Simplicity

A Meta-Metaphysics

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Principles and Definitions

§2truth-claim is only implicit in the conceptual picture being advanced, criticism would today be considered out of place.

Another difference between philosophy on the one hand and mythology and religion on the other has to do with curiosity. From one point of view you could say that a particular mythology is a *society's* response to *its members'* curiosity or wonder about fundamentals, whereas a particular philosophy is an *individual's* response to his *own* curiosity. This does not prevent a particular philosophy, however, from becoming a mythology in its own right.

Mythology and religion also differ from philosophy not only in being ways of thinking but ways of acting as well, aspects of which, in the case of religion, being prayer and meditation.

Science

Modern science can also be said to consist of individuals' responses to their own curiosity. But the realm of things scientists are curious about is more restricted and less fundamental than that which interests philosophers. And when science does start investigating fundamentals, the nature of the inquiry becomes more philosophical and less scientific—as in the case, for example, of indeterminacy in quantum mechanics. As I'll explain more thoroughly later on, modern science is only concerned with the physical aspect of reality, and is in fact the result of the development of a particular physicalist philosophical approach.

Metaphysics and Principles

Metaphysics is normally spoken of as a particular part of philosophy—its most important part, having to do with what is *really* fundamental.

What we call *metaphysics*, Aristotle referred to as *first philosophy*, meaning philosophy that investigates or posits *principles* concerning the whole of reality. In this way then we could distinguish metaphysics from other forms of philosophy such as, for example, philosophy of science, where the philosopher's interest as far as principles are concerned is limited to just the principles of science.

Sometimes metaphysics is identified with ontology, which is the study of the preconditions for something to exist. I think this is too narrow a characterization. As said, metaphysics has to do with *fundamentals*, questions regarding which may or may not be directly related to the question of the existence of things. Ontology is only a *part* of metaphysics; a metaphysics *has* an ontology.

So, metaphysics concerns principles. If you are yourself a philosopher, then principles will be what interests you more than anything else. If there is a way reality fundamentally is, or *operates*, then principles constitute that way. Whenever we confront reality, we consciously, or much more often unconsciously, assume it to have certain fundamental aspects. These assumptions constitute our most basic *presuppositions* concerning the nature of reality, i.e. what we suppose its principles to be. In certain activities these presuppositions can be different from in others, and what characterizes metaphysics is that the principles investigated, or developed into a system, are those that have to do with the most fundamental aspects of reality.

Note the difference of level between principles and factual reality. To say that something *is* so on the level of principle implies that its expression on the level of fact *must* be so. Here we have the non-formal notion of necessity. The level of principles is *transcendental* with respect to the *phenomenal* level of fact; it is what de-

termines §3*real* necessity. If as a matter of principle nothing comes from nothing, then on the factual level it *must* be the case that no *particular* thing come from nothing.

Reason and Intuition

But this leads to a problem, which is that metaphysics itself must be based on the acceptance of certain principles, and so we're led into a regress. And this is true. But metaphysics, to be able to dig as deep as possible, tries to presuppose only what is necessary to *reason*. Here difference of level comes in again. We cannot give *reasons* for accepting reason without presupposing what we want to show—just as we cannot provide inductive support for the principle of induction.

And what is necessary to (our acceptance of) reason? First, that we experience some value in reasoning; and second, that we believe ourselves able to distinguish correct from incorrect reasoning. That we believe ourselves to have this ability rests on our *intuition*. And here again we have a difference of level. We cannot legitimately accept intuition on the basis of intuition—or on the basis of reason, for that matter.

An example of a fundamental principle examined by metaphysics is the principle of causality, which may be expressed as *nothing happens without a cause*. Such a principle doesn't have to be true to be accepted, and can be accepted when believed not to be true—I can assume e.g. that nothing happens without a cause to see where it leads, or what it implies, without believing it to be the case. And the notion of *applicability* may well be more relevant than that of *truth* when it comes to our conceptions of principles. I'll have a lot more to say about principles later on.

In that metaphysics or philosophy presupposes reason, it's like science and unlike poetry. Some people have said that this also distinguishes philosophy from mythology. But myths also transpire according to reason. In this regard it can be said that what happens in myths happens for different sorts of reason than those referred to in philosophy. While it is quite acceptable in mythology to suggest that Poseidon is the cause of earthquakes (and only causes them when he's angry), this way of thinking, though reasonable in itself, would not be accepted in philosophy—as it would not be in modern science.

Intuition can be said to constitute the final court of appeal in philosophy. The only problem is that not everybody's intuition is the same. Nevertheless, nobody, philosopher or otherwise, can intellectually *accept* what goes against their intuition, though they can of course *assume* it.

Logic

In considering the notion of logic you should first distinguish between logic rather generally, or *ordinary* logic, and what is called *formal* logic. And then you also have to distinguish between formal logic and what is called *mathematical* logic, and note that formal and mathematical logic are different forms of *symbolic* logic. Where ordinary logic can be applied across times, symbolic logic can only be applied at instants. When a person speaks about logic, with no adjective, often you cannot be sure precisely what they mean, and then it's generally good to be suspicious. Much confusion arises from not specifying the particular sense in which the term *logic* is being used.

Ordinary logic is the same thing as reason, which is essentially common sense,[1] whereas formal logic, which is abstracted from language and started with Aristotle,

§4 involves *structuring* reason, the aim being to indicate and help attain what should constitute *valid* reasoning, no matter what the subject matter. Some of the best known instances of formal logic are presented in Aristotle's *Organon*, Boole's *Investigation of the Laws of Thought*, and Frege's *Begriffsschrift*. Note that the intention of formal logic is, and it can do no more than, *retain* truth in reasoning. The truth itself must be obtained separately.

Mathematical logic, on the other hand, is formal logic (or set theory) applied to itself or to mathematics—i.e. formal logic applied in purely formal contexts. It can either be the development (in the object language) of the logic of mathematics (e.g. Whitehead-Russell), or the study (in the metalanguage) by mathematical methods of structural properties of formal-logical systems and formalized theories (e.g. David Hilbert).[2] Kurt Gödel's results are in mathematical logic in the second sense.

You could say that *deduction* is central to all kinds of logic, but that in formal and mathematical logic the notion of deduction is much more restrictive. It can be expressed as follows:

I. MODUS PONENS

If a statement A is true, and a statement B can be *deduced* from A, then B is also true.

It is of the essence of formal and mathematical logic that the reasoning it depict be deductive in this sense. Thus modus ponens could equally well be called *the principle of deductive inference of symbolic logic*.

Deduction in ordinary logic (think of Sherlock Holmes) on the other hand is almost always what philosophers call *induction*, which is the movement from evidence to a conclusion that goes beyond the evidence. Thus ordinary logic (reason) and formal logic in practice exclude one another, formal logic itself being unable adequately to capture the notion of induction, while ordinary logic seldom involves formal deduction.

Formal logic has never served its purpose of indicating what should constitute valid reasoning about the world,[3] except in the case of trivial examples in logic textbooks. Unlike simplicity, to be presented in the next chapter, it has never been applied to philosophical issues.[4] The attempt to connect formal logic with ordinary or philosophical language was given up at an early stage, and effort went instead into developing the formal aspects of the structures constructed. Where it has been applied with some success is thus in purely formal contexts, making it a form of mathematical logic,[5] and there it has produced results that are of philosophical interest. As a consequence, the only logic that is actually *used* is ordinary logic, in philosophy and elsewhere, plus mathematical logic, in the formal sciences.

The virtual inapplicability of formal logic to everyday and philosophical thought makes it a very poor candidate for being a paradigm of how we ought to think. Despite this, largely because of the influence of Aristotle, formal logic has throughout the ages been advanced as just such a paradigm, this line being particularly strong in the logico-analytic philosophy of the 20th century.

The raison d'être of formal logic is laid down by Leibniz,[6] where he says:

> I maintain that, in order to reason with evidence in all subjects, we must hold some constant formalism. There would be less eloquence, but more *certainty*.[7]

Note that no question is raised as regards *understanding*.

> If we had some exact *language* … or at least a kind of *truly philosophical writing*, in which the ideas were reduced to a kind of *alphabet of human thought*, then all that follows [sic] rationally from what is given could be found by a *kind of calculus*, just as arithmetical or geometrical problems are solved.[8] … The study of mathematical analysis [sic] provided me with the most genuine and elegant compendium of this *general analysis of human ideas*.

> This [calculus] is to function in metaphysics, physics and morals as calculation does in mathematics.[9]

> [It] would contain the true organon [cf. Aristotle] of a general science of everything that is subject matter for human reasoning, but would be endowed throughout with the demonstrations of an evident calculus.

> [S]ince that which we know is from reasoning or experience, it is certain that henceforth all reasoning in demonstrative or probable matters will demand no more skill than a calculation in algebra does; that is, one would derive from given experiments everything that can be derived, just as in algebra.[10]

The idea is that, using this calculus, one should be able to derive from experiments everything that *is* derivable from them—but what this should be is not mentioned, nor are examples given. Note here the treatment of an empirical endeavor being conceived of solely as though it were a formal one—a continuing theme in (logico-) analytic philosophy.

Leibniz' imaginary calculus does not suggest how truth is to be acquired, but how it is to be transferred once acquired. But even if his calculus could do this, this would not entitle him to conclude that, using it, "all reasoning in demonstrative or probable matters will demand no more skill than a calculation in algebra does," as posterity has made clear. In any case all reasoning does not concern the transfer of truth.

Leibniz continues that this formal language (calculus) would lead to an incredible perfection of the sciences through representing our thoughts truly and distinctly. And when a thought is composed of other simpler ones, its linguistic expression would be similarly composed.[11] Here we see both the influence of Socrates' demands for a definition, and the basis of Bertrand Russell's logical atomism.

> Once this is done, then when a controversy arises, disputation will no more be needed between two philosophers than between two computers. It will suffice that, pen in hand, they sit down to their abacus and (calling in a friend, if they so wish) say to each other: let us *calculate*.[12]

This spirit is also carried by George Boole, where he says that the design of his *Laws of Thought* is

> to give expression to [the fundamental laws of those operations of the mind by which reasoning is performed] in the symbolical language of a Calculus, and upon this foundation to establish the science of Logic and construct its method. … That this design is not altogether a novel one it is almost needless to remark.

This spirit drives the whole analytic tradition, and lies behind much of the last few centuries' development of both formal and mathematical logic. Formal logic is to constitute the *syntax* of just such a calculus or 'logically perfect language.'

Does the logically perfect language presuppose reason? Of course it does. Thus any formal system will depend on reason for its application and legitimation; it must *follow* reason. And reason (ordinary logic), together with intuition, constitutes the basis of thought.

§6 Argument

Another approach which has been widely accepted as being integral to philosophy, but the value of which I question, is the use of *argument*. The idea that argument should play a central role in philosophy goes back at least to Parmenides, and was important to both Plato and Aristotle. Plato's dialectical method involves argument between two interlocutors, one of whom holds a particular thesis, while the other criticizes it.

But here we must pause to reconsider the aim of philosophy and, against that background, the purpose of argument. Normally when people are carrying on a philosophical 'argument' it can be assumed that either one or both of them are trying to convince the other that something is or is not the case. But why should a philosopher want to do that? (Consider the possible influence of sophism. Why isn't argument integral to *science*?) The reason you do philosophy is because you are yourself curious about fundamentals. Your basic orientation should be to learn, not teach. Even if you feel you have hit upon a way of seeing things that for certain reasons is preferable to others', why should it matter whether others share your opinion? Of course you can look at it as though you're testing your various potential conceptions of reality by debating them according to the 'rules of reason' with other philosophers, which is okay in itself. It's just that what people actually tend to do is to try to convince others that they are right, using argument as a rhetorical device.

Of course, as I said above, one aspect of philosophy is that a philosopher's views should always be open to criticism. And if you as a philosopher have certain views which you've made public, then others must be allowed to criticize them; and if they do an argument could ensue. But there doesn't *have* to be such an argument, since no one is obliged to defend their views, just as no one is obliged to criticize them.

Another aspect of argument that is peculiar with regard to philosophizing is that in order to argue with somebody you have to agree with them on the presuppositions of the argument, otherwise the two of you will just be talking at cross purposes. And in order for this to happen, you have to *understand* one another.[13] People who think in terms of argument in philosophy tend to miss the extremely important point that before argument can meaningfully take place there must exist such an understanding. But the problem is that philosophical disagreements concern just how fundamentals are to be conceptualized or understood.[14] When new ideas are being presented in philosophy they most often involve new ways of conceiving of fundamentals, and it is just this understanding that the provider of the ideas is seeking on the part of the other.

Definitions

Definitions are another part of traditional philosophy that I'm highly suspicious of. The purpose of definitions is to clarify the meanings of terms, so definitions are only useful when the meanings of terms are unclear. In order to succeed in clarifying the meaning of a term by defining it, you have to define it in other terms whose meanings are clearer than that of the term in question. Perhaps some of the terms used in the definition must themselves be defined. The idea is, for those advocating definition as essential to philosophy, that eventually you arrive at 'primitive terms' which are not themselves in need of definition since their meanings are already sufficiently clear.

§9 So you can see e.g. the principle that change is caused as being a rule operating out there in the world, *or*, as a correct or incorrect assumption we may make, or presupposition we may have, in thinking about the world. For example, what we today believe to be incorrect assumptions of this sort underlie magic. Though we do not believe magical procedures to have their ostensibly intended influence on reality, we still refer to the basic assumptions of magic as the *principles* of magic.

In what follows, when I speak simply of principles I shall mean conceptual principles, i.e. fundamental assumptions or presuppositions intended to intellectually capture the real fundamental rules according to which reality operates; otherwise I shall use the phrase *real principles*, in which case I am referring to those fundamental rules themselves.

Here we see too that conceptual principles can differ for different intellectual enterprises—and I would say that they *must* differ for different enterprises: it is just the differences of conceptual principle that makes the enterprises different.

What categories in the mind correspond to in reality, I call *dimensions*. Categories are conceptual representations of dimensions.

So you have real principles and conceptual principles, which parallel dimensions and categories. That nothing in reality happens without a cause is possibly a real principle, its assumption is a conceptual principle, cause is a dimension, and the concept of cause a category. In the same way you could distinguish between e.g. the transcendent and the transcendental on the one hand, and the 'transcendent' and the 'transcendental' on the other, the transcendent and the transcendental potentially being aspects of reality, while the 'transcendent' and the 'transcendental' are categories we may employ in thinking about reality. In all these cases the distinction being made is between reality and thought (thought of course being conceivable as a reality in its own right).

Another terminological point: I shall here speak of some dimensions being *manifestations* of others. Thus we should here say e.g. that the dimension of *consciousness* is a particular manifestation of the dimension of *life* (the *category* of consciousness is a *sub*category of that of life), or that the dimension of *causal contiguity* is a manifestation of the more fundamental dimension of *cause*. In each case it is clear that our conceptions of the latter dimensions (i.e. our categories pertaining to them) presuppose those of the former. Note however that one ontological state's presupposing another doesn't imply that the conception of that state presuppose the conception of the other.

Paradox

A paradox is essentially a *category mistake*, i.e. the failure to use categories in accordance with the principles adopted. A category mistake more particularly consists in the simultaneous application of one or more concepts from particular categories to entities to which such application is excluded by the principles.

Different Kinds of Philosophy

Different philosophies have been labeled according to whether they are monisms, dualisms or pluralisms, where dualisms are the simplest form of pluralism. These epithets concern how many different *fundamental* dimensions there are according to the philosophy in question, i.e. how many sorts of basic category the philosophy has. One monistic philosophy, for example, would be that in which all entities were con

sidered §10 to be mental or spiritual—where nothing material is assumed to exist, or where what is called material is only a particular form of the spiritual—Berkeley's philosophy is such a monism. A common dualistic philosophy is one where there are categories for both spiritual or mental things on the one hand, and physical or material things on the other.

Greek atomism is, in a sense, a dualistic philosophy, where the basic categories are of atoms and space. (Some people have thought atomism to be an infinitely pluralistic philosophy, due to its assumption of a potentially infinite number of atoms; but a philosophy's form in this regard depends on the number of its basic categories, not on the number of entities falling under the categories.) It must be recognized, however, that in a more fundamental sense atomism is a monism, both of its categories having reference to *physical* reality. In other words, a more fundamental distinction than that between atoms and space is that between the physical and the non-physical, or between the physical and the mental or spiritual. In the context of this more fundamental categorial distinction, atomism is a physicalistic monism.

Another important distinction as regards kinds of philosophy is whether the philosophy in question is intended to involve different *levels* or not. (*All* philosophies involve different levels, though some may not be *intended* to.) Usually, it is a matter of two levels, one of which is more important than the other. Its greater importance may lie in its being necessary for the existence of the other and/or in its involving the essence of reality while the other does not.

How Many Worlds?

In what I have said to this point in speaking about reality, I have assumed that there is only one world, or one reality. There are, however, philosophies which admit the existence of more than one world (whatever this may mean)—though this is invariably admitted only when assuming the existence of only one world doesn't work. I should say that it is a basic intuition of everyone that there is but one world, and I submit that opinions to the contrary only result from the inability of a particular view to apply to that world. Furthermore, to admit the existence of more than one world is to take the same sort of stance as that of relativism, skepticism or solipsism. If, for example, you have your world and I have mine, then what is true for you needn't be true for me, and so on. To say that there is more than one world is not an acceptable way to answer a philosophical question.

Relativism, Skepticism, Solipsism

When it comes to such philosophies as relativism, skepticism and solipsism, I suggest that their advocates are missing a fundamental point, namely that it is not the task of philosophy to provide *certainty*, but to provide, as said above, a conceptual picture. The criterion of the viability of a particular philosophy or perspective is not that it provide infallible knowledge, but that it present a more comprehensive and coherent conception of the world as a whole than do other philosophies (that it 'save the phenomena')—a conception which, to a greater extent than its alternatives, agrees with our intuition(s) regarding the nature of reality.

Meta-Metaphysics

What distinguishes meta-metaphysics from metaphysics is that it is *about* metaphysics. (In fact it should be applicable to any intellectual situation.) Thus it concerns how

§11 we *think* about reality, not how reality is itself. The nature of reality itself is the concern of each of the metaphysics to which meta-metaphysics is to be applied. Where metaphysics always involves having a conception of *reality*, and thus an *ontology*, meta-metaphysics has only conceptions of *conceptions*, or conceptions of *ways of thinking*. Thus meta-metaphysics is an *epistemological* endeavor, not an *ontological* one. It's a *methodology*, one based on *reason* rather than some particular conception of the world.

Hegel's *Science of Logic* is a meta-metaphysics, and Kant's *Critique of Pure Reason* is largely meta-metaphysical; any formal logic is meta-metaphysical. In contrast, we can say that the primary philosophical contributions of major philosophers from Descartes to Kant was each to provide a *metaphysics*. As in the case of the metaphysician, it is the task of the meta-metaphysician to provide as comprehensive an account of his subject as he can, that is, to include as much as possible of conceptual reality under his view's categories in an intuitively satisfying way.

Philosophical Terminology

Before leaving the aim and method of philosophy quite generally and moving on to consider simplicity, I'd like to suggest that as regards the terms one uses in philosophy it is always best to stick to their traditional meanings whenever possible. If you feel you must coin a new term in order to express what you have to say, try to choose one that is as self-evident as to its meaning as possible. Avoid using jargon and misleading terminology, as is all too often done in philosophy, even by some great philosophers.

A word about my use of quotation marks: I use double-quotes when actually citing somebody and when referring to words, phrases, and other terms; and I use single-quotes as scare quotes and when referring to concepts and other 'mental entities.' Further, in some cases I refer to terms by putting them in italics.

Chapter 2

Simplicity

As I mentioned in the Preface, the term *simplicity* is to refer to an idea I got back in 1971. I got this idea when considering what a couple of friends had said to me, each in a separate conversation. One of them asked me whether I could *conceive* of God; and the other asked what *perception* is. The combination of these two questions led me to wonder about the difference between *perception* and *conception*, and it was then that I was struck by the idea. In the way I was thinking at the time, perceptions couldn't be distinguished from conceptions when you were actually having them. You can think of the difference between perception and conception as the difference between when you're awake and when you're dreaming. The *experience* of seeing something in your dream (conception) is, let's say, the *same* as the experience of seeing it when you're awake (perception). But at the same time there's a world of difference between the two cases. In the one perspective, what you experience exists there 'behind' your experience, and in the other it doesn't. The two situations are fundamentally different, but they present themselves as being exactly the same.[15] It was this elusive difference/identity relation that I fastened on; and with it, the notion of perspective—what exists in one perspective needn't exist in another.

Maybe I should stick in here that you're not to get hung up on, for example, whether the experience of dreaming actually is the same as the experience of being awake. That's aside from the point. What I'm trying to do is *show you a way of thinking*. So my examples are merely heuristic, intended to help you either understand simplicity or apply it—though they might also in certain cases be seen as revealing its usefulness.

Perhaps I should also mention that it is far from my purpose to attempt to support my view by citing others. When I do cite other writers it is to help you connect what I'm saying to previous thought—not to give authority to my view, but to aid in its being understood, and to provide guidelines for its potential application. The *support* for the view will come from you yourself using it and finding it fruitful.

At first I called this kind of difference "the perception/conception distinction," realizing all the while that it was much more general than to apply just to perception and conception. Later I called it "pure perception" (as it turns out, Schopenhauer uses the same term in speaking of essentially the same idea).[16] And then, almost two years after having the idea, I decided the best name for it was *simplicity*. Note that I here distinguish between the concept or idea 'simplicity,' what the concept is of—simplicity itself, and the simplicity way of thinking. However I often refer to the simplicity way of thinking itself as simplicity.

And in his *Seventh Letter*, Plato says re the Good:

> I certainly have composed no work in regard to it, nor shall I ever do so in future, for there is no way of putting it in words like other studies. Acquaintance with it must come rather after a long period of attendance on instruction in the subject itself and of close companionship, when, suddenly, like a blaze kindled by a leaping spark, it is generated in the soul and at once becomes self-sustaining.[29]

Buddhist philosophers, Kant, and Wittgenstein constantly make use of the notion of simplicity—without any of them apparently being aware that it is just simplicity in different guises they are using. As regards the Buddha, apart from simplicity constituting his absolute, virtually all of his criticisms of various philosophies depend on applications of the notion of simplicity; as regards Kant, the referents of his notions of noumenon, transcendental object, and thing in itself are simple, as are the referents of the earlier Wittgenstein's 'what we cannot speak about' and the later Wittgenstein's 'nonsense.'

The Idea of Simplicity is Paradoxical

If I were to try to define "simplicity," the first thing I should think is that it is indefinable. In fact that's not bad as a definition. You could also say that simplicity itself (rather than the word) is indescribable[30] or, more strongly, ineffable. In Kant's terms, the notion of simplicity is *problematic*:

> If the objective reality of a concept cannot be in any way known, while yet the concept contains no contradiction and also at the same time is connected with other modes of knowledge that involve given concepts which it serves to limit [sic], I entitle that concept problematic.[31]

To define "simplicity" as being indefinable is paradoxical, as is saying of simplicity that it is indescribable or ineffable. Thus we can say that the idea of simplicity, and thus simplicity itself, is paradoxical.

When I say that simplicity is indescribable or ineffable, I'm relating it to a thinking subject, to a person who is incapable of describing or understanding it. Another approach to getting a handle on simplicity is to try to characterize it in and of itself (an application of the epistemology/ontology distinction, to be taken up in Chapter 4). In that case then we might say that what is simple should be dimensionless, in the sense of "dimension" I used earlier, such that, e.g., an instantaneous point is dimensionless. This is so since, if it had any dimension, it would be complex (occupy time or space) at least to that extent.

Considering the paradoxicality of simplicity in terms of category mistake, we could say that the mistake here consists in taking simplicity to be complex (a thing or object), which one must do in order to deal with it at all. But the notion of simplicity does not lead to contradiction (does not involve the notion of nothingness)—it does not imply an *antinomy*.

We also learn here that we cannot apply the principle of non-contradiction (IX, below) to what is (problematically) conceived of as simple, i.e. conceived of as being an instance of simplicity. (I am not discarding non-contradiction, but, as will be clarified below, I am noting the limitations of its use.)

§17 The Notion of a Limit

According to Kant, as cited above, while problematic concepts contain no contradiction, they are such that the objective reality of their referents cannot be known, and they include the idea of a limit. In these regards, problematic concepts are simple. Further, with regard to the idea of a limit in particular, simplicity itself is the result of abstracting from something complex until you reach a limit. You could say that simplicity per se is *the* limiting case. For example, if you think of something such as a billiard ball, you can abstract from its color, its weight, its shape, its volume, and perhaps some other of its properties or attributes. Each step of abstraction takes you closer to simplicity—the result of each abstraction is simpler than that from which it was abstracted. When you can't abstract any further you've arrived at simplicity—and the converse also holds: when you've arrived at simplicity, you can't abstract any further.

When it comes to simplicity and the notion of a limit, it should also be pointed out that simplicity per se is to be conceived of as itself metaphysically unlimited or infinite[32]—infinite in one or more particular ways, depending on the perspective. This is so because, if it were limited it would have dimension, and thus be complex, not simple. Thus even what is relatively simple is infinite—it is infinite in those perspectives in which it is simple. But I take up relative simplicity below.

The primary sense in which the term "infinity" is used in this book is the metaphysical. Other senses include the spatial, the temporal (eternity), and the mathematical. It is by abstracting from these other senses that we obtain the metaphysical concept, which is related to each of the others as simplicity is related to complexity. It, like them, is transcendent and presupposes the transcendental.

Other metaphysical notions can similarly be constructed by abstraction, whether or not there is more than one complex instance of the notion—e.g. there can be metaphysical *size*; and "internal" and "external" can be used in the metaphysical abstract, as below. My 'logical time,' to be presented below, is metaphysical time. Aristotle's general notion of *motion* is metaphysical. In what follows I shall generally intend the metaphysical sense of such terms as "infinity" when I use them.

The Elements

In the *Theaetetus* Socrates says:

> I seem to have heard some people say that what might be called the first elements of which we and all other things consist are such that no account can be given of them. [They are simple.] Each of them just by itself can only be named; we cannot attribute to it anything further or say that it exists or does not exist, for we should at once be attaching to it existence or non-existence, whereas we ought to add nothing if we are to express just it alone. We ought not even to add "just" or "it" or "each" or "alone" or "this," or any other of a host of such terms. These terms, running loose about the place, are attached to everything, and they are distinct from the things to which they are applied. If it were possible for an element to be expressed in any formula exclusively belonging to it, no other terms ought to enter into that expression. But in fact there is no formula in which any element can be expressed; it can only be named, for a name is all there is that belongs to it. But when we come to things composed of these elements, then, just as these things are complex, so the names are combined to make a description [*logos*], a description being precisely a combination of names. Accordingly, elements are inexplicable and unknowable [simple], but they can be perceived, while complexes are knowable and explicable [complex], and you can have a true notion of them. So when a man gets hold of the [sim§18ple] true notion of something without a [complex] account, his mind does think truly of it, but he does not know it, for if one cannot give and receive an account of a

> thing, one has no knowledge of that thing. But when he has also got hold of an account, all this becomes possible to him and he is fully equipped with knowledge.[33]

From the point of view of simplicity, this must be one of the most profound things that Plato ever said. In that Socrates' elements "are inexplicable and unknowable," and we cannot say of each of them "that it exists or does not exist," they are simple. Also relevant to simplicity is Plato's/Socrates' saying that each of the elements "can only be named." (Cf. Frege: "Only what is logically complex can be defined; what is simple can only be pointed to." And Wittgenstein: "*[A] name ought really to signify a simple.*")[34]

In the *Sophist*, Plato has Socrates say:

> Do you remember then, my dear Theaetetus, our accepting a short while ago a statement that we thought satisfactory—that no account could be given of the primary [simple] things of which other [complex] things are composed, because each of them, taken just by itself, was incomposite, and that it was not correct to attribute even 'existence' to it, or to call it 'this,' on the ground that these words expressed different things that were extraneous to it, and this was the ground for making the primary thing inexplicable and unknowable? ...
>
> Then is not exactly this, and nothing else, the ground of its being simple in nature and indivisible into parts?

Simplicity is integral to Plato's whole way of thinking here. He is making a distinction between the elements, which on his view are transcendental, and what is composed of the elements: complex things, which are mundane. We can have a "true notion" (unproblematic concept) of such things: they are knowable and explicable; they are such as may or may not exist. Transcendental *elements*, on the other hand, are such that it makes no sense to speak of them as existing or not existing, for their being is a prerequisite for talk in terms of existence. In this regard they are similar to Wittgenstein's *paradigms*, which will be returned to below.

Simplicity neither a Substance nor an Attribute

When I say a particular entity or 'state' *is* simple, or *constitutes an instance* of simplicity, what I am doing is suggesting that the concept of simplicity be applicable in a particular conceptual situation. I am *not* attempting to say something factual about particular entities or states.[35] In other words, the existence and nature of the referent of "simplicity" are problematic.

If we take an instance of something's being a *substance* in the (Aristotelian) sense of being an entity that retains its identity over time, simplicity is not a substance. And, as regards the adjectival use of the notion, being simple is no more an attribute than is existing. Any and all uses of the notion of simplicity are problematic, and this problematicity may be manifest in various ways.

Not a Something, but not a Nothing Either

Since you can't describe simplicity, it can't be distinguished from nothing(ness), though it's not (intended to be) the same as nothing. It is a *tertium quid* between existence and nothingness.

Here one is reminded of Hegel's treatment of *being*. According to Hegel, being per se *is* nothing—but then Hegel identifies this nothing with the Buddhist *sunya* (void or emptiness),[36] which we should consider not to be nothing, but simple.

One is also reminded in this context of Wittgenstein's saying:

> 'But you will surely admit that there is a difference between pain-behaviour accompanied by pain and pain-behaviour without any pain?'—Admit it? What greater difference could there be?—'And yet you again and again reach the conclusion that the sensation itself is a *nothing*.'—Not at all. It is not a *something*, but not a *nothing* either! The conclusion was only that a nothing would serve just as well as a something about which nothing could be said.[37]

And we might also consider T. R. V. Murti's saying:

> It might be urged that a thing which lacks all determinations is as good as nothing; it is an abstraction empty of all content and lacks reality; the concrete alone is real. But the absolute [simplicity], on our contention, contains within itself all determinations. On this account it cannot be foreign to thought; it may even be identical with it [sic].[38]

And Emmanuel Levinas:

> Neither nothingness nor being. I sometimes use the expression: the excluded middle. You cannot say of this 'there is' which persists [simplicity] that it is an instance of being. Nor can you say that it is nothingness, even though there is no thing.

If we divide up our thinking about the world into thinking about things that exist and things that don't, and call them "somethings" and "nothings," then simplicity is neither a something nor a nothing.

Nothingness

II. THE PRINCIPLE OF THE INDISTINGUISHABILITY (EPISTEMOLOGICAL IDENTITY) OF SIMPLICITY AND NOTHINGNESS

Simplicity and nothingness are indistinguishable.

Nothingness, like simplicity, is unlimited (infinite in the negative sense: not finite). The situation here is the same as where the difference between perception and conception can't be experienced, but there's still a difference (the ontology/epistemology distinction). (This brings out the problem of the experience of the utmostly simple—since such an experience is incomparable, it could be the experience of nothing.) And where simplicity is (epistemologically) indescribable and (ontologically) dimensionless, so is nothing. Thackeray, in *Vanity Fair*, in clarifying that his notion of nothing is epistemological, not ontological, says: "The truth is, when we say of a gentleman that he lives elegantly on nothing a year, we use the word 'nothing' to signify something unknown; meaning, simply, that we don't know how the gentleman in question defrays the expenses of his establishment."[39]

Where the notion of simplicity is *paradoxical* in the sense of being the notion of neither something nor nothing, we could say that the notion of nothing or nothingness is paradoxical in being *self-contradictory* (or that its use in a judgment results in contradiction). Cf. Plato in the *Sophist*:

> So it seems to follow necessarily that to speak of what is not 'something' is to speak of no thing at all [nothing].

§20 Necessarily.

> Must we not even refuse to allow that in such a case a person is *saying* something, though he may be speaking of nothing? Must we not assert that he is not even saying anything when he sets about uttering the sounds 'a thing that is not'?
>
> That would certainly end our bewilderment. …
>
> You see the inference then. One cannot legitimately utter the words, or speak or think of that which just simply is not: it is unthinkable, not to be spoken of or uttered or expressed. [T]he nonexistent reduces even one who is refuting its claims to such straits that, as soon as he sets about doing so, he is forced to contradict himself.[40]

And Burnet: "'What is not' *is* not, that is to say it *is* just as much as 'What is'."

And where we can now distinguish the *concepts* of simplicity and nothingness, we are unable to distinguish the 'states' (or lack thereof) themselves.

III. THE (ONTOLOGICAL) PRINCIPLE OF NOTHINGNESS

Nothingness subsists.

The principle of nothingness functions in a variety of ways, including as a (methodological/epistemological) principle of reason. Or it can be expressed as an ontological principle, as above. Or it could be expressed linguistically, as the statement, 'Nothingness subsists.' (Note that the principles being presented in this book are not being *advocated*. Rather, they are being analyzed as fundamental aspects of particular ways of thinking.)

If you consider three groupings, reality, what we think about reality, and what we say about reality, principles can be expressed so as to apply to each of them. The ontology/epistemology distinction here falls between reality and what we think about reality, with the expression in terms of language being even further removed from reality than would be an expression in terms of what we think about reality (what we say not always being what we think).

Distinguishing simplicity and nothingness may be said to create complexity. Complexity presupposes nothingness as requisite for *difference*;[41] and contradiction presupposes complexity.

Complexity

Returning to the introductory examples of simplicity, we might say that where the self is simple, its various manifestations, whether they be physical or mental, are complex; where the present is simple, the past and future are, each in its own way, complex; and where causes are simple, constant conjunctions are complex. A list of further examples can be given. Thus we can say that simplicity is related to complexity as constancy is related to change; as 1 is to 2 or more (as unity is to plurality); as equality is to inequality;[42] as primary is to secondary; as intuition is to reason;[43] as being is to physicality; as being is to becoming ("[a]s being is to becoming, so is truth to belief");[44] as ontology is to epistemology; as identity is to difference (relation); as emergent is to that from which emergence occurs; as the concept of limit is to the concept of infinity; as emotion is to thought; as self is to ego; as spirit/soul is to mind; as the expression of pain is to the symbol for pain; as essence is to its manifestation; as paradigm is to criteria; as truth is to evidence; as religion is to philosophy; as spiritual is to religious; as creation is to being; as absolute is to relative; as electrostatics is to electrodynamics; as reality is to its interpretation; as text is to its

The Second Level

Analytic vs. Synthetic Simplicity

After thinking in terms of simplicity for about four years, in 1975 I hit on the distinction between analytic and synthetic simplicity. When I got the idea, I was thinking first of a situation consisting only of a simple point, the situation itself being simple, and then a situation in which there were two, unrelated points. This second situation would also be simple, as the two (simple) points could just as well be treated as one.[51] Then the thought came of there being a *relation* between the points. The new situation was not simple, but complex. But what was the relation itself? It would seem that it too should be simple. But it was simple in a different way than the points. In uniting the points and making a *thing* of them it was *synthetically* simple, while each of the points was *analytically* simple.

Where (problematic) *existence* applies to the points (in this perspective), the link between them is a *relation*. In their most rarefied form, analytic simplicity is existence and synthetic simplicity is relation.[52]

As regards the above, there need not be two analytically simple entities in order to have *complexity*, but more particularly to have *synthetic simplicity*. We are shifting this discussion to a second level. The core simplicity, complexity, nothingness level is *transcendental* with respect to the analytic/synthetic second level, which presupposes it. As expressed by Louk Fleischhacker,[53] to recognize (second-level) simplicity as analytic or synthetic is to distinguish it from (core-level) complexity as the complementary (contrary) element in which it subsists.

Where what *exists* in this perspective are the points, the relation is transcendental with respect to them. It *subsists*. But the converse can also be the case, depending on one's perspective. Thus in a different perspective it could be the *relation* that exists, while the points *subsist*.

Analytic and synthetic simplicity may in fact be seen as the first application of the simplicity/complexity distinction, analytic simplicity being a form of simplicity, and synthetic simplicity a form of complexity. Analytic simplicity is more paradoxical than synthetic simplicity, as simplicity per se is more paradoxical than complexity. With analytic and synthetic simplicity we obtain two fundamentally different ways of conceiving of a complex entity, that is, either as an analytically simple *object*, or as a synthetically simple *thing*.

Analytic simplicity is probably best exemplified by a point. It is easy to see how you can say of a point such things as that it is indescribable, that it is not a something yet not a nothing either, and that it constitutes a limit (of space). The best example of *synthetic* simplicity is the whole of something. My thinking here is along the lines of 'the whole being more than the sum of its parts,'[54] and that what this 'more' is, is simple. (It's somewhat like my earlier example of a thing's surface being simple.) A whole can also be considered indescribable, not a something (a part) yet not a nothing either, and as a limit (of its parts).[55] And though a part of something might itself normally be considered to be a thing—and thus synthetically simple—from another point of view we could say that where a *whole* is synthetically simple, its *parts* are analytically simple.[56] Synthetic simplicity is the unity of a plurality; analytic simplicity is the plurality of a unity.[57]

Francis Bacon expresses the analytic/synthetic simplicity distinction where he says:

§24 Contemplations of Nature and of bodies in their [analytic] simplicity break up the understanding and fragment it, while contemplations of Nature and of bodies in their [synthetically simple] composition and configuration

confuse and dissolve it. This is best seen in the school of Leucippus and Democritus, compared with other philosophies. For it is so taken up with the minute parts of things that it almost overlooks the structure, whereas the others so marvel at the sight of the structure of things that they fail to penetrate to the [analytic] simplicity of Nature. We ought therefore to consider and adopt each kind of contemplation in turn [sic], so that the understanding can become at once penetrating and comprehensive .

F. S. C. Northrop has also hit on the analytic/synthetic simplicity distinction. Synthetic simplicity is manifest in what he calls the *macroscopic atom*:

> This atom provides the principle of rest, the microscopic particles the principle of motion; it introduces the principle of unity, they, the principle of plurality. Likewise its shape entails the principle of necessary and fixed form, their motion the principle of variable and contingent relatedness. Thus in terms of a polar physical system we derive a metaphysics with ... more fertility in the concrete sciences, and the precision which only an analytical and pluralistic system can give. [T]he macroscopic atomic theory is a return to the pure Greek tradition. ... Its macroscopic atom stands in a logically external relationship to the microscopic atoms, and the latter in turn enjoy the same type of relationship to each other. Moreover, the microscopic atoms possess inherent motion; but it cannot occur without the macroscopic atom.[58]

You can see analytic and synthetic simplicity as being related to one another like a point and a sphere, where the point is inside the sphere. With regard to the space within the sphere, both constitute limits which themselves are not spaces. Each transcends the space in the sphere, and is simple with respect to it. (Note that here the alignment of analytic simplicity with simplicity and synthetic simplicity with complexity is manifest in what is analytically simple being simpler than what is synthetically simple.)

More generally we can say that analytic simplicity is related to synthetic simplicity as simplicity is related to complexity; as existence is to being/subsistence; as atom is to chemical element; as particle is to wave; as optics is to electrodynamics; as particular is to general; as species is to genus; as ego is to self; as self is to ego; as plurality is to unity; as change is to constancy; as intuition is to reason; as concept is to proposition; as non-self is to self; as logically proper name is to definite description; as Kant's percept is to his concept; as point of view is to perspective; as content is to form (as concrete is to formal); as quantity is to quality; as element is to set; as right hemisphere is to left; as transcendent is to immanent; as discontinuous is to continuous; as absolute is to relative; as 'for each x' is to 'for all x'; as weapon is to container; as sperm is to egg; as categories are to conceptual principles (as dimensions are to real principles); as inanimate is to animate; as the natural sciences are to the social sciences; as identity is to membership; and as necessity is to sufficiency.

As expressed by Fleischhacker in this regard, simplicity is what makes something (on the second level) either a synthetic totality (synthetically simple) or an unanalysable element (analytically simple), while *complexity* makes something conceptually analyzable, and *nothing* makes it inadequate or incomplete or empty.

Just as you can't have the notions of simplicity or complexity without the other, you can't have those of analytic or synthetic simplicity without the other. Each pair

§25 constitutes a 'dialectical opposition,' more particularly, a simplicity/complexity dualism.

The move from simplicity, complexity, and nothingness to analytic and synthetic simplicity is the move from the core simplicity categories to the second-level categories. Once analytic and synthetic simplicity are involved, the situation becomes much more complicated. It is here that truth and falsity, and necessity and sufficiency, enter the picture; and it is here that the object/thing distinction is applicable.

VI. THE (ONTOLOGICAL) ANALYTIC/SYNTHETIC SIMPLICITY EXCLUSION PRINCIPLE

An entity cannot be both analytically and synthetically simple at the same time.

If we try to characterize analytic and synthetic simplicity further, we could say that where what is analytically simple has no internal relations (since it is so small), what is synthetically simple has no *external* relations (since it is so big—in the sense of constituting the whole); and synthetic simplicity itself *is* relation. That which is analytically simple is manifest in its external relations, and that which is synthetically simple in its internal relations. It is in such relations that the relative complexity of analytic and synthetic simplicity lie. Thus we can further say, following Evandro Agazzi, that what is synthetically simple, in having internal relations, is *analytically complex*, while what is analytically simple, in having external relations, is *synthetically complex*. "An entity is genuinely *complex* if it contains components that are analytically simple but at the same time synthetically complex in such a way that their external relations coincide (at least in part) with the internal relations in which the analytical complexity of the whole consists."[59] From this we see that what is *complex* can be limited by simplicity either internally or externally. In either case, what is analytically or synthetically simple is both simple *and complex*—though *not at the same time*.

We could also say that something is synthetically simple to the extent that it *contains* its complex aspect; and that something is analytically simple to the extent that it *is contained in* its complex aspect. In at least one perspective, the complex aspect of what is analytically simple (its external relations) is precisely the whole of which it is a part,[60] while the complex aspect of what is synthetically simple consists precisely of the analytically simple elements constituting it. (From the point of view in which an entity is analytically simple, often its *content* is conceived as being essential; from one in which it is synthetically simple, its *form*—cf. Aristotle's matter and form.) In other words, analytic and synthetic simplicity constitute the *limits* of complexity, analytic simplicity *excluding* complexity, and synthetic simplicity *including* it.

Whatever is analytically or synthetically simple is *partly* simple and *partly* complex—or, better, is simple in one or more respects *and* complex in one or more respects.

Synthetic Simplicity and Infinity

The most fundamental of 'things' that can be synthetically simple are *dimensions*, which, à la Kant, are synthesized in the form of *categories*. (If we didn't think through categories, reality would present itself to us as a chaos—i.e. it *wouldn't* present itself to us.) Despite this, where relations are metaphysically finite, it would seem that each dimension—constancy, change, time, space, causality, intentionality—*and* infinity—is itself infinite in at least one respect. Though dimensions (conceptually in the form of finite *categories*) themselves are infinite, they are shaped in their manifestation partly by the presence and nature of other dimensions. §26

The asymmetry of analytic and synthetic simplicity (simplicity and complexity) leads to a similar asymmetry in the notions of what we may term analytic and synthetic infinity. Where the infinitely small (e.g. a geometrical point) can be conceived of as analytically simple, what is infinitely large (as space itself may be thought to be) cannot be conceived of as synthetically simple, since 'infinitely large' seems to lack a synthetic aspect. Nevertheless, the universe, like synthetic simplicity, has no external relations. Of course *mathematical* infinity is treated as a synthetic unit, but this is due to the nature of mathematical thinking, where everything is treated as a (finite) concept.[61]

Some of the Greeks thought that what was ultimate must be bounded (synthetically simple)—cf. Parmenides' One and Plato's Good. As Plato says in the *Parmenides*, "Further, since its parts are parts of a whole, the One, in respect of its wholeness, will be limited. For the parts are contained by the whole, and a container must be a limit."[62] On Melissus' conception of Parmenides' One, on the other hand, it is infinite (simple tout court): "For if it were two, they could not be infinite, but would be limited by one another."[63] But being one in this sense doesn't imply a unity or synthesis.

On the second level, the core notion of nothing*ness* (related to *subsistence*) is manifest as the notion of *nothing* (related to *existence*). *Nothing* here means no *object* as well as no thing, i.e. it means *no entity*.

VII. THE (ONTOLOGICAL) PRINCIPLE OF NOTHING

An entity *can* both exist and not exist at the same time.

The principle of nothingness (III) can be expressed so as to apply *from* the first level (the core) *to* the second. On the second level it takes the form of the principle of *nothing* (VII). As regards reality, the principle of nothing says that *things* and *objects* (*entities*) can both exist and not exist at the same time. As regards what we think about reality, it says that we can think of an entity as both existing and not existing at the same time. And as regards what we say, that we can say that an entity both exists and does not exist at the same time. In this last case the principle of nothing is the same as the principle of contradiction in its 'normal,' viz. linguistic, guise.

Epistemologically, this involves the simultaneous *affirmation* and *denial* that a particular concept ('existence') applies, thus involving a positive alternative and its negation.

Seen from another angle, the principle of *contradiction* is equivalent to *the principle of nothing*, saying that *nothing* both exists and does not at one and the same time. On the core simplicity level, it says that *nothingness subsists* (III), i.e. that that which is not, is.

The simultaneous application of the first-level concepts of complexity and nothingness to the same second-level thing or object is the principle of nothing in its entirety. The principle of nothing is a manifestation of the core principle of nothingness on the second simplicity level; it is self-contradictory. Taken as restricted to the second level, in one of its *epistemological* forms it says that the concepts of nothing and (complex) existence can be simultaneously applied to the same entity.

Here I should say something about the idea of participating in being. The idea comes from Plato, and it implies that you can conceive both of what exists and of

§27 what does not. Parmenides denied this.[64] Leucippus, on the other hand, claimed that the void, which is the same as non-being, exists. According to Aristotle,

> Leucippus and his associate Democritus say that the elements are the full and the empty. They call the one being and the other not-being; being is full and solid, not-being is empty and rare. And since the void exists no less than body, not-being, they say, exists no less than being [the principle of nothingness]. And these are the material causes of existing things.[65]

What you conceive of that exists 'participates in being,' while the other does not. Thinking of individual things as existing through participating in being, we can say that simplicity is *being* (transcendental), while what might *exist* is *complex* (phenomenal), and what could not exist is *nothing*.

The *contrary* of the principle of nothing, viz. *the principle of non-contradiction*, is due to Aristotle, and in its ontological form (IX) it says that one and the same thing cannot both exist and not exist (or both have and not have a particular attribute in the same respect) at one and the same time. Since when it comes to simplicity we cannot even say of it that it exists or 'participates in being,' let alone that it has or doesn't have any particular attribute, the principle cannot be applied to it.[66]

Relative to the simplicity and substance principles (the latter presented in Ch. 6), the principle of non-contradiction is complex. This is because of its fundamentally divisory nature: existence vs. non-existence (or, more universally, being vs. non-being).

VIII. THE *LINGUISTIC* PRINCIPLE OF NON-CONTRADICTION

Contradictory statements (involving complexity and negation) cannot be true of the same entity at the same time.

Here contradictory statements are understood, à la Aristotle, as being opposed in such a way as excludes any third possibility, the positive part of the opposition being an affirmation, and the negative a denial.

IX. THE *ONTOLOGICAL* PRINCIPLE OF NON-CONTRADICTION

An entity *cannot* both exist and not exist (complexity, nothingness) at the same time.

When we say that nothing doesn't exist, we're implying that nothing both is and is not something, which contravenes the principle of non-contradiction.

Calling this the principle of non-contradiction is quite misleading however, for contradiction presupposes language, and the principle does not. We might better call it the principle of existence. Note that the linguistic and ontological forms of the principle of non-contradiction are not equivalent, and that, as is implied by the ontological formulation, the principle cannot apply to change—metaphysical or otherwise; it can only deal with a static situation. The same goes for the whole of formal and mathematical logic. This rigidity is part of the formal or mathematical perspective in which set theory and symbolic logic are couched. In this regard the principle of non-contradiction may be compared with other principles, such as that of the uniformity of nature, which says that *change* follows rules.

Against the background of my suggesting above that nothingness be conceived of as *impossible*, complexity as *possible*, and simplicity as *being*, we could here on the

(transcendent, analytic). Principles, together with their categories, *constitute* perspectives. Where conceptual principles relate categories to one another, a perspective relates the conceptual principles to reality, i.e. to the *real* principles. A person's perspective is the broad conception he obtains of reality by applying particular principles. The nature of what is transcendental for a perspective is particular; but that there *be* a transcendental is universal.

This notion of perspective is similar to other notions used in philosophy, such as *paradigm* (in the Kuhnian sense) and *worldview* or *Weltanschauung* (a perspective on the world). In philosophical contexts, a perspective is a *philosophy*, which could be a metaphysics, or a meta-metaphysics.

We can also introduce here our notion of *point of view*. A point of view is the point from which a perspective is conceived. Thus we should speak of various entities *in* a (conceptual) perspective or as (conceptually) seen *from* a point of view.

Where entities constitute e.g. an analytic/synthetic opposition from one point of view, they might constitute a synthetic/analytic opposition from another.[71] A situation which is of the simplicity/complexity type can, in another perspective, be of the analytic/synthetic simplicity type. (Such different perspectives on perspectives are perspectivally incompatible.) For example, where mind may be analytically simple and body synthetically simple in one perspective, it could be the other way round in another.[72] Just as an entity can be analytically simple in one perspective while being synthetically simple in another (any perspective in which something is analytically or synthetically simple excluding any in which it is the other), it can more basically be simple in one perspective while being complex in another. Consider, for example, a person's mind. You could say that from your own point of view (in your own perspective), the minds of other people are simple. The only access you have to them (setting parapsychological considerations aside) is through people's (complex) *behavior*. Other people's minds never really appear to you, only their physical manifestations. They are simple *for you*. (This is the standpoint of black-box behaviorism.) *But from another person's point of view*, his own mind is *complex*, filled with his thoughts, feelings, and memories, all of which he has direct access to—while at the same time *your* mind is simple to him. On simplicity, this asymmetry can be seen as a result of the way we think, more particularly, of the inherent asymmetry between simplicity and complexity.

One implication of this perspectival relativity is that the principles of non-contradiction, existence, and the excluded middle (IX–XII) cannot be applied *across* perspectives, but are limited in their potential applications to *within* some perspective (at one and the same time), and then are *only* to apply to entities. Any *entity* is complex in at least one perspective (and its concept itself constitutes the formal aspect of a perspective). A paradigm, as an entity, constitutes the domain of an *exemplary* perspective. Similarly, all meaningful discussion and argument must take place within but one perspective (which, in the event that different perspectives are being discussed, should differ from them).

The notion of perspective has great repercussions for philosophy as a whole, which you'll notice once you've used it a while. What you'll then see is that philosophers are constantly arguing over what is or is not the case, when the question they really ought to be addressing is how what they are talking about is to be *conceived*; in simplicity terms, it concerns *which perspective to adopt*. The question is not as to whether there actually exists e.g. a self independent of the non-self (which we could

§31 never determine solely by reason in any case); the question is how coherently to conceive of the world as a whole as we generally experience it to be. It is only when two people agree on a common perspective that they can go on to discuss matters concerning what is or is not the case (though such questions are not philosophical anyway). I've developed the notion of perspective as regards its application to science in detail in my book *Scientific Progress*, and will develop the more general notion further in this book.

Considering the notion of perspective in connection with that of simplicity, you could say that a perspective is the (second-level) medium through which (core-level) simplicity applies to (core-level) complexity. Relative simplicity is what *limits* a perspective—and perhaps you might even say that a perspective is whatever is limited by relative simplicity (*entities* being the domains of mini-perspectives). 'Analytic simplicity,' *applied*, constitutes a perspective, as does 'synthetic simplicity,' since both have transcendental levels. Any concept constitutes a perspective when it is being applied.

From one point of view, a perspective is a way of ordering chaos into complexity using analytic and synthetic simplicity as tools. With respect to each perspective, the perspective's *principles* are synthetically simple, and together constitute its unchanging *essence*.

Comparing the core level and the second level, we could say that where 'simplicity,' 'complexity,' and 'nothingness' do not constitute perspectives, they nevertheless, by their very nature, conflict when given the same intention. We can say that, together, they are *inherently* contrary. Among other things, this means that (unlike in the case of perspectival incompatibility, to be treated below) they do not have to presuppose a common category. Nevertheless, if one had to produce such a category, it could perhaps be *'subsistence,'* or *'being'*: simplicity, complexity, and nothingness *subsist* (cf. III), i.e. they have *being* as a substrate (note that this is not an ontological claim), while the corresponding common category on the second level could be *'existence.'* On the second, analytic/synthetic level, we could then say *either* that analytic and synthetic simplicity, in application, *inherently* conflict, *or* that their conflicting presupposes their *existence*; and we could have a simplicity principle of existence: *that which is* simple, complex or nothing *exists*.

Perspectival Incompatibility

In *Scientific Progress*, perspectival incompatibility consists in the application of two concepts from the same category to the same intended domain at the same logical time. Such concepts are *contrary*, and we can say more generally that perspectival incompatibility consists in the simultaneous application of contrary concepts to the same referent/object/domain. To take a simple example, the concepts 'red' and 'blue'—both from the category 'color'—are contrary, and are perspectivally incompatible when intended to apply to the same physical thing. One and the same thing cannot be both red (all over) and blue (all over) at the same time. Similarly a particular entity cannot be both a(n analytically simple) particle and a (synthetically simple) wave at the same time. These concepts too are contrary. Note that this state of affairs does not involve contradiction. No statements are being made, let alone is anything being denied. Nevertheless only one of two contrary concepts, we might say *by definition*, can be applied to the same entity at any one time.

Here a broader view is taken with regard to both perspectives and perspectival incompatibility. Perspectival incompatibility can take various forms, inside or outside of science. What I shall try to do here is show how *all* forms stem from particular

constellations of simplicity categories. The key *categories* are simplicity, complexity and nothingness. The key category *constellations* (in the present case, *pairs*) are simplicity/nothingness, complexity/nothingness, and simplicity/complexity. A fourth constellation is manifest in second-level analytic/synthetic perspectival incompatibility, and a fifth in complexity/complexity perspectival incompatibility, where two concepts from the same category are applied to the same intended domain.

Perspectival incompatibility is a manifestation on the second simplicity level of the conflict that occurs on the core level when any two of the three core constellations are given the same intention (applied to the same intended substrate) at the same time. In each instance there is a categorial clash, which is the same thing as manifest contrariety (and paradoxicality). In the cases of simplicity/nothingness, simplicity/complexity, and complexity/nothingness you have a contravention of the difference principle of simplicity, complexity, and nothingness (V). In the case of complexity and nothingness (III), you further have contradiction; in that of analytic and synthetic simplicity, you have a contravention of the analytic/synthetic simplicity principle (VI). And in the case of a complexity/complexity clash, you have a contravention of the principle of reason that says that two concepts from the same category cannot be applied simultaneously to the whole of the same thing. Thus we have five category constellations stemming from simplicity's core, and exclusion principles (IV and VI) determining relations between the first four, thereby contributing to defining the simplicity way of thinking. So on simplicity, contradiction is one of five basic forms of conceptual conflict, the other four being simplicity/nothingness, simplicity/complexity, and, further from the core, analytic/synthetic simplicity, and, further still, complexity/complexity.

Second-level forms of categorial conflict other than that between analytic and synthetic simplicity, which may be considered instances of *perspectival incompatibility*, require a substrate. Such a substrate may be seen as a common *dimension* (domain) for conflicting perspectives. To be perspectivally incompatible, at least some of the respective perspectives' *categories* must be contrary, or give differing values to the same magnitude. In both cases we have a complexity/complexity conflict.

We might also point out here that, when two concepts are considered to be of the same category, then the fact that they are so is the result of a conceptual principle. This progression takes you from more central to less central principles.

The avoidance of perspectival incompatibility requires that the relevant concepts *not be applied at the same logical time*, or, in other words, that they not be applied *in the same perspective*. This gives perspectivism its *discrete* (analytic) aspect. Paradox can here be understood as a problem that arises when this discreteness is ignored.

Here taking *entities* to be either *things* or *objects*, on the second level the simplicity, complexity, nothingness principle takes the following form:

XIII. THE (ONTOLOGICAL) EXCLUSION PRINCIPLE OF BEING SIMPLE, COMPLEX OR NOTHING

An entity cannot be simple and complex, simple and nothing, or complex and nothing in the same perspective.

§33 While in one and the same perspective the (ontological) 'states' of simplicity, complexity, and nothingness exclude one another, the (epistemological) concepts of simplicity, complexity, and nothingness *presuppose* one another. In the same way, the notions of analytic and synthetic simplicity presuppose one another. (Just as the

notion of a part presupposes that of a whole, the notion of a whole presupposes that of a part—though the *existence* of a part does not presuppose the existence of the whole.)

We should say that incompatible perspectives, while they have the *same domain* (or overlapping domains), cannot apply to that domain logically simultaneously, due to their conceiving of it in mutually exclusive ways. So what is complex in one respect is analytically or synthetically simple in another.

Applying our form of perspectivism to simplicity itself, we should say that in a perspective in which *only* the notions of simplicity and complexity are being applied (and *not* those of analytic or synthetic simplicity), nothing can be both simple and complex.

To be *complex*, an entity must only be *either* analytically *or* synthetically simple. Thus a point would be complex (due to its external relations), but it would be an object, not a thing. All things are complex; but each is also synthetically simple, in that it constitutes a whole.

From one point of view you could see analytic and synthetic simplicity as something we thinking beings add to reality. Reality is chaotic, consisting of a number of unrelated analytically simple entities (e.g. pre-empirical reality in Kant's 'intuition'), and, by conceiving of it (as in Kant's 'understanding'), we make it synthetically simple.

The *paradigms* of difference within a category are the differences between the concepts of simplicity and complexity, and between those of analytic and synthetic simplicity (in that order). This leads to an interesting progression where you move from analytic and synthetic simplicity as each constituting distinct categories and conflicting due to their inherent natures, to their being opposite extremes on a continuum (*in* a category).

In any case, taking these notions as affording paradigms of perspectival incompatibility, we are led to say that as regards *any* category, no two of its forms can be applied to one and the same entity at the same time. The attempt to do so constitutes an instance of perspectival incompatibility, just as does applying the concepts of analytic and synthetic simplicity to the same entity at the same time.

As implied by the foregoing, what is analytically simple in one perspective can be synthetically simple in another. And what is analytically simple in that perspective can be synthetically simple in yet another. Atoms that are analytically simple in the perspective of statistical thermodynamics become synthetically simple in the perspective of atomic physics, while subatomic particles which are analytically simple in the perspective of atomic physics become synthetically simple in the perspective of subatomic physics. Similarly in biology: genes, chromosomes, cells, organs, organisms, and populations are conceptually organized in this way. Here we have *pair-orderings* of ontological levels (and potential perspectives) extended into analytic/synthetic *simplicity ladders*.

Each perspective consists of (at least) two levels. A perspective may consist of a simple level and a complex level, either of which may be the more central. In Plato's philosophy, the simple world of Forms is central, while complex phenomena are secondary. For Kant, the synthesizing function of the mind is central, while for the early Wittgenstein what is key is the analytic object, and for the later it is the synthesizing function of language. The later Wittgenstein's sense/nonsense line is, from the point of view of simplicity, Kant's phenomenon/noumenon line. So you could say that Plato's philosophy is a dualism of the simplicity/complexity type, while Kant's and Wittgenstein's are of the complexity/simplicity type.

If there are an analytic level and a synthetic level, the synthetic level is transcenden*tal* and the analytic transcen*dent*.

Absolute vs. Relative Simplicity, Complexity, and Nothingness

If *x* is nothing, simple, or complex in (with respect to) *any/every* perspective, it is said to be *absolutely* nothing, simple or complex. We may thus say that *x* is *absolutely simple* if, and only if, *x* is not nothing nor complex (nor chaotic: see below) in any perspective. That which is simple in every perspective (from every point of view) is that on which there is no perspective, and is the limit of limits of perspectives. This 'state' of absolute simplicity we shall also call *God*.

We have an expression of the conception of absolute simplicity in Nicolas of Cusa:

> So every entity participates in being. When one abstracts from the participation of entities, that most simple being remains which is the essence of everything. And we do not conceive this being other than in an attitude of learned ignorance, for by leaving out every participant in being, nothing seems to remain. And it is therefore that the great Dionysius says that knowledge of God approaches rather 'nothing than something.' Sacred ignorance, however, instructs me that what seems nothing to the intellect is the ununderstandable supreme.[73]

And we have it in Chuang Tzu:

> His viewpoint is one at which this and that, yes and no, appear still in a state of non-distinction. This point is the Pivot of the Law [Tao]; it is the motionless centre of a circumference on the rim of which all contingencies, distinctions and individualities revolve; and from it only infinity is to be seen, which is neither this nor that, nor yes nor no. To see all in the yet undifferentiated primordial unity [sic], or from such a distance that all melts into one, this is true intelligence.

We also have it in Kant:

> [T]he existence of the absolutely simple cannot be established by any experience or perception, either outer or inner; and … the absolutely simple is therefore a mere idea, the objective reality of which can never be shown in any possible experience, and which, as being without an object, has no application in the explanation of the appearances. … And since by the world of sense we must mean the sum of all possible experiences, it follows that nothing [absolutely] simple is to be found anywhere in it.[74]

Since God's essence and existence are identical, his form cannot be a principle of limitation. He must be absolutely simple, for given the identity of His essence and existence, His qualities must be coinherent through the whole range of His activity.

The identity of simplicity and infinity per se implies the identity of absolute simplicity and absolute infinity, both of which are thus also identified with God. Granting that God's internal relations are unknowable, and that He has no external relations, He should also be both absolutely analytically and absolutely synthetically simple.

§35 Where God is simple in all perspectives, we can also imagine what might be complex in all perspectives, or nothing in all perspectives, as well as what might be simple, complex or nothing in *no* perspective. If an entity is simple, complex or nothing not in all perspectives but in at least one, it is *relatively* simple, complex or nothing. And, similarly, we can have absolute or relative *analytic* and *synthetic* simplicity.

§37meta-metaphysics qua meta-metaphysics, the simplicity way of thinking is a conceptual or mental monism, in the sense that it does not go beyond thought in either its make-up or its intended domain of application. It is not a monism in the same sense as most metaphysical monisms, however, in that it does not deny the existence (or subsistence) of that which lies outside its scope. Thus where Berkeley's monism, for example, claims that nothing exists that is non-spiritual, simplicity takes no stance on such matters.

The Necessity of Philosophical Problems

What are some of the implications of the simplicity way of thinking? One is that our thinking generally is essentially paradoxical.[75] And this itself is paradoxical, if you take understanding to be the removal of what appears paradoxical from what is to be understood. I'd say that the paradoxical can never be completely removed, and that what we do in understanding something is either conceptually move the paradox to a different level, or recognize its position in the situation in question.

Philosophical problems are problems having to do with concept formation/formulation, which is not to say that they're merely linguistic. I should say that such problems can be neither solved nor dissolved, but only *re*solved, so long as we conceive of reality in the particular way that we do. That there is a philosophical problem is a result of the way we *think*. But I hasten to add that each such problem has a backside which performs a positive function in our thinking. When I categorially distinguish the mind from the brain, I can begin to wonder how two such different entities can possibly interact; but at the same time I put myself in the position of being able to explain why a particular human body behaves in ways one would not expect of a mindless physical substance. That very aspect of certain sorts of situation which makes the situation problematic in one perspective gives it its explanatory power in another. Explanation requires taking a transcendental step, such a step involving a move between incommensurable levels.

Simplicity is a Principle of Principles

If in a particular perspective body is conceived as simple while mind is conceived as complex, then their being related in this way is a *principle* of the perspective, and in being such, at least partially characterizes the perspective.[76] Since such a principle relates simplicity categories to ontological categories, it may be termed a *correspondence* principle (not to be confused with other kinds of correspondence principle), and, as such, is itself an implicit principle of reason. (Note that once you begin adopting conceptual principles, you can no longer say that anything is possible. Conceptual principles set epistemological constraints on possibility.) In this way, simplicity is the expression of a principle of reason. It is a principle (which can be broken down into sub-principles) determining possible ways of thinking.

Simplicity is to apply to any perspective, and is on a higher level than are the various systems that propose principles for reality. It involves (sub-)principles for *thinking about* reality, no matter which dimensions you assume the particular aspect of reality being investigated to consist of, or which principles you take it to operate according to. Furthermore, simplicity does not decree what the dimensions or principles of a particular perspective are to be in any one case—it investigates the situation to determine what they *latently* are. But much can be learned in this way, and ideas may be sparked for the creation of new metaphysics and ultimately new sciences.

The principles binding a perspective's categories in a particular way are transcendental with respect to the perspective. Principles are not something *within* the perspective they constitute (though they *are* immanent to it), and cannot be expressed in

that perspective (cf. Gödel's results, below). Without transcendental principles, the perspective would not be a perspective, but only a bunch of categories, just as for Hume, without a transcendental 'bundle,' there would be no (synthetic) self, just so many (analytic) perceptions.

While each ontological perspective (metaphysics) in philosophy should differ from all others through the uniqueness of its set of principles, it is to be the same as all others in its choice of principles of reason. If the principles of reason employed in two metaphysics differ, there is bound to be a talking at cross purposes. Another way of saying this is that philosophical discourse presupposes *reason* as a common logic.[77] Reason can be refined in various ways, one of which is formal logic, and another of which is simplicity.

Note from my examples that using simplicity is not a matter of finding a true description of how we *actually* conceive of reality, or of determining how we *ought* to conceive of reality. Rather, it is a way of investigating and throwing light on why various *possible* ways of thinking about reality give rise to the sorts of intellectual problems they do, or afford the kinds of solutions they afford. In this way simplicity should show not only how a wide variety of conceptual problems have the same form, but that some such problems are unavoidable if we are going to think of reality in anything of a sophisticated way at all.

Simplicity and Formal Logic

In certain respects simplicity is like formal logic, and in others, it differs. Both simplicity and formal logic present what are to be *principles of reasoning* in philosophy and elsewhere. Thus simplicity and formal logic, like e.g. Hegel's *Science of Logic*,[78] are each intended to apply no matter what you are reasoning about, and independently of whatever your metaphysics might be.[79] In this regard simplicity, like formal logic, *is* a logic, i.e. a particular refinement of reason. It is an *alternative* to formal logic: rather than be a *binary* system, it is *ternary* (which is not to say that it's 'many-valued'). And, like reason, intuition, and formal logic, it is meta-metaphysical.

Principles of reason can be seen to function in various ways. They may be thought, à la Boole in the case of formal logic, to provide the actual structure of reason;[80] or they may be thought to constitute a form of reasoning which should be emulated. Or they may be part of a *theory* intended to *account* for how reason actually functions. Or they may be thought to be completely abstract conceptual structures, with no intended referent.

Mathematical logic can be seen as being captured on this last depiction, i.e. that of being, like mathematics, developed for its own sake, independently of whatever concrete application it may or may not have. It is meta-mathematical rather than meta-metaphysical. As a branch of mathematics, mathematical logic has produced results of great importance for mathematics itself, and thus of interest to philosophy, as will be taken up later.

Simplicity is basically intended as a *tool* to be used in the analysis of conceptual situations. But it may also be seen as a *philosophical theory*, intended to *reveal the essences* of those situations. In this way simplicity, unlike formal logic, not only *orders our thoughts*, but attempts to *explain* them. And its success in so doing could lead to its functioning as an ideal or *paradigm* for how reason *ought* to operate in such situations. **§39**

Formal logic is to be used, for example, in the analysis of *arguments*, with the intention that it function as an ideal for how reason *should* operate *so as to preserve truth*. It tries to provide *rules of correct reasoning*, rules based on its own structure (syntax). Here formal logic differs from simplicity, which, through revealing *potential conceptual essences of situations involving reason*, tries to provide insight regarding the way we actually and potentially think. Simplicity offers *guidelines* for the analysis of perspectives and conceptually problematic situations.

As I mentioned earlier, while the raison d'être of formal logic was that it should function as an aid in philosophical reasoning, it has never done so. There are a number of reasons for this. Most important is its inability to capture the process of philosophical reasoning itself. Further, the very creation of a formal logical system involves the making of assumptions which themselves are or can be philosophically moot, and which in some cases logicians themselves cannot agree on. Though the construction of formal systems can lead to the raising of interesting questions as to what position is to be adopted concerning certain fundamentals, formal logic just gets in the way when it comes to *dealing* with fundamentals. Where formal logic is (intended to be) mechanical, simplicity is dynamic. The reason that simplicity doesn't get in the way is because it's out after understanding, not truth, and has room for various understandings.

How to Use Simplicity

So, after this introduction of a number of abstract concepts, and the attempt to give some clarity to them and the relations among them, we can move on to how they are to be used. As suggested near the beginning of this chapter, the idea is that their use is to provide a better understanding of various potential ways of conceiving of reality, each of which constitutes a philosophical problem or perspective. By showing how the ontological categories in terms of which we conceive of reality can be organized in accordance with the categories and principles of simplicity, insight may be gained regarding how we think, showing just why we ask the sorts of questions we do, as well as why we can sometimes expect answers, and sometimes not.

Since the notion of simplicity is paradoxical, the employment of the simplicity way of thinking in any particular situation implies that there exist a similar paradoxicality in that situation. And since this way of thinking is to have widespread application, this leads to the conclusion that there must be a good deal of simplicity-type paradoxicality out there in the world—or at least in the world of our thinking. This I believe to be the case, and intend to show to be the case in this book.

Often, as in considering Plato's, Kant's and Wittgenstein's philosophies above, and in the lists exemplifying the relations between simplicity and complexity and analytic and synthetic simplicity, particular simplicity concepts may in the first instance align with particular concepts in the situation being considered. At other times a simplicity analysis may be required. In such a case, apart from the notion of perspective, the simplicity notions are to be *juggled about*, normally only two being in one's hands at the same time. The idea is that the simplicity concepts are to function as conceptual paradigms, to which notions in the context being investigated are to gravitate. As Fleischhacker says with regard to analytic and synthetic simplicity for example, "they are not *kinds* of simplicity—they are *ways of conceiving* of the complex as simple."

What the employment of simplicity affords, in the best of cases, is a *resolution* of the conceptual difficulty, or a *clarification* of the point(s) of view being applied. That is to say, it is not intended to *solve* (or *dissolve*) conceptual problems, but to bring them into clear focus, and thereby allow you to see *why* the particular problem being considered is a problem, and just *how* it is a problem, as a result of the way its vari-

ous conceptual aspects are related. In other words, simplicity is intended to provide a deeper understanding of philosophically interesting situations and points of view than can be gained without it.

It might also be pointed out here that simplicity need not be *exactly* applicable in order to be applicable at all. What is key is that the *essence* of the simplicity notions be present in the situation, as we intuitively take that essence to be. In other words, in applying simplicity, we employ what I have elsewhere called *paradigm-thinking*—a topic I shall return to.[81]

Prior to actually applying simplicity, if you are considering, say, the nature of a particular perspective, you should first decide whether to treat it as a monism, or as a dualism or some other form of pluralism. In other words, you should decide whether the perspective, in its first (and perhaps only) analysis, is to be taken as having one, or two or more, most basic categories, and what those categories are and how they are related. Different philosophies' (metaphysics') cores may be occupied by but one fundamental category (e.g. 'the physical' or 'the spiritual'), in which case they are monisms, or, actually, dualisms of the complexity/nothingness type. Monisms and dualisms are perspectives. Each perspective may be seen as being such that its basic ontological categories are related to one another as are simplicity and nothingness, simplicity and complexity, complexity and nothingness, analytic and synthetic simplicity, or different forms of complexity.

Each constellation that is sufficiently applicable (according to your intuition) constitutes a potential meta-metaphysical position with regard to the problem or perspective in question. In an analysis of a problem-situation, the simplicity categories are to be applied to the relevant ontological categories; and when a particular perspective is being analyzed, the simplicity categories are to be applied to the categories *as* (perhaps implicitly) *defined by* the particular principles of the perspective.

What varies between perspectives are the ontological principles, while what is constant are the principles of reason, i.e., in this case, common sense and the simplicity principles. But in the case of the simplicity principles, the constellation of simplicity categories applied to the subject matter, and the way they are applied, may well vary from case to case. This is key to the simplicity form of perspectivism: that the nature of the perspective is determined both by the relations among the ontological categories it contains, and by the simplicity categories these ontological categories can be taken to express. *This* is the link (correspondence) between the refined, simplicity principles of reason and the ontological principles.

If for example 'constancy' and 'change' are taken as the two most basic ontological categories in a particular philosophy, then you could try seeing the referent(s) of 'constancy' as complex and that (those) of 'change' as nothing, and then vice versa. This would mean that on the one application there is no constancy, only (complex) change—a view that has been (incorrectly) attributed to Heraclitus—and on the other, the opposite.[82] So you could say that the application of the complexity/nothingness distinction in the case of a dualism, since half of the dualism

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becomes nothing, makes the whole a monism. And the same can be said of the simplicity/nothingness constellation, for the same reason.

If you put 'simplicity' in place of 'nothingness,' and apply this constellation to the situation, you get that constancy is simple relative to complex change, and vice versa. And, further from the core, applying the analytic/synthetic distinction you get of course that what is constant is analytically simple while what changes is synthetically

simple, and vice versa. Most often 'analytic simplicity,' since it is derived from 'simplicity,' will apply more naturally to the side of the dichotomy to which 'simplicity' better applies, and 'synthetic simplicity' will similarly apply more naturally to the side to which 'complexity' better applies. Another possibility is to conceive of constancy and change as *both* complex, but complex in different ways, such that the complexity of constancy excludes that of change and vice versa.

Here the sorts of features of the situation which determine how well various simplicity categories might apply include, for example, whether the ontological categories in question presuppose each other—which is determined by the ontological conceptual principles held by the philosopher being analyzed, or, in the case of a problem-situation, by the analyst—in which case the analytic/synthetic simplicity distinction might apply naturally to them.

The idea then is that you cogitate on these alternatives, and see if certain of them intuitively seem more right than others. You may find, for example, that one of them can function so as to reveal what appears to be the essence of a particular well known philosophical problem. Or two such constellations may represent two conflicting perspectives on the same subject matter, and show how they differ in the conceptions they provide.

The example of constancy and change consists of two fundamental ontological dimensions. But the dimensions involved in such an analysis need not be particularly fundamental at all; what is required is that they be fundamental *with respect to a particular problem situation*. For example, mind and body are analyzed in Chapter 6 in the same way as constancy and change are here. The idea in both cases is that, given simplicity, this operation will provide fundamental insight into the nature of the problem, thereby *re*solving it.

But what about a situation in which there are not only two, but three or more ontological categories? What if you want to investigate the relations among the categories of time, space, substance, and cause? Then what you might do is try all possible combinations of the simplicity categories to see what you come up with. In practice, though, what happens is that the more 'natural' combinations spring to mind first. Certain combinations (applied constellations) will seem intuitively more suitable than others.

Relative perspective types can only be determined one simplicity constellation at a time. If we begin, say, by applying the 'simplicity' and 'nothingness' categories of reason to ontological categories in a particular perspective or problem-situation, this excludes applying other of the simplicity categories to the same entities at the same time.

Here we have the simplicity 'hierarchy,' with absolute simplicity at the top, and beneath it the successively more refined simplicity categories that can be applied to the perspective. And these merge into the categories of everyday thought (common sense).

Certain categories may be contrary or in a dialectical opposition, in which case they may or may not presuppose one another.

§45 *Contrary ontological and simplicity categories, and principles in which they figure*

constancy/change: an entity cannot both change and not-change at the same time (in the same perspective)
substance (simplicity)/nothing: a thing cannot both exist and not exist at the same time – nothingness, contradiction
simplicity/complexity/nothingness: an entity cannot be both simple and complex, or simple and nothing, or complex and nothing at the same time
analytic/synthetic: an entity cannot be both analytically and synthetically simple at the same time
life/physicality: an entity cannot be both alive and not-alive at the same time
mind/body: a body cannot be moved by non-physical causes

Conjugate categories (categories whose values cannot be completely specified simultaneously according to QM)

position/velocity
position/momentum
velocity/momentum
time/energy

One difference between conjugate and *contrary* categories is that where being conjugate is an epistemological matter, being contrary is an ontological one. Ontologically, a particle *can* have both a position and a momentum at one time, but, still ontologically, it *cannot* be both a particle and a wave at the same time.

Potentially complementary ontological categories

substance
space
time
causality
self-consciousness (a state of mind)
the unconscious (a 'part' of mind)

It may be suggested that almost all major philosophers *are* major because they made interesting and potentially correct attempts to characterize these complementary categories, i.e. to produce conceptual principles linking them. We could say that they each added a *special* category with a particular angle, which specified the complementary categories in a unique way, given the preconditions set by the basic categories. It is the determination of the special categories that creates perspectives.

Special categories/principles of substance

God (Spinoza)
the physical (Ionians, modern science)
the formal (Pythagoras, Plato)
life (Aristotle)
mind/spirit (German idealists)
intention (phenomenalists)

§46 self-consciousness (existentialists) (?)

the unconscious (Freud and Jung)
the paranormal (parapsychology)

We see in the case of special categories that they each specify the substance in a different and exclusive way: under particular conditions they are perspectivally incompatible. Each of these specifications constitutes a *principle* at the core of each of the various interpretations of reality.

Apart from ontological categories, there are also epistemological categories, as well as methodological ones, methodological categories' constituting a particular kind of epistemological category.

Epistemological categories
intuition – simplicity
reason – complexity
knowledge (truth, falsity, probability, chance) – simplicity and complexity
understanding – synthetic simplicity
quantity (finitude; infinity) – complexity
quality – simplicity
number – complexity
measurement – complexity

While we are here talking about *categories*, it should be possible to construct similar lists of examples of types of relation between less fundamental concepts.

Besides ontological and epistemological categories, which are applied to reality, we also have *categories of reason*, which are applied to how we *think* about reality. Every meta-metaphysics, like every metaphysics, accepts reason (common sense) and intuition; the *difference* between different meta-metaphysics consists in the particular *refined* principles of reason they adopt. But where the refined principles of formal logic are based on the binary principle of non-contradiction, the refined principles as they take their expression in simplicity are based on a *tripartite* division.

The following is the list of categories of reason for simplicity as it is being advanced in this book.

(Epistemological) simplicity categories
simplicity
complexity
nothingness
chaos
perspective
analytic/synthetic

Given an intuitive understanding of the ontological categories being analyzed, the application of simplicity categories sharpens their differences.

(Epistemological) categories of formal logic
assertion
denial

truth
falsity
deductive inference (modus ponens)
non-contradiction

Simplicity categories that may presuppose other simplicity categories, depending on the perspective
simplicity: nothing and complexity
nothing: complexity
the analytic/synthetic distinction: the simplicity/complexity/nothingness distinction

Ontological, moral, and simplicity categories that may presuppose one another, depending on the perspective
constancy and change (as in the case of the employment of the category of uniformity; *pace* Parmenides and Heraclitus)[84]
space and time
particularity/plurality and unity
good and evil
right and duty
simplicity and complexity
complexity and nothing

Principles

Note that metaphysical thought is essentially the determination of what to accept as the relations between one's categories, i.e. which (conceptual) principles to adopt in one's perspective. Should we take it as a principle that without time there is no space? Which of the relations suggested above would we accept for our metaphysics, which not, and why? Answers can be given to all of these questions by applying the simplicity way of thinking.

Like categories, conceptual principles may be classed according to whether they are ontological, epistemological or, if epistemological, more particularly methodological.

Ontological (conceptual) principles
God exists.
Time is eternal.
Reality consists of atoms.
Something is constant (substance; simplicity).
There is order in change (uniformity).
Change is caused (causality).

Epistemological principles
Things in themselves are noumenal.
Objective knowledge presupposes measurement.
The basic units of information are sense-data.

§48*Methodological principles*
Empirical knowledge is obtained directly via sense-data.
Accept only the results of measurement as empirical data.
Think in terms of simplicity.

Conceptual principles may also be classed according to whether they are principles of reason.

Principles of reason (epistemological)
The principle of non-contradiction
The principle of induction
The various simplicity principles

The trick in philosophy is to provide a *coherent* picture encompassing the greatest part of reality as we intuitively take it to be. (Of course how we intuitively take reality to be is also informed by the categorial system with which we have grown up.) One may want to say, for example, that there are *two* substances: the mental and the physical. This makes things more complicated than admitting only one substance, and for that reason perhaps less appealing. One of the greatest problems of modern philosophy, which accepts that there are these two substances, concerns how they can interact, since the causes that operate on each of them are not such as should have an effect on the other.

(Ontological) perspective-defining principles
Change is completely ordered (determinism).
Substance is physical.
Cause is physical and contiguous.
There is God (Spinoza).
Substance is formal (Pythagoras, Plato).
Mind and body do/don't interact.

*Metaphysical perspectives (*potential *sciences)*
Pythagoreanism
atomism
Plato's philosophy
Aristotle's philosophy
modern science

The fundamental principle of both the Pythagoreans' and Plato's philosophies (perspectives) is that substance is formal. For atomism it is that there are two substances (which do not interact), matter and space; for Aristotle it is that change is organic. For modern science it is essentially the same as for atomism.

The application of the *simplicity* categories to ontological categories in a particular perspective determines in the simplicity paradigm that perspective's principles of reason, but not its ontological conceptual principles, which are taken as given.

Chapter 4

§49Ontology vs. Epistemology

Ontology is the study of the nature of what exists, or the study of being. In this way it is a philosophical discipline. But the term is also often used to refer to a particular philosopher's conception of being, so that you can speak, for example, of Kant's ontology—the kinds of thing that exist or can exist according to Kant's metaphysics. Kant's ontology consists of entities of two sorts, complex phenomena and simple things in themselves. Usually the context in which the term is used makes the sense intended clear.

Epistemology is usually taken to be the same as theory of knowledge, where once again you can mean either a philosophical discipline or some particular philosopher's conception of knowledge. So ontology has to do with the nature of what exists; and epistemology has to do with what can be known (about what exists), and how it can be known.

There is another aspect to epistemology, however, which has been missed by almost all philosophers up to the present time. And the recognition of this other aspect is very important to simplicity. This other aspect is *understanding*. So, epistemology should best be thought of as having two aspects, one having to do with (analytically simple) knowledge and the other with (synthetically simple) understanding. Perhaps you could speak of theory of understanding in contrast to theory of knowledge. This distinction is the topic of the next chapter.

Note that in drawing a distinction between ontology and epistemology we are already taking a philosophical stance. We, as philosophers, are admitting the notions of ontology and epistemology as categories in our thinking (categories of reason). Questions of existence and questions of knowledge are thus separate questions—which is not to say that they cannot be connected. So, for example, when I say my desk exists, and I know my desk exists, I'm saying different things.

The question of what categories you adopt as a philosopher in contemplating reality is exceedingly important, for this is a major part of what determines what will or will not constitute a philosophical problem for you. This is a point missed by many if not most philosophers. The ontological categories you adopt set bounds on the sorts of concept you can use in your thinking, and philosophical problems are problems that arise given that way of thinking. That there is considered to be a philosophical problem concerning how people's bodies and minds interrelate is dependent on how we think—and more particularly on our seeing bodies and minds as being categorially different entities—just as much as it is on the nature of reality. Reality doesn't dictate a metaphysics, or there would be only one metaphysics, as there is only one reality.

uses the term *transcendental* where we should suggest he better use the term *transcendent*.) And for him (as well as for me) the transcendental consists of principles, in the sense in which I explicated this term in Chapter 1. Kant's main example is what he considers to be the principle of causality, though what he takes to be causality is actually the uniformity of nature. He means that this principle must be presupposed in order for us to experience the world in the way that we do. We could say, though Kant doesn't, that if we presupposed some principle other than what he calls the principle of causality, we might still have experiences, but they would be of a fundamentally different nature from those had presupposing the principle. Or, you could say, what we would then mean by "experience" would be completely different.

You can also use the analytic/synthetic simplicity, transcendent/transcendental distinction in the case of two conceptions of metaphysics, the naïve, empiricist conception, according to which metaphysics concerns the inaccessible behind phenomena, and the more sophisticated Aristotelian conception, in which metaphysics concerns fundamental principles. This same distinction is manifest in modern science between scientific theories and scientific principles.[90]

Perhaps it should also be pointed out here, while talking about the transcendent and the transcendental, that the transcendental is also transcendent, in that it lies beyond what can be handled from within the realm with respect to which it is transcendental.

But both the notion of the transcendent and of the transcendental can be taken to be more general than Kant takes them to be. The transcendent needn't be just what transcends experience, but, as I mentioned above, can be what transcends any particular realm. And the same goes for the transcendental—it needn't only consist of the presuppositions of experience, but could be what must be presupposed by any particular sphere of existence. You can speak of the transcendental aspect of the subject matter of a scientific discipline for example. Even concepts have a transcendental aspect, which can take a number of forms. It can consist of presuppositions regarding the reality being investigated (ontological principles), or it can concern the method of the investigation (methodological principles, principles of reason), or its results (criteria of adequacy). And in a more general philosophical context you can speak of the transcendental as what must be presupposed in order for any particular perspective to be a perspective on something. (This is part of my explication of the notion of perspective.)

To return to the analytic/synthetic simplicity distinction and its application to the distinction between the transcendent and the transcendental: From an ontological point of view we can say that the transcendental, in the form of principles, permeates reality. In one perspective you can see principles as *being* reality, while physical entities and everything else, if there is anything else, are but *manifestations* of reality, or exist *in* reality. (Note the distinction between being and existence.) Principles are then sufficient for reality, and constitute its whole, à la rationalism.

From an epistemological point of view, we can say that the transcendental provides the synthesis of reason necessary for thinking of a particular type of subject matter *as* a particular type of subject matter. (Cf. Gödel again.) This involves categories and conceptual principles.

The distinction between categories and dimensions on the one hand, and conceptual principles and real principles on the other, is a manifestation of the distinction **§53** between analytic and synthetic simplicity. Categories are analytically simple

entities related by synthetically simple conceptual principles; dimensions are analytically simple entities related by synthetically simple real principles.

For example, as noted in Chapter 1, the subject matter of modern science is physical reality. Modern science conceives of reality in terms of particular categories refined in particular ways. In *The Metaphysics of Science* I present the *categories* of modern science as being those of space, time, substance (matter/energy) and causality (physically conceived), and its conceptual *principles* as being to the effect that the dimensions of space, time, substance and causality are interrelated in a particular way. So where the categories are concepts each of which represents one of reality's assumed fundamental properties (dimensions), the conceptual principles say that in reality those properties have a certain relation. It is the conceptual principles' organizing the categories that provides the synthesizing function of reason on the epistemological level. And this conception is presupposed in all thinking in the subject-area—it provides a filter through which all scientific thought must pass. So where real principles are taken to be transcendental with respect to reality, conceptual principles are transcendental with respect to our *conception* of reality. Thus, on the simplicity way of thinking, both real principles and conceptual principles may be seen as being synthetically simple.

As said, where the transcendental permeates an area of inquiry—is immanent to it and unifies it through the synthesizing function of its conceptual principles—the transcendent is what limits that area of inquiry, or what lies beyond it. Some particular entity may be either epistemologically and/or ontologically transcendent to knowledge or to understanding. Whether an entity is transcendent, and the way in which it is transcendent, depend on one's perspective (a further explication of the notion of perspective). The interesting case is where the entity in question is transcendent to knowledge but not to understanding. This happens in scientific theorizing—as I show in detail in *The Metaphysics of Science*. The notion of analytic simplicity applies here in that a limit always has fewer dimensions than what it limits. Conceptually, with respect to what it limits, a limit constitutes a step towards what would ultimately be a metaphysical point. Any limit may be seen as being simple or analytically simple with respect to what it limits.

Note how the notion of categories comes in here. There is a categorial difference between a particular subject matter and what is transcendental with respect to it, and there is likewise a categorial difference between the subject matter and what transcends it. So we have three categories, which are conceptual manifestations of synthetic simplicity (the transcendental), complexity (the mundane, phenomenal), and analytic simplicity (the transcendent).

Quite generally, we can think of the subject matter being considered, or the domain of a perspective, as consisting of the realm of the observable (e.g. phenomena), or a particular language, or facts of a certain kind, or the domain of a scientific theory—each of these constitutes a realm populated by (complex) entities of a particular sort or sorts. Within each of these realms statements may be made that are true or false, perhaps objective or not objective, or interesting or not interesting. But each realm is categorially circumscribed, and, once you transcend the limit of the realm, what before was true or false may no longer make any sense at all. You no longer have to do with entities as they are conceived within the realm, and to treat them as such only **§54** leads to confusion. (It is for this reason that, for example, you cannot adequately express a perspective's principles from within the perspective—cf. Gödel.)

Here I would like to add, apropos of what I said in Chapter 2 (and have alluded to at points in this chapter), something about inherently problematic aspects of thought.

The transcendental perhaps constitutes a paradigm of what I mean. The transcendental is necessarily problematic in being synthetically simple. But, as implied earlier, I would maintain that at the same time it is precisely what is needed when we want to explain something. Providing an explanation means 'going to a deeper level,' to show how the phenomena being explained are in accordance with rules affecting the whole of the sphere in which the phenomena appear. And the transcendental constitutes just such a deeper level.

Noumena, Phenomena, and Things in Themselves

Both noumena and things in themselves are simple with respect to phenomena, which are complex. But noumena are *epistemological* entities—they lie beyond what can be *known*, while things in themselves are *ontological* entities—reality as it is independently of our experience of it. And, of course, noumena and things in themselves may well be the same entities.

In the case of noumena, you have an instance in which the epistemology/ontology distinction can be seen as a manifestation of the mind/body distinction, in that phenomena exist in the mind, while things in themselves are outside the mind. Kant equates experience with empirical knowledge, so phenomena are the objects of empirical knowledge, while noumena are such that they cannot be empirically or otherwise known. Kant points out that the notion of a noumenon is a limiting concept[91]—it indicates the limit of what can be empirically known, namely, phenomena. The concept of a noumenon (in being an instance of the more abstract concept of simplicity) is a *problematic* concept, or, also following Kant, is an *idea*.[92]

Aside: the Wonder of it All

Philosophy can get pretty complicated when you start thinking about reality and the way we think about reality and the relation between the two. But something I would like to try to impress you with is the wonder of it all. It is this wonder that is the raison d'être of philosophy, and it arises at the beginning of philosophizing—before things have got very complicated at all. My intuition tells me that philosophy isn't worth doing if you don't continually experience this wonder. I bring this up here because I experience it when I allow myself to drift while considering the epistemology/ontology distinction. I don't know if I can recreate this experience in you—in the best of cases you experience it yourself anyway. But what I'm getting at is the very thought that there can exist in the world entities capable of having knowledge of other entities. What a miraculous world. Not only are there things, but there are conscious things that are aware of some of the other things. (Or so it would seem.)

It is just this sense of wonder that leads the philosopher to ask Why? or How?; and to ask such a question is to admit of the existence of an intellectual problem.

But if you admit that the essence of philosophy is the wonder of reality, then the aim of philosophy, to *explain* reality, would eliminate that wonder, and lead to a situation where philosophy is redundant. Here you can see too why some people would want to say that philosophical problems are eternal—as long as the world provokes wonder in us, and we try to understand what it is that gives rise to this wonder, there'll be philosophical problems.[93]