)⁶

For that matter, I might even be dreaming my decisive test or state of affairs: for example, I might dream that I’m in a green room and that being in a green room is a reliable indicator of wakefulness, then conclude from these dream beliefs that I am awake.⁷

So the Second Philosopher is now challenged to show that her current impressions of continuous and coherent experience, of deliberate and sustained thought processes, aren’t themselves dreamed, and that her inference from these features of her experience to the conclusion that, in all likelihood, she isn’t dreaming isn’t itself a dream delusion. Of course, she’s already acknowledged that she often suffers from false convictions while dreaming; she now acknowledges, in particular, that she might, while dreaming, misapply her own criteria for wakefulness or apply incorrect criteria in their place. She knows, from past experience, what this would be like, what it would be like, for example, to apply the green room criterion: it would be a fleeting experience, lasting a few moments, in a general flux of confusion and disorder. In contrast, her current experience is part of

⁵ Perhaps because, as on Broughton’s reading, he actually thinks these ordinary considerations do in fact make it more reasonable than not to think that he’s awake.

⁶ For Stroud on ‘ordinary methods’, see his [1984], pp. 21–23, 46–48.

⁷ Stroud [1984], p. 21, makes the point that Descartes must know, not dream, that his test or other criterion for wakefulness is reliable. (I’m grateful to Kyle Stanford for the ‘green room’ formulation.)

a much longer stream of experience that stretches into the past, with the memories of a lifetime, including episodes of dreaming and waking, talking with others about their dreams and comparing notes, performing or reading about experiments on sleeping subjects that correlate dream reports with REM movements, and so on. These explorations are of a piece with other observations, experiments, and theories that form a large body of beliefs about what the world is like, about what people are like, and about the place of these people in that world. Finally, this same elaborate stream of experience also projects into the future, with expectations and intentions, beliefs about what will happen, what may happen, about the actions she might take to influence these eventualities, and so on.

Here the Second Philosopher, in response to the second challenge—how do you know you aren't dreaming that you've applied your criteria for wakefulness, or dreaming up and applying some false criteria?—has merely fleshed out her response to the first challenge—are you dreaming that you have hands?—by elaborating on what it is about her current experience that makes it different from the dreaming she has experienced and studied. The skeptic will, of course, persist: 'yes, yes, I understand, but how do you know that *all this*, everything you describe, isn't itself a prolonged and intricate dream?' To which I think the Second Philosopher must reply: 'yes, I suppose, in some way, it might be. But if so, it's a dream unlike, say, the green room dream, from which I can awaken in the usual way, that I can come to recognize as deceptive in the usual way. If I were to awaken from the grand delusion you now ask me to imagine, I have no idea what kind of reality I would find. The delusion itself is so all-encompassing as to include everything I think I know about dreaming and waking, plus the overall picture of the world and people and myself in which that is embedded, in short, everything I've ever experienced or hope to or expect to or dread to experience in the future. Obviously, you're right—nothing I can point to would weigh for or against the possibility that the well-ordered experience and thought processes I'm now experiencing are parts of such a dream.'

What's happened here is that the hypothesis that I might be dreaming in the ordinary sense has been replaced by that of a dream delusion so powerful as to serve as the functional equivalent of the Evil Demon hypothesis:

I will suppose ... some malicious demon of the utmost power and cunning has employed all his energies in order to deceive me. (Descartes [1641a], p. 15)

So, where does this leave the Second Philosopher? She continues to insist that she has grounds on which to be confident, though not certain, that she is not now dreaming in the ordinary sense, but this new challenge is different: by its very construction, it rules out appeal to any of her hard-won beliefs about the world; they are all brought into question at once by the Evil Demon-style hypothesis of extraordinary dreaming. With her hands so tied, she can't refute the hypothesis; indeed, she can't so much as show it to be unlikely, given that her judgments of likelihood also depend on ancillary beliefs about how the world is.⁸ To answer the strong skeptical challenge, she must give up all her well-confirmed beliefs about the world and her place in it, surrender all her fine-tuned methods for finding out how things stand, and then justify ... well, it will hardly matter at this point what she is then asked to justify. She will freely affirm that she can't justify her beliefs about the world, can't explain the reliability of any belief-forming mechanism, without relying on her best methods of investigation. She realizes that those beliefs and methods are flawed in various ways, and she has and will continue to put every effort into uncovering and correcting those weaknesses, into strengthening safeguards and developing the most reliable tools, but she agrees with the skeptic that she can do nothing if she's required to set them all aside entirely.

Where the Second Philosopher and the skeptic disagree is on what follows from this. The Second Philosopher recognizes that the original challenge, from ordinary dreaming, was potentially serious: if I really have no good reason to believe that I'm not currently dreaming, she agrees that I also wouldn't have any good reason to believe that I have hands, or anything else. But this real challenge can be met, and the revised challenge seems much less troublesome; though she agrees that she can't rule out the possibility that she's being deceived by an Evil Demon or dreaming in the extraordinary sense, she denies that this fact undercuts the reasonableness of her belief that she has hands. That she can't justify all her beliefs *ex nihilo* doesn't surprise her, and seems much less unsettling.

Stroud's Descartes starkly disagrees, insisting that, in order to have reasonable beliefs about the world, we must be able to rule out the possibility

⁸ Here the Second Philosopher makes no attempt to claim that the skeptical hypothesis is inherently less likely (in the jargon: that it has low *a priori* probability). See Putnam [1971], pp. 352–353, for this style of reply to the skeptic.

of Evil Demon-style extraordinary dreaming.⁹ Of course, he admits that in ordinary life, we don't insist that the chemist's report include 'an account of how the experimenter determined that he was not simply dreaming that he was conducting the experiment' (Stroud [1984], p. 50).

And if a prosecutor were to ask, after

I testify on the witness stand that I spent the day with the defendant, that I went to the museum and then had dinner with him, and left him about midnight... (Stroud [1984], p. 49)

whether I might not have dreamed the whole thing, everyone in the courtroom would consider the question 'outrageous'.¹⁰ Does this show that Stroud's Descartes is operating with some extraordinary notion of what it takes to know something, that his ultra-refined worries have nothing to do with knowledge as we understand and use the term?

Stroud thinks not. He points out that it's being inappropriate to criticize the witness's or the chemist's knowledge claims in this way doesn't by itself show that ruling out the dream hypothesis isn't necessary for knowledge:

The inappropriately-asserted objection to the knowledge-claim might not be an outrageous violation of the conditions of knowledge, but rather an outrageous violation of the conditions for the appropriate assessment and acceptance of *assertions* of knowledge. (Stroud [1984], p. 60)

The witness and the chemist make their claims to knowledge 'on just about the most favorable grounds one can have for claiming to know things' (Stroud [1984], p. 61), so it isn't appropriate to criticize them for failing to

⁹ Stroud doesn't distinguish ordinary from extraordinary dreaming, which gives his presentation a rhetorical advantage: by phrasing his skeptical challenge in terms of a familiar phenomenon like dreaming, rather than explicitly invoking an Evil Demon-style hypothesis, he makes that challenge appear more commonsensical than it is. (Williams makes what may be a similar point in his [1988], p. 439.) This observation could help explain why we're so easily drawn in to the skeptical line of thought: it begins from a familiar and commonsensical possibility—I might be dreaming—that *would* undermine my purportedly reasonable belief in what I now seem to perceive if it couldn't be ruled out, but in the course of the argument, ordinary dreaming slides imperceptibly into extraordinary dreaming. This would explain the sensation that we're somehow, almost unconsciously, being led into a sort of philosophical game that leaves common sense behind.

¹⁰ The Second Philosopher would say that such challenges are inappropriate or outrageous in everyday situations because they're silly: of course, the chemist and the witness weren't dreaming; it goes without saying! This analysis won't do if extraordinary dreaming is what's at issue, because that can't be ruled out, but in that case, the nature of the challenge being put to the chemist and the witness would have to be clarified, and we would no longer be describing 'ordinary life'.

rule out, or even to consider, the possibility that they're dreaming.¹¹ But this doesn't show that they do in fact know what they claim to know.

Having found this opening, Stroud's Descartes takes it: when there's no reason to suppose I might be dreaming, he thinks that it's appropriate for me to assert that I know, but that I still do not in fact know unless I can rule out that possibility. The reason for this discrepancy between conditions for knowledge assertions and conditions for knowledge lies in the contrast between the practical and the theoretical:

It would be silly to stand for a long time in a quickly filling bus trying to decide on the absolutely best place to sit. Since sitting somewhere in the bus is better than standing, although admittedly not as good as sitting in the best of all possible seats, the best thing to do is to sit down quickly ... there is no general answer to the question of how certain we should be before we act, or what possibilities of failure we should be sure to eliminate before doing something. It will vary from case to case, and in each case it will depend on how serious it would be if the act failed, how important it is for it to succeed by a certain time, how it fares in competition on these and other grounds with alternative actions which might be performed instead, and so on. This holds just as much for the action of saying something, or saying that you know something, or ruling out certain possibilities before saying that you know something, as for other kinds of actions. (Stroud [1984], pp. 65–66)

The picture, then, is of a sliding scale of strictness on proper assertions of knowledge.

From the detached point of view—when only the question of whether we know is at issue—our interests and assertions in everyday life are seen as restricted in certain ways. Certain possibilities are not even considered, let alone eliminated, certain assumptions are shared and taken for granted and so not examined. (Stroud [1984], pp. 71–72)

In ordinary life, then, we make knowledge claims loosely, for practical purposes, though in truth, we do not know. In contrast, when there are no mundane time pressures, when there is no limit on the amount of 'effort and ingenuity' (Stroud [1984], p. 66) we can bring to bear on the question of the truth of our claims—in such a context, we shouldn't claim to know

¹¹ Notice that the inappropriateness or outrageousness of the dream challenge is here traced to the idea that ruling it out is somehow too much to ask. Again this indicates that extraordinary dreaming is what's at issue. (See previous footnote.)

until we have ruled out every possibility that would preclude our knowing, and, in particular, we must rule out the possibility that we are dreaming (even extraordinary dreaming). So Stroud's Descartes hasn't changed the subject; he's simply working with the usual notion of knowledge in an unrestricted or theoretical context.¹²

Now there is considerable appeal in this notion of a sliding scale of stringency. The Second Philosopher imagines a shopkeeper concerned about the coins he takes in: are they pure metal or fakes?¹³ He instructs his hired assistant to bite each coin to be sure, knowing that many counterfeits are laced with harder metals. He also knows that more sophisticated counterfeiters produce fake coins with hardness comparable to pure coins by a different, more difficult process, and that these finer fakes can be detected by an optical device he keeps in the back of his shop. But the fellows capable of this fine work are now in jail, so he doesn't bother to include this extra twist in his instructions to his assistant. Under these conditions, when the assistant says he knows a particular coin is pure metal, the shopkeeper realizes that the fellow doesn't really know, because he hasn't used the optical device in the back room and doesn't know that the coin isn't one of the finer fakes, but the knowledge claim is appropriate in the context, and the shopkeeper would be out of line to correct him.

Likewise, the chemist knows that there are impure metals that pass both the biting test and the optical test, so he can see that the shopkeeper's claim to know, after using his optical device, is also restricted, despite being appropriate in the given circumstances. Even the chemist's claim to know that the metal is pure will appear restricted to the physicist, who realizes that there are atomic variations undetectable by chemical means. And even the physicist may have to admit that there are possible variations he doesn't yet know how to test for, and he will always realize that there may be possibilities he's unaware of that will be uncovered by future scientists. So,

¹² Williams describes this nicely as a sort of 'vector addition': 'The concept of knowledge, left to itself so to speak, demands that we consider every logical possibility of error, no matter how far-fetched. However, the force of this demand is ordinarily weakened or redirected by a second vector embodying various practical or otherwise circumstantial limitations. The effect of philosophical detachment is to eliminate this second vector, leaving the concept of knowledge to operate unimpeded' (Williams [1988], p. 428).

¹³ I use this example in place of Stroud's plane spotters (Stroud [1984], pp. 67–75) to bring out the role of scientific inquiry in the sliding scale. The plane spotters return later in Stroud's presentation (Stroud [1984], pp. 80–81) to what seems to me a different end; I take this up below.

even his claim to know that the metal is pure will be subject to the proviso, 'at least as far as current science can determine'.

All this gives the idea of a sliding scale of restrictiveness some initial plausibility. It does seem true that our standards of evidence are more stringent in the chemist's lab than in the shop, and so on, that when important legal judgments or fundamental scientific inquiry are at issue, we sift our evidence more carefully, require a higher degree of confidence. But, as the Second Philosopher will note, this doesn't show that there's anything lacking in a simple perceptual case like my seeing my hand before me under good conditions: here I'm not hampered by time pressure or ignorance or anything else; no further, more strenuous investigation or special expertise seems relevant. Likewise, the ideal of scientific research is to reach conclusions deliberately, with thorough and detached examination of all relevant data, etc.; it's hard to see, for example, what's lacking in our evidence that water is H₂O.¹⁴ So the Second Philosopher fails to see how the fact that degrees of confidence fall along a sliding scale serves to undermine her claim to a reasonable belief that she has hands, that water is H₂O, and so on.

To see what's gone wrong here, let's return to that rapidly filling bus. The idea is supposed to be that when I claim to know I have hands under ordinary perceptual conditions, there's a risk I might be wrong—just as there's a risk I might not get the best seat on the bus if I sit down quickly—but it might still be best, in both cases, to take action despite that risk. But if Stroud's Descartes is right, it isn't that there's a small risk my knowledge claim might be wrong, as there's a small risk I won't get the best seat—if Stroud's Descartes is right, there's *no* chance that my knowledge claim is correct, because in fact I have *no* grounds on which to think my having hands is more likely than not!

These sliding scale considerations would make sense if Stroud's Descartes took the position that knowing requires certainty—our beliefs only amount to knowledge at the high endpoint of the sliding scale, when all possible care has been taken, when all competing possibilities, no matter how remote, have been ruled out—but this position wouldn't conflict with the Second Philosopher's claim to reasonable, though not certain, belief at various lower points. Furthermore, given that Stroud's Descartes insists that there isn't even reasonable belief, let alone knowledge, at lower points, it's

¹⁴ See I.1, footnote 9.

hard to see what our everyday ‘knowledge’, improperly so called, has in common with that rarefied (indeed, non-existent) stuff at the top. On the one picture, where certainty is required, the chemist’s reasonable beliefs are like knowledge, just not quite certain enough to qualify; on the second picture, Stroud’s picture, the chemist has no reason to think his beliefs are more likely than not, until suddenly, at the very top, they turn to knowledge. This radical discontinuity counts against the claim that Stroud’s Descartes is operating with our everyday notion of ‘knowledge’.¹⁵

Of course, some contemporary discussions of skepticism do take certainty to be a requirement for knowledge,¹⁶ but Stroud has been explicit in rejecting this approach. In reply to Michael Williams,¹⁷ Stroud holds that the requirement of certainty isn’t presupposed by the skeptical reasoning, but instead emerges from it:

What some philosophers see as a poorly motivated demand for ‘foundations’ of knowledge looks to me to be the natural consequence of seeking a certain intellectual goal, a certain kind of understanding of human knowledge in general. (Stroud [1989], p. 104)

Stroud explains the key idea here, the special sort of insight into knowledge that’s in question, with his analogy of the plane spotters: these fellows have a manual that tells them how to determine which type of plane they are seeing, but the reflective plane spotter realizes that he would be in a better epistemic position if he also checked the reliability of the manual. According to Stroud, Descartes’s

¹⁵ An unmentioned assumption here is that the ‘ordinary notion of knowledge’ is unified and determinate enough to provide a fact of the matter on questions like these. In addition to the reservations expressed in the text, the Second Philosopher might well doubt that a real world analysis of the semantics of the word ‘know’ would turn up any such thing. (See II.6 for discussion of Wilson [2006], a powerful antidote to the conviction that our words typically work by being affixed to concepts with stable and determinate extensions.) Williams ([1988], p. 428) seems to make a similar suggestion, though in a different argumentative setting. The contextualist Lewis ([1996]) finds the concept complex, but still more strictly codifiable than seems likely for a rough and ready notion like knowledge.

¹⁶ e.g., David Lewis takes the idea of fallible knowledge to be ‘madness’ (Lewis [1996], p. 221). Williams, on the other hand, holds that ‘there is no obvious route from fallibilism...to skepticism’ (Williams [1988], p. 430). I tend to agree with Williams that the skeptical challenge isn’t of much interest (unless as a method, as for Broughton’s Descartes) if it rests on a requirement of certainty.

¹⁷ Stroud [1996]. The central topic of debate between Stroud and Williams is the status of ‘foundationalism’ (i.e., the view that all knowledge rests on some indubitable basic beliefs)—whether it’s a presupposition or a consequence of the skeptical reasoning—rather than an explicit requirement of certainty, but clearly these are closely related. Stroud mentions certainty directly in [1989], p. 104.

conception of our own position and of his quest for an understanding of it is parallel to this reflective airplane-spotter's conception. (Stroud [1984], p. 81)

We aspire in philosophy to see ourselves as knowing all or most of the things we think we know and to understand how all that knowledge is possible. (Stroud [1994], p. 296)

In other words, I must investigate the reliability of my entire 'manual', that is, my entire store of beliefs and belief-forming methods.

The road from here to what Stroud calls 'the philosophical problem of the external world' (Stroud [1984], p. 82) is short: I believe there is a hand before me—On what grounds?—Because I perceive it—But mightn't I be dreaming? At this point in the argument, we imagined the Second Philosopher appealing to ordinary evidence that she wasn't dreaming, but with this new understanding of the problem, that road is closed:

...how, given that we do perceive what we do, do we know [we have hands]? This ... is ... a straightforward question which simply awaits an answer. ... I think we believe we could give good answers to those questions. We would appeal to many other things we know to explain the connection in [this particular case] between what we see and what we claim to know.

But in philosophy we want to understand how *any* knowledge of an independent world is gained on *any* of the occasions on which knowledge of the world is gained through sense-perception. So, unlike those everyday cases, when we understand the particular case in the way we must understand it for philosophical purposes, we cannot appeal to some piece of knowledge we think we have already got about an independent world. (Stroud [1996], p. 132)

And, as we've seen, the Second Philosopher agrees that she can't justify anything without appeal to her familiar beliefs and methods.

Here it's hard to avoid the impression that the skeptic has shifted his ground:¹⁸ before, it was the special skeptical hypotheses, like extraordinary dreaming or the Evil Demon, that undercut the Second Philosopher's appeal to her ordinary justifications; now it's the distinctive features of the philosophical, as opposed to everyday, question of knowledge that do that job. On this new version of the problem, it's clear how the certainty requirement falls out rather than being presupposed: as soon as I realize

¹⁸ I suspect my insensitivity to some of Stroud's argumentation is more to blame for this impression than any inconsistency in his thinking. I follow up these two trains of skeptical thought in the text, for the sake of argument, because they seem distinct to me.

there's room for any sort of doubt, I'm lost, because I'm denied access to the sort of collateral information I'd need in order to show that the grounds for doubt are unlikely. The doubt in question could be the possibility that I'm dreaming, in the ordinary sense, or it could be even more familiar concerns: am I too far away to judge properly?, is the lighting deceptive?, am I under the influence of some strong medication?¹⁹ But for our purposes here, perhaps the most striking difference is this: before, the sliding scale argument was mounted to show that the skeptic's worries are, in fact, of a piece with our ordinary worries about particular knowledge claims; now, it's freely admitted that the skeptic is engaged in a peculiarly philosophical project, distinct from mundane concerns.²⁰

From the Second Philosopher's point of view, the situation looks like this. She has various methods of finding out what the world is like, beginning with observation, and as she builds and tests her theories, she also tests and refines those methods themselves. She has seen, in her day, implementations of various bad procedures for finding out about the world, like astrology and creationism, and she can explain in detail where and how these methods go wrong. She constantly works to conduct her inquiries in a detached and unhurried way, as unimpeded as possible by practical limitations and lingering prejudices. When she claims to know that she has hands, she can't conclusively rule out the possibility that she's dreaming, but she can confidently argue that it's quite unlikely, that her belief in her hands is reasonable.

Then Stroud's Descartes presents her with an alternative hypothesis: perhaps she is dreaming in an extraordinary sense, perhaps her whole life has been a long and elaborate delusion, perhaps there is an Evil Demon who has made it seem to her that what she thinks she knows is true when it is not. The very structure of these skeptical hypotheses guarantees that none of her tried and true beliefs and methods can be brought to bear on them

¹⁹ Indeed, I might simply note that I have room to doubt that perception is a reliable means of forming beliefs: it errs sometimes, after all—just how good *is* its track record? This highlights the connection to the perfectly general demand that the Second Philosopher defend her belief-forming methods without appeal to any of those methods.

²⁰ Cf. Stroud [1996], p. 133: 'I think the special generality we seek in philosophy, combined with the "truism" about the perceptual source of all human knowledge, and with the introduction of certain possibilities of error which are not normally raised in everyday life is what together makes the [skeptic's] question impossible to answer satisfactorily.' Here the extraordinary character of the philosophical question of knowledge is explicitly acknowledged as a presupposition of the skeptic's argument. What I don't understand is why the extraordinary possibilities of error are also needed when the problem is posed in this 'philosophical' sense; ordinary possibilities of error would seem to be enough.

one way or the other. In the face of this challenge, the Second Philosopher must acknowledge that she has no case against such scenarios, indeed, that she can't rule anything out or in, likely or unlikely, reasonable or unreasonable when all her methods of investigation are rendered irrelevant. She acknowledges, in other words, that she can't justify anything without using the methods of inquiry she's developed for that purpose; the very suggestion that she attempt this seems wrong-headed to her.²¹ Where she and Stroud's Descartes disagree is on whether this admission renders her current beliefs unreasonable, based as they are on methods she can't justify independently. It's hard to avoid the suspicion that there may be no fact of the matter to ground a judgment either way, that what we're faced with here is a decision on how best to employ the honorifics 'knowledge', 'justification', 'reasonable', and so on.

Now the skeptic reappears in a different guise, insisting that

All of my knowledge of the external world is supposed to have been brought into question in one fell swoop ... I am to focus on my relation to the whole body of beliefs which I take to be knowledge of the external world and to ask, from 'outside' as it were ... whether and how I know it ... (Stroud [1984], p. 118)

In this terminology, the Second Philosopher's account of how and when perception is a reliable guide, her study of various methods of reasoning, of theory formation and testing, and so on, are all relentlessly 'from the inside'. To illuminate what he takes to be the shortcoming of the Second Philosopher's internal efforts, Stroud invites us to imagine a pseudo-Cartesian inquirer who gives the following account of his knowledge of the world:²² 'I know because I have a clear and distinct idea, and God makes sure that I only have clear and distinct ideas about things that are true; furthermore, I came to believe this about God by means of clear and distinct ideas, so I have good reason to believe I am right.' This account is to run parallel to the Second Philosopher's: 'I know because my belief is generated by such-and-such methods, and such-and-such methods are reliable; furthermore, I

²¹ When Broughton's Descartes proposed that she adopt the Method of Doubt, that she reject her familiar beliefs and methods in order to uncover a deeper methodology that would place science on a firmer foundation, the Second Philosopher was willing to give this a try, despite her strong conviction that the project wouldn't work. Now Stroud's Descartes is asking that she undertake a project similar to Broughton's Descartes, that she attempt to justify her own methods *ex nihilo*—an undertaking she thought unreasonable all along—without giving her any fresh motivation.

²² This is adapted from Stroud [1994], a reply to externalism. See also Stroud [1989].

came to believe that they are reliable by means of such-and-such methods, so I have good reason to believe that I'm right.' We may be inclined to think that the Second Philosopher *is* right—that perception and her other methods of belief formation *are* reliable—and that the pseudo-Cartesian is wrong—that there is no such accommodating God—but, as Stroud points out, the best either of these inquirers can say is: 'If the theory I hold is true, I do know... that I know... it, and I do understand how I know the things I do' (Stroud [1994], p. 301). Given that all our knowledge is being called into question at once, neither the Second Philosopher nor the pseudo-Cartesian can detach the antecedent, so neither can give a philosophically satisfying account of their knowledge.

So this time around, the challenge isn't merely to justify my claim to know that I have hands; in addition, that justification must be 'philosophically satisfying', which is to say, it must come 'from the outside'. This the Second Philosopher admits she cannot do, much as she cannot rule out extraordinary dreaming or the Evil Demon hypothesis—that is, she can't explain her knowledge without using her methods of explanation—but Stroud has enhanced the rhetorical force of this admission with the suggestion that she's in no better position than this woeful pseudo-Cartesian. Of course, she doesn't see it that way; to her, the pseudo-Cartesian is just another in a long line of the benighted—like the astrologer and the creationist—all of whom she can dispatch on straightforward grounds. What Stroud's comparison invites her to attempt is an explanation of the pseudo-Cartesian's errors that uses none of her methods, a task that seems to her no more reasonable than the original challenge to explain her knowledge using none of her methods.

In sum, then, by whichever route, we end up with the same insurmountable skeptical challenge. This challenge has not been shown to be implicit in our ordinary notions of knowledge and justification,²³ and adopting the philosophical perspective on the problem of knowledge is an undertaking quite remote from our ordinary dealings. The Second Philosopher's position comes down to this: she has some well-honed ways of trying to find out what the world is like; they have delivered a picture of the world that is stable, predictively useful, admirably coherent, and explanatory; these methods are fallible, always subject to improvement;

²³ That is, the sliding scale considerations are not persuasive.

indeed, they can't be defended at all against various, carefully constructed skeptical scenarios, nor can they be justified 'from the outside'; and finally, no one, including the skeptic, has proposed a more promising way of going about her investigations. We observers are left to determine which of our two characters—the skeptic or the Second Philosopher—has a stronger claim to the notion of 'reasonable belief'.

The Second Philosopher's reactions in all this are reminiscent of G. E. Moore, who famously answered the skeptic with this 'proof of an external world':

I can prove now ... that two human hands exist. How? By holding up my two hands, and saying, as I make a certain gesture with the right hand, 'Here is one hand', and adding, as I make a certain gesture with the left, 'and here is another'. (Moore [1939], pp. 145–146)²⁴

In such reasonings, Moore, like the Second Philosopher, sticks to the 'internal' or 'everyday' versions of the skeptic's questions. Stroud writes:

It is precisely Moore's refusal or inability to take his own or anyone else's words in [the] 'external' or 'philosophical' way that seems to me to constitute the philosophical importance of his remarks. He steadfastly remains within the familiar, unproblematic understanding of those general questions and assertions with which the philosopher would attempt to bring all our knowledge of the world into question. He resists, or more probably does not even feel, the pressure towards the philosophical project as it is understood by the philosophers he discusses²⁵ ... But how could Moore show no signs of acknowledging that [those questions] are even intended to be taken in a special 'external' way derived from the Cartesian project of assessing all our knowledge of the external world at once? That is the question about the mind of G. E. Moore that I cannot answer. (Stroud [1984], p. 119, 125–126)

Here the Second Philosopher must sympathize with Stroud. Though she, like Moore, is disinclined to succumb to the 'lure' of the philosophical project, she surely realizes that those who do so are intending that the question of the external world be understood in a sense that explicitly marks off everything she has to offer as beside the point. She may even

²⁴ See also Moore [1925]. (I should note that Moore, unlike the Second Philosopher, thinks he is certain he has hands.)

²⁵ Stroud notes ([1984], p. 120) that 'even Homer nods': there are places where Moore leans farther than perhaps he should toward the 'external' understanding.

sympathize with their quixotic wish for a more satisfying answer than hers. For this reason, she, unlike Moore, makes no claim to have answered the skeptic's challenge.

Speaking for himself, rather than the skeptic, Stroud writes:

I think reflection on this kind of reflection [that is, on the reasoning that leads to skepticism] can be expected to reveal something interesting and deep about human beings, or human aspiration. (Stroud [1996], p. 124)

This seems right. Our Second Philosopher freely acknowledges one poignant aspect of the human condition: we can't step outside our system of beliefs and methods and justify them from an external perspective; the only perspective we can occupy is our own. Her equanimity in the face of this admission may frustrate us, insofar as we are subject to a familiar aspiration:

... a desire to understand ourselves in a certain way, to get into a certain position with respect to human knowledge and perhaps the human condition generally. It takes the form of a desire to get outside that knowledge and that condition, as it were, while somehow retaining all the resources needed to see them as they are. (Stroud [1996], p. 138)

One instance of this aspiration is our desire to say what's wrong with the thinking of Stroud's pseudo-Cartesian and what's right about our own, and to do so without opening ourselves to the charge: but that's just how it looks according to *your* methods! The Second Philosopher sets aside this objection with the now-familiar observation that her methods are the best she knows, justified by considerations so-and-so, but many of us aspire to a more conclusive refutation, a case whose force the pseudo-Cartesian must feel.²⁶

Perhaps, after all, the proper upshot of reflection on the skeptic's reasoning should be a particular brand of humility, once recommended by David Hume:

... could such dogmatical reasoners become sensible of the strange infirmities of human understanding ... such a reflection would naturally inspire them with more modesty and reserve, and diminish their fond opinion of themselves, and their prejudice against antagonists. ... And if any of the learned be inclined, from their natural temper, to haughtiness and obstinacy, a small tincture of [skepticism] might abate their pride, by showing them, that the few advantages, which they may have

²⁶ It seems to me that many professed naturalists can't resist the temptation to rise to this challenge (see I.7, IV.1).

obtained over their fellows, are but inconsiderable, if compared with the universal perplexity and confusion, which is inherent in human nature. In general, there is a degree of doubt, and caution, and modesty, which, in all kinds of scrutiny and decision, ought forever to accompany a just reasoner. (Hume [1748], p. 208)

Of course, Hume himself is often described as a naturalist,²⁷ so perhaps we can find other points of contact for the Second Philosopher.

²⁷ 'Naturalism' is a blanket term for views in the same generally science-friendly family as Second Philosophy (see I.1, footnote 15). Hume clearly rejects the supernatural, but our focus, again, will be more methodological.