

The Form and Principles of the Sensible and Intelligible World

(Kant's inaugural dissertation)

Immanuel Kant

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Section I: The notion of a world in general

1. Start with something *x* that is substantial and composite, and analyse it into its simpler elements; this process doesn't come to an end until we reach a part that is not a whole made up of simpler parts, i.e. until we reach **something simple**. The opposite process of synthesising—combining *x* with other substances—doesn't come to an end until we reach something that isn't a part of anything bigger, i.e. until we reach **a world**.

In this exposition of the concept of a world, I shall not only attend to the marks appropriate to a distinct knowledge of the object but shall also give some attention to its *two-fold origin* in the nature of the mind. So the exposition may set an example that leads to a deeper insight into metaphysical method, which I see as well worth doing. For it is one thing to **(a)** employ an **abstract** notion of the intellect to get from a thought of the parts to a conception of the whole that is composed of them, and it is a quite different thing to **(b)** take this general notion of the composite whole as a problem set by reason, and to try to chase it down by employing the sensitive faculty of knowing, i.e. representing it in the **concrete** by a distinct intuition. In **(a)** composition is secured through the class concept, if it's the concept

of a *plurality of mutually related things*; so this is work for universal ideas of the intellect. In **(b)** the endeavour is to attain the concept of the composite *in time*, generating it by successively adding part to part; and that is **synthesis**, a process that is subject to the laws of intuition. Similarly, given a substantial composite, we easily reach the idea of its simple [see Glossary] parts by stripping from the thought of it the intellectual notion of *composition*, because when composition is removed whatever is left is simple. But when the laws of intuitive knowledge are in play, it's a different story: the only way to remove composition now is by a regress from the given whole to all its parts, this being an **analysis** that occurs in time. [Kant has here a difficult footnote about two kinds of analysis and a corresponding two kinds of synthesis. We don't need this for what follows.]. . . . Thus, for analysis to be carried through to the point of yielding the concept of the *simple*, it must be brought to a conclusion in a finite and assignable time; and the same is true of a synthesis that is to be yield the concept of the *whole*.

In a *continuous* quantum, however, one can't get to the end of the regress from whole to parts; and in an *infinite* quantum one can't get to the end of the progress from parts

to whole. It follows that the analysis can't be completed, nor can the synthesis: the laws of intuition won't let the whole be represented completely as a composition of simple parts, or the composite be represented as a totality. And so we get this situation:

(1) It is often assumed that 'unrepresentable' means the same as 'impossible'; and

(2) the laws of intuitive knowledge clearly make it impossible to represent the concepts of continuity and infinitude;

and so we find that

(3) Many people reject these two concepts because they think they're impossible.

I am not here arguing in defence of these notions, rejected as they are (especially the concept of continuity) by many of the scholastics.¹ But those who follow this highly perverse line of argument should be urgently warned that they are falling into a very serious error. Something that is

opposed to the laws of understanding and reason is indeed impossible; but an object of pure reason which is merely not subject to the laws of intuitive cognition is not impossible. This disagreement between the sensitive and the intellectual faculties (more about those later) shows only this: when the mind receives abstract ideas from the

intellect, it often can't pull them through into something concrete and turn them into intuitions. But this subjective inability gives many people a false impression of some objective hindrance, and deceives them, if they aren't careful, into taking the limits circumscribing the human mind for limits imposed by the very essence of things outside the mind.

Furthermore, if substantial composites are given—whether through the testimony of the senses or in any other way—it's easy to see, by an argument based on intellectual grounds, that both simples and a world are also given. . . . The notion of a world is not merely arbitrary, like a mathematical construct that has been invented only so as to deduce consequences from it. For when your mind is directed onto the concept of *the composite*, whether it's engaged in breaking it up into smaller bits or putting it together with others, it demands and assumes in each of these procedures that there are limits at which it may find rest.

2. The factors to be considered in the definition of a world are these:

I. Matter, in a transcendental sense, i.e. the parts that the world is composed of—I'll assume that they are substances. ['... in a transcendental sense'? Kant is here appealing to Aristotle's distinction between 'matter' and 'form', i.e. between what there is and

¹

•what it is like. In this context, ‘matter’ is used not in its everyday empirical sense, standing for •a certain *kind* of stuff, but rather in its ‘transcendental’ sense, standing for •the things-or-stuff that the world is made of—the whatever-it-is that *has* the ‘form’.]

It doesn’t matter whether my definition of ‘world’ squares with the word’s meaning in ordinary language, because what I am investigating is just the problem—arising according to the laws of reason—of •how a number of substances can coalesce into one, and •what brings it about that this one is not a part of anything else. ·I use ‘world’ to mean ‘something that has parts and isn’t itself a part’, but that bit of terminology isn’t essential to my inquiry. ·[Kant goes on to say that the ordinary-language meaning of ‘world’ *does* in fact square with his technical meaning for it. He skips through a few views about ‘worlds’ that are wrong when the word is taken in his sense and that ordinary thoughtful people would also think to be wrong. For example, Leibniz’s view that ‘each soul is a little world’.] A final point: I haven’t said anything about whether the substances that make up a world are contingent or necessary; nor do I follow the usual procedure of •building an answer to that question into my definition and then ·triumphantly· •extracting it again by ‘argument’! I’ll show later on that the conditions I have laid down abundantly *prove* that the substances are contingent.

II. Form, which consists in the co-ordination of substances—not in the subordination of them. Co-ordinates are mutually related as complements forming a whole; subordinates are related as •cause and effect or more generally as •ground and consequent. Co-ordination is reciprocal, and the same names are used for each of the related items—each of them refers to the other as determining it and being determined by it. In subordination the names are different for the two related items—one is spoken of purely in terms of •dependency, the other purely in terms of •causality. This co-ordination is

conceived as real and objective, not as ideal and subjective, arising from someone’s arbitrarily choosing to think of some aggregate as a whole. By embracing a plurality ·in your thought· you can easily fashion a representation-of-a-whole, but it won’t be a representation of an ·actual objective· whole. The difference I am talking about is that between

- (a) a genuine objective world: an aggregate of substances that are held together by bonds of transeunt [see Glossary] causation linking them with one another, and
- (b) an aggregate of substances whose togetherness consists only in their being forced together by a unifying act of thought.

[Kant speaks of (b) as involving a plurality of *worlds* held together in a single thought, but that must have been a slip of the pen.] Let’s be clear about (a): what constitutes the essential form of a world—the fact about it that is absolutely required for it to *be* a world—is not any set of facts about how transeunt causation plays out among the world’s parts. Those facts are all contingent; they concern what state the world is in, but are irrelevant to its status as a world. [The bold type of this next bit is explained in the note at the top of page 1.] **What’s essential to the world qua world is there being some principle [see Glossary] that makes it possible for there to be transeunt causation among these substances**—possible for these substances, though independent of one another so far as their •existence is concerned, to depend on one another for the •states they are in. Without such a principle, there couldn’t be transeunt force in the world.

Because this form is *essential* to a world ·that has it·, it can’t be changed in any way. ·There are two reasons for this·. (i) it is secured by logic. In every change, some one thing goes from being F to being G. Note the need for a single thing to continue through the change. It’s the same with the world: through all its successive states it remains

the same world, and must therefore keep the same basic ·essential· form. (Don't think it could remain the same just by the continuing existence of its parts; its identity requires that it keep the same characteristic composition.) Also (ii) if a world's essence could change, that would mean that the basic internal principle of all the changes that occur in it would be opposed to itself, ·which is impossible·. . . . [Point (ii) is a striking echo of proposition 4 in Part III of Spinoza's *Ethics*.]

Those who see no need for this ·kind of· investigation have been led astray by the concepts of space and time. They see space and time as basic, . . . and as sufficient—all by themselves, without any other principle entering the picture—to make it not merely •possible but •necessary for a number of existing things to be inter-related as parts constituting a whole. I'll show later that these notions of space and time don't come from reason, and are ideas not of any •objectively real connections but of •phenomena. They do indeed tell us that *there is* some common principle holding everything together, but they don't show us what it is.

III. Allness, i.e. containing absolutely *all* the component parts. There's a notion of relative allness [see Glossary] that we can apply to anything that has parts, even if it is itself a part of something bigger, e.g. thinking about *all* the parts of the Rock of Gibraltar. But when allness is applied to a *world*, the thought is of *all things whatsoever*. This absolute allness, though it looks like an everyday concept that it's easy to understand, . . . turns out on investigation to present

the philosopher with a crucial problem. It's hard to conceive how the the universe's never-to-be completed series of states, running on to eternity, can be brought together into a whole that includes *absolutely all* changes. Indeed it follows from its very infinity that the series has no stopping-point; so no strung-out series of events can be given except as part of a further series. It follows that there's no place here for all-in-completeness, absolute totality. We can have the thought

a single series containing all the things that are parts of anything.

but the concept of a *whole*—as distinct from the mere abstract concept of *all*—seems to demand that all those things should be taken simultaneously; and in the present case that's impossible. . . .

You might think that the obstacle to the thought of a *whole* infinite series of items strung out through time doesn't arise in the case of a *simultaneous* infinite, because that involves only the notion of *all* things at a single time. But ·that is not right·. The simultaneous infinite and the successive infinite stand or fall together. [Kant's given reason for this amounts to saying: We can't make sense of 'an infinity of cubic yards of space right now' if we can't—and we *can't*—make sense of the idea of tagging them all one by one. He continues:] The laying-out of a plurality—whether successive or simultaneous—rests on concepts of time. If you are looking for a way out of this thorny problem, bear in mind that it's not a problem about the intellectual concept of *whole*, but only about the conditions of sensitive intuition. . . .

Section II: The distinction between sensible things and intelligible things in general

3. Your *sensibility* is your receptivity, your ability to be on the receiving end, through which your mind can be affected in a certain way by the presence of some object. Your *intelligence* or rationality is the faculty through which you can represent things that aren't of a kind that can come before your senses. The object of sensibility is the **sensible**; anything that can't be known [see Glossary] except through intelligence is **intelligible**. The ancient philosophers called a sensible thing a *phenomenon* and an intelligible thing a *noumenon*. Knowledge that is subject to the laws of sensuality is sensitive; in so far as it is subject to the laws of intelligence it is intellectual or rational [see Glossary].

4. Thus, the sensitive element in knowledge depends on your special character—on your being able to be changed by the presence of objects, and on what objects produce what changes in you. But any knowledge that isn't affected by such **subjective** conditions—i.e. that doesn't vary according to what state *you* are in—is entirely **objective**, meaning that it is strictly and solely concerned with the object, i.e. whatever it is that the knowledge is knowledge about. This shows us that what come to us sensitively are representations of things •as they appear, and what we get in the intellectual way are representations of things •as they are.

A sensory representation involves **(1)** something we could call its *matter*, namely the sensation; and also **(2)** something we could call its *form*, namely the way the sensory content is organised—as effects on the senses always *are*—by a certain natural law of the mind. Now, whereas **(1)** the sensation that is matter of a sensual representation shows that you are in the presence of something sensible, its quality—what it is

like—depends on facts about you, facts about how you can be affected by the sensible thing in question. Similarly with **(2)** the form of the representation: it indicates something about the qualities of (and relations among) the *sensa*—i.e. the elements of your sensory state—but it's not a sketch or schema of the object, but only the result of a certain law implanted [see Glossary] in your mind, a law by which your mind orders for itself the *sensa* that come from the presence of the object.

[The start of the next sentence means

How an object affects your senses *isn't determined by* the object's form or structure;

but it fits the context better if we suppose that what Kant meant to say was

How an object affects your senses *doesn't put into your sensory state anything that mirrors* the object's form or structure;]

so, for the various effects that the object has on your senses to coalesce into a single over-all representation your mind has to have a built-in principle [see Glossary] which, operating by strict innate laws, pulls these items together into a structured whole.

5. In sensory knowledge, then, we have •matter (i.e. sensation) and •form. It's because of the element of sensation that such knowledge counts as 'sensory' [*sensuales*]; and it's because of the form that the representations in such knowledge count as 'sensitive' [*sensitivae*], and would do so even if no sensation were involved.

Intellectual knowledge involves the mind's higher faculty—the intellect—and it's important to understand that this has two uses. **(a)** In the **real use** of the intellect, the concepts

themselves, whether of things or relations, are given, and the intellect employs them in thoughts about those things or relations. **(b)** In the **logical use** the intellect isn't interested in the source of the concepts; its concern is with the concepts themselves; it attends to which concepts are subordinated to which others, and brings them together pairwise to see which are consistent with which others. The logical use of the intellect, unlike the real use, is common to all the sciences. When an item of knowledge has been given—it doesn't matter *how*—the question arises as to how it relates, logically, to these or those other items of knowledge: is it of the same kind as them? or is there something about it that pushes it away from them? The answer may be given immediately and directly in a judgement or indirectly through a chain of reasoning. [Kant in that sentence connects judgments with 'distinct knowledge' and reasoning with 'adequate knowledge'. That's the only occurrence of 'adequate' in this dissertation, and he doesn't explain it.] Items of sensitive knowledge, therefore, are subordinated to other such items by the logical use of the intellect (like subordinating concepts to other concepts), and phenomena are brought under more general laws of phenomena.

But please note this: However much these items of knowledge have been subjected to the operations of the intellect in its logical use, they are still *sensitive*. They have that status because of their origin, not because of any relations they have to other items of knowledge. Even the most general empirical laws are still sensible, and so are the principles of geometry. However much we subject the latter to the rules of logic in deriving some of them from others, that doesn't give them a route out of the 'sensitive' class. [Kant rams this home by building into that sentence a description of geometry in terms of 'principles of sensitive form' and of 'determinate relations in space', and speaking of geometry as

getting its input from 'a pure intuition'.] [That last phrase, which will loom large in the *Critique*, makes its first (unexplained) appearance here. It will turn up again in items **12**, **15** and **25**. Incidentally, in this context 'principle' doesn't have the older meaning explained in the Glossary.]

On the sensory or phenomenal side, there's a distinction to be made: sensory content that hasn't yet been processed by the logical use of the intellect is called **appearance**; and the reflexive knowledge that comes from the intellect's relating several appearances to one another is called **experience**. So the only route from appearance to experience runs through reflection involving the logical use of the intellect. The common concepts of experience are called *empirical*, and the objects of experience are called *phenomena*; the laws of experience and quite generally of all sensitive knowledge are called *laws of phenomena*. Note well: *quite generally, of all...*: Empirical concepts don't become intellectual by being used at ever higher levels of generality. For an empirical concept there is no escape from the domain of sensitive knowledge; it will always remain sensitive, however abstractly it is used.

6. Regarding concepts that are in the strict sense intellectual—ones involved in the *real* use of the intellect—whether they are concepts of objects or of relations among objects their source is the nature of the intellect; they haven't been abstracted from any use of the senses and don't contain any form of sensitive knowledge. But beware! The word 'abstracted' is extremely ambiguous, and it would be best to cleanse our minds of this ambiguity right away, so as not to let it mess up our thinking about intellectual concepts. We must distinguish two different things that can be meant by calling a concept 'abstract'. We could mean that **(i)** it is an intellectual concept that *abstracts*

from everything sensitive, i.e. is stripped of, or keeps at a distance from, everything sensitive; or that **(ii)** it is a concept that comes to us through concrete sense-experience and is *abstracted from* it. It might be better to call **(i)** an ‘abstracting’ concept, reserving ‘abstract concept’ for **(ii)**. [Kant doesn’t do this: ‘abstracting’ occurs just this once. Nor does he again (in this work) follow his other remark that ‘it is more advisable to call intellectual concepts “pure ideas”.’]

7. This shows us that it’s wrong to trace the sensitive/intellectual line back to the confused/distinct line. The latter distinction is a logical one that has *nothing* to do with the data the intellect works on in drawing things into structures. The two lines cut across one another: something can be sensitive and very distinct, like geometry, the prime example of sensitive knowledge; or intellectual and extremely confused, like metaphysics, the organon [see Glossary] of everything. Everyone knows how much effort metaphysics puts into dispelling the clouds of confusion that darken the common intellect, though it often has a less happy outcome than geometry does. But each of these bears the marks of its origin: the origin of the first kind qualifies it to count as ‘sensitive’, however distinct a given case of it may be; and the origin of the second kind qualifies it as ‘intellectual’, even if it is confused. As an example of something that is intellectual and confused, I offer you *moral concepts* which we all know are confused and which are known not by experience but through the pure [see Glossary] intellect itself. The illustrious Christian Wolff took the sensitive/intellectual distinction to be a merely logical one; this destroyed the noblest enterprise of antiquity, the inquiry into the nature of phenomena and noumena, and did great harm to philosophy by turning men’s minds away from that towards details in logic, often very minor ones.

8. The part of philosophy that contains the first principles of the use of the pure intellect is *metaphysics*. If you are to engage in that, you need first to understand the distinction between sensitive knowledge and intellectual knowledge, and that’s what I am presenting to you in this dissertation. Well, then, empirical principles aren’t to be found in metaphysics, so the concepts involved in it have to be sought not in the senses but in the very nature of the pure intellect. They aren’t innate concepts that have been in the mind from its beginning; rather, they have been acquired along the way. But it’s a special kind of acquisition, which goes as follows. When your mind has experience, that is because laws that are implanted in it operate on some sensory appearances; your mind attends to those operations, and from the laws at work in them it *abstracts* the concepts that are involved in metaphysics. They include the concepts of possibility, existence, necessity, substance, cause etc., along with their opposites or correlates. These are never parts of any sensory representation, so there’s no way they could be abstracted from any such representation.

9. Intellectual concepts have two functions. **(1)** In their **controlling** role they do the negative job of stopping sensitive concepts from being applied to noumena. In doing this they don’t move our knowledge along an inch, but they keep it safe from infection by errors. **(2)** These concepts have their **not merely controlling** use, in which the general principles of the pure intellect—the sort that are at work in ontology and in rational [see Glossary] psychology—generate an exemplar or model which is to serve as standard by which all real things are to be judged. This is the model of *noumenal perfection*; ‘noumenal’ because it’s something that can only be conceived by the pure intellect. This ‘perfection’ can be

taken in either of two ways, •theoretical and •practical,² so there are two models: the theoretical one is the highest being, GOD; the practical one is MORAL PERFECTION. So moral philosophy's role of supplying the first principles of moral judgement is carried out by pure intellect, and itself belongs to pure philosophy. Epicurus, who made feelings of pleasure and unpleasure the standard for moral judgment, is rightly condemned, along with certain moderns—Shaftesbury and his supporters—who have partly followed him at a distance.

[In this paragraph, 'source' translates *principium*, perhaps making this difficult passage a bit less obscure than it would be if 'principle' [see Glossary] were used.] If things that are of a kind K can vary in *how* K they are—differ in quantity or degree of Kness—the notion of *maximum Kness* is where our thinking starts from and is the source of our knowledge. The maximum of perfection is what Plato called an 'idea' (as in the case of his 'Idea of the State'), and what we these days call an 'ideal'. It's the source of everything that belongs to any degree to the kind K, because the lesser degrees of Kness are supposed to be determinable only by limiting the maximum. But God, as the ideal of perfection is the source of knowledge, and at the same time as really existing it is the source of the coming into existence of all perfection whatsoever.

10. For us humans intellectual knowledge is symbolic, coming from an operation with

- universal concepts in the abstract, ·i.e. omitting much of the detail·,

and not through intuition, i.e. not through

- a singular concept in the concrete, ·i.e. with all the details that would be true of a singular thing falling under the concept·.

All our intuition is has a certain *form*; specifically, everything

of which we have intuitions is in space and time; and the principle [see Glossary] that brings this about won't let your mind get into cognitive contact with anything x that is spatio-temporal

- in an abstract way through *general* concepts;

the only contact it allows is

- immediate, in which the mind confronts x as *singular*.

Now, it's only in space and time that anything can be an object of our senses; so it's a condition of •sensitive knowledge and can't deliver any •intellectual intuition. All the content of our knowledge comes from the senses, but they don't yield any representations through which we could conceive anything noumenal. So our concept of *the intelligible* is untouched by anything that human intuition can provide. Our intuition is always passive: we can have intuitions only when something affects our senses. But divine intuition causes its objects and isn't caused by them; and because it is independent—i.e. doesn't depend on or arise from anything else·—it is an original ·and not a copy·, and for that reason perfectly intellectual. [This passage reflects Kant's view (perhaps not fully formed at the time this dissertation was written) that the •sensitive/intellectual line coincides with the •passive/active line, and that this is more than a mere coincidence.]

11. Although phenomena are really just resemblances of things and not ideas of them, and although they don't represent the intrinsic rock-bottom qualities of objects, our knowledge of them is indeed genuine knowledge. There are two reasons for saying this. **(a)** Their status as *sensible*, and thus as being *caused*, means that they are witnesses to the presence of an object, ·namely the object that caused them·. [Kant adds 'and this is opposed to idealism'; this is the only mention of idealism in this dissertation.] **(b)** Think about judgements

concerning things known sensitively. The truth of the judgment *x is F* consists in the agreement of the predicate *F* with *x*, the subject of the judgment. Now, when *x* is a phenomenon, your only hold on it comes from its relation to your faculty of sensitive knowledge, and the predicate *F*—concerning something that is sensitively observable—comes to you through that same faculty. Thus, clearly, your representations of subject and predicate arise according to the same laws, and so provide for perfectly true knowledge.

12. [Kant begins this paragraph with a defeatingly condensed sentence; what follows, down to and including **(iv)**, gives the sentence's content—with no additions, but re-organized.] In addition to •phenomena that are presented to our •senses, there are items which

- (i)** don't come before our senses, and yet
- (ii)** do belong on the sensitive side of the sensitive/intellectual line;

and they can satisfy both **(i)** and **(ii)** because they

- (iii)** present us with the form (but not the content) of sensibility.

They satisfy **(i)** because they present only form, not content; they satisfy **(ii)** because what they present the form of is sensibility. And I express all this by saying that they

- (iv)** present us with intuitions that are pure, i.e. empty of sensations.

The phenomena of outer sense are displayed and examined in •physics, and those of inner sense in empirical •psychology. But pure intuition (*our* pure intuition) is not

- a universal or logical concept **under** which things are thought, but
- a singular concept **in** which sensible things are thought,

and so it contains the concepts of space and time.

[What is at work here is Kant's three-part thesis that **(a)** all our intuitions have imposed on them a certain *form*; **(b)** this form has to do with spatiality (for our outer intuitions) and temporality (for all our intuitions, inner and outer); and **(c)** we have to think of these not in terms of the general concepts of *spatiality* and *temporality* but in terms of two individuals, Space and Time. When we say that all physical objects are spatial, what we do or should mean is not that they fall **under** the general concept of spatiality, but rather that they are all **in** Space, in that one great big thing.]

Since space and time have no effect on the qualities of sensible things, they don't come into the science except in quantitative ways—'twice as big', 'gradually lessening speed', 'instantaneous', and so on. Pure mathematics deals with space in •geometry, and with time in •pure mechanics. There's also the concept of *number*, which arithmetic deals with. It is an intellectual concept, but it can be applied to concrete situations only in harness with the notions of time and space: for example,

- with time: counting the rotations of the earth around the sun;
- with space: counting the planets.

Thus, pure mathematics deals with the form of all our sensitive knowledge, which makes it the organon [see Glossary] of all knowledge that is both intuitive and clear. And because its objects—space and time—are not only the formal principles of every intuition but are themselves original intuitions, it provides us with entirely genuine knowledge while also giving us a model of the highest kind of certainty in other fields. So there is a science of sensible things—meaning 'science in its stiffest and most demanding sense'—although intellect comes into it only in a •logical role, not in a •real role of adding to the content of the science [see page 5]. . . .

Section III: The principles of the form of the sensible world

13. [Two important preliminaries: •Before reading another word of Kant's, go back to the Glossary and remind yourself of what 'principle' means in this work. •Latin does not distinguish 'the principle' and 'the form' from 'a principle' and 'a form'. This paragraph offers no basis for a consistent choice, and the present version will push along as best it can.] The principle of the form of the universe is whatever it is that contains the basis for the universal connectedness by which all **substances and their states** belong to a single whole—what we call 'a world'. The principle of the form of the sensible world is whatever it is that contains the basis for the universal bond of all **phenomena**. [What Kant wrote strictly means '... of all things insofar as they are phenomena'.] The form of the intelligible world proclaims an objective principle, i.e. some cause of the binding together of all **noumena**, i.e. things that exist in themselves. But the only principle of form that is proclaimed by the world considered as phenomenal, i.e. in relation to the sensuality of the human mind, is a subjective one, i.e. a law of the mind which necessitates this:

All the things that can be objects of the senses are seen as belonging to the same whole.

So we know this: the principle of the form of the sensible world, whatever it is, applies only to things whose actuality consists in their being capable of falling under the senses. Its range, therefore, doesn't include immaterial substances, which are by definition entirely out of the reach of the external senses. . . . Nor can the cause of the world be an object of the senses. The principles that give the phenomenal universe its form are absolutely basic and universal; they—or rather the forms that they create—are as it were tests that any sensible element in human knowledge has to pass. I shall now show that there are exactly two of them, space and time.

14. Time

(1) The idea of time doesn't come from the senses but is presupposed by them: it's only *through* the idea of time that the things encountered by the senses can be represented as being simultaneous or successive, so don't think that succession generates the concept of time! When time is defined in terms of a series of actual events happening one after another, that's a very poor account of it. That little word 'after'—how am I to understand that if I don't already have the concept of time? . . .

(ii) The idea of time is singular, not general. We never think of 'a time' except as a part of the one boundless Time. If you think of *two years*, you have to represent them to yourself as having a determinate position in relation to each other, and if neither follows the other immediately you have to think of them as linked by some intermediate time. Of two different times, which is earlier and which later can't be defined by any marks conceivable to the intellect; the attempt to do so would land you in a vicious circle. The only way the mind can see the earlier and later distinction is by a singular intuition. [Kant doesn't explain why there's a threat of vicious circle here. His remark about 'a singular intuition' is also pretty brief; but it is expounded more fully in section 4 of www.earlymoderntexts.com/jfb/time.pdf.] Also—returning now to the main thesis of this paragraph—we conceive of all actual things as situated **in** time and not as contained **under** its general notion as though being-in-time was a general characteristic that they all share.

(iii) So the idea of time is an intuition. The conception of it comes before every sensation, as a pre-requirement for the relations that hold among sensible things; from which it

follows that it's a pure intuition, not a sensual one.

(iv) Time is a continuous quantum and is the principle of the laws of continuous change in the universe. A quantum is continuous if it isn't made up of simple parts, and that's the case with time. Here is an argument which shows this.

- When you think about time you're thinking only of
 - relations, not of things or events that are thus related.
 And so
- in time as a quantum there is compositeness, but if you think of this compositeness as completely removed then there's nothing left; and
- if there's nothing left of a composite x when all compositeness is removed, then x isn't composed of simple parts [because otherwise *they* would be left].

Q.e.d. So every part of time is itself a period of time. Time does involve items that are simple, namely *instants*; but they aren't periods of time; they are boundaries between periods of time. . . .

The metaphysical law of continuity says that *all changes are continuous*. Something cannot go from being F to being G (where these are mutually inconsistent) except through an intermediate series of different states. For two opposite states are at different instants of time, but between the two instants there would always be some intervening time and in the infinite series of moments of that time the substance is not either F or G and yet it is not in no state! So the substance will be in states other than F and G, and between any two of those states there will be intervening states, and so on ad infinitum. The conclusion, then, is that the change from F to G—which is a stand-in for any change whatsoever—is continuous.

[Kant now has a paragraph reporting a thought-experiment by which 'the celebrated Kaestner' explored Leibniz's thesis that all change is continuous. It has to do with the movement of a point through an angle, and concludes that if all change is continuous then a body can change direction only in a curve. The argument turns on how the last instant when the point is moving into the angle relates to the first instant when it is moving out of the angle; but if time is continuous there are no such two instants, and the argument collapses.]

(v) Time is not something objective and real, not a substance or accident [see Glossary] or relation; rather, it is a condition that has to be satisfied if sensible things are to be inter-related by fixed laws. It's the nature of the human mind that sets this condition, so it is subjective. It is a pure intuition. [This indented passage is an addition to what Kant wrote.]

It's an **intuition** because it is tied in with sensibility; it is something we confront in our experience, not something abstract and intellectual. And it is **pure** because it doesn't have any empirical content; it is the required background against which, or frame within which, empirical content reaches us.

It's only *through* the concept of time that we co-ordinate substances and accidents as being simultaneous or successive; and so the notion of time, as being what gives form to our sensory intake, is prior to the concepts of substance and accident. . . .

Those who assert the objective reality of time go in one of two ways. **(a)** English philosophers, especially, think of time as some continuous flux that exists but doesn't involve any other real things—a preposterous view! **(b)** Leibniz and his followers think of time as something real, abstracted from the succession of internal states. The falsity of this can be seen in the vicious circle in the definition of time

·that it requires·, and •in its not being able to deal with simultaneity, which is a very important aspect of time.³ So it upsets the whole use of sound reason, because instead of requiring the laws of motion to be defined in terms of time, it tries to define time itself in terms of observed motions or series of internal changes. . . . It's true that we can't estimate the length of any period of time except in concrete terms of amounts of motion or of series of thoughts; but this is because the concept of time rests only on an internal law of the mind; it's not a certain intuition born with us; so the mind's action in co-ordinating its own *sensa* is called forth only with the help of the senses. If you think you might be able to explain the concept of time with the help of reason, you couldn't be more wrong! The fact is that even the principle of non-contradiction essentially involves time. . . . For ' . . . is F' is inconsistent with ' . . . is not F' only if they are thought simultaneously (i.e. at the same time) about the same thing. They can be true of one thing at different times. Summing up: it is only in time that the possibility of changes is thinkable: time is not thinkable because of changes—changes are thinkable because of time.

(vi) Time posited in itself and absolutely would be an imaginary entity, but because it is related to the immutable law of sensible things it is a quite genuine concept and a condition of intuitive representation extending over the infinite range of possible objects of the senses. Because •pairs of things can't come before the senses as simultaneous without the help of time, and •changes are thinkable only through

time, we can see that this concept contains the universal form of phenomena. So it's clear that all observable events in the world, all movements and all internal happenings *must* square with any axioms that can be known about time (I have already expounded some). . . . It is absurd to call on reason to challenge the first postulates of pure time, such as the continuity one; because those postulates follow from laws that are as basic as laws can be. The concept of time is so basic and independent that reason itself has to have its help—in formulating the principle of non-contradiction.

(vii) Thus **time is an absolutely primary formal principle of the sensible world**. For things that are in any way sensible have to be thought of as either simultaneous or temporally successive, and so as inter-related by their determinate positions in a single time-series. So this concept, which underlies everything sensitive, gives rise to a •formal whole that isn't a part of anything else—i.e. it gives rise to •the phenomenal world.

15. Space

(A) **The concept of space is not abstracted from external sensations**. I can't conceive of something *x* as located outside something else *y* except by locating them in different places in space—and this includes the case where *y* is myself. So the possibility of external perceptions •presupposes the concept of space, and doesn't •create it. Things in space affect the senses, but space itself can't be derived from the senses.

(B) **The concept of space is a singular representation** including all •spaces• within itself, not an abstract concept that

applies to them all. When you speak of 'different spaces' you have to be referring to different parts of a single boundless space, each having a fixed position within it. And you can't conceive of *a cubic foot* except as bounded and surrounded by space.

(C) The concept of space is therefore a pure intuition. ·It is an **intuition**· because it is a singular concept; ·and it is **pure** because· it is not constructed out of sensations but is the basic form of all external sensation. It's easy to notice this pure intuition in the axioms of geometry, and in any mental construction of ·geometrical· postulates or problems. Such truths as these—

- Space has only three dimensions.
- Between two points there is only one straight line.
- From a given point on a plane surface a circle can be described with a given straight line ·as radius·.

—can't be inferred from any universal notion of space, but can only be seen in space itself as in something concrete.

However smart we are, we can't deploy general concepts to distinguish •things in a given space that lie towards one quarter and •things that incline towards the opposite quarter—e.g. a left hand and a perfectly matching right hand. Two such hands are solids that are perfectly similar and equal but not congruent. [These days such pairs of things are called 'incongruous counterparts'. For a fairly full discussion of them you might try www.earlymoderntexts.com/jfb/drl.pdf.] Another example would be a pair of spherical triangles from opposite hemispheres of a single globe; between these (·as between

the matching hands·) there's a difference which

- makes it impossible for their boundaries to coincide in space [they are incongruous] , but
- cannot be expressed in general conceptual terms that would make the difference intelligible in thought and speech [they are counterparts].

In these cases, therefore, the diversity—i.e. the incongruity—can be seen only by a certain act of pure intuition.

Hence geometry uses unquestioned principles that are stated in general conceptual terms and come directly before the gaze of the mind. Demonstrations in geometry are more *evident* than demonstrations in anything else; indeed those are the only evident demonstrations in the pure sciences; and their evidentness is the model for, and the means of attaining, evident results in other sciences. . . . ·The 'means of attaining'? Yes·, because geometry studies spatial relations, and the concept of space contains in itself the very form of all sensual intuition; so nothing can be clear and evident in things perceived by the outer senses unless it comes through the intuition which is geometry's subject-matter. But geometry doesn't get its results •by thinking things through with universal concepts (as we do in sciences based on reason), but •by subjecting them to the eyes by means of a singular intuition (as we do in sensitive investigations).⁴

(D) Space is not something objective and real—not a substance or accident or relation—but is **subjective and ideal**: it comes from the nature of the mind by an unchanging law, as a schema—·a model or template·—for co-ordinating

externally sensed things with each other. Those who defend the reality of space fall into two groups:

- (i) Most geometers, taking their lead from the English philosophers, conceive of space as an absolute and unlimited receptacle of possible things; and
- (ii) Most German philosophers, taking their lead from Leibniz, hold that space is a relation—or more accurately a system of relations—that holds amongst existing things, a system that can be thought only among actual things and would vanish entirely if the things were annihilated.

Opting for (i) is accepting an empty figment of reason—entering the world of fables—in which there’s an infinity of genuine relations but no entities to be inter-related! [Kant’s point is presumably this: If space is an infinite container, it must contain spherical portions, cubic portions, etc.; these involve relations amongst the parts of space; and according to (i) this would all be the case even if space were an empty container.] Bad as this is, it’s not the worst mistake one could make. The followers of (i) merely put a stumbling block in the way of certain concepts—rational ones, concerning noumena—which are in any case enormously difficult to get an intellectual grip on (e.g. in questions about the spiritual world, about omnipresence, and so on). The error of those who choose (ii) is much worse than that. They flatly oppose the phenomena themselves and the most faithful interpreter of all phenomena, geometry. Even apart from the obvious circle in the definition of space that they are entangled in, they pull geometry down from the summit of certitude into the ranks of empirical sciences. For if all the affections [see Glossary] of space are merely borrowed by experience from external relations, the axioms of geometry are only comparatively universal; they have the kind of ‘necessity’ that is acquired through induction and doesn’t extend further than observation goes. Their only necessity

comes from stable laws of nature; their only precision comes from conventions that we have chosen; and like anything empirical they open the door to the possibility of some day discovering a space with different basic affections—perhaps even a space in which two straight lines can meet twice.

(E) Although the concept of space as some **objective** and real entity or affection is imaginary, nevertheless in relation to all sensible things it is not only utterly true but is also the basis for all truth in the outer sensible world. Things can’t appear to the senses in any way except through a power of the mind that coordinates all sensations according to a stable law implanted in its own nature. So nothing—*nothing*—can be given to the senses that doesn’t conform to the primitive axioms of space and the consequences geometry draws from them, despite the fact that the principle [see Glossary] of those axioms is only **subjective**. The laws of sensibility will be the laws of nature insofar as nature can come before the senses; to achieve this, all the principle has to do is to harmonize with itself! Thus, nature strictly conforms to what geometry says about the affections of space—I mean, to what geometry demonstrates, to hypotheses that are not merely invented [*ficta*] but are given [*data*] intuitively as the subjective condition of all the natural phenomena that can be reached by the outer senses. If the concept of space hadn’t been given originally by the nature of the mind. . . ., then the use of geometry in natural philosophy would be quite unsafe. Why? Because then it could be doubted whether this empirically based notion of space was a good fit with nature—the empirical reports on which it was based might be denied (some people indeed *have* had suspicions about this). So space is the formal principle of the sensible world, and is absolutely basic, partly because it’s only through the concept of space that there can be phenomena, but primarily because it’s of the essence of space that it is single—a

single great big item that we ought to call Space—so that it embraces absolutely all outer sensible things, which means that it

how the sentence ends: *principium constituit universitatis, h.e. totius quod non potest esse pars alterius.*

conservatively translated: constitutes a principle of universality, i.e. of a whole that can't be a part of another whole.

and meaning something like this: acts as the source of wholeness, i.e. brings it about that there is such a thing as the external *world*, the assemblage of external things that isn't a part of any other assemblage.

[See the explanation of 'world' at the start of this work.]

Corollary

These, then, are the two principles of sensitive knowledge; they aren't general •concepts such as come into play in intellectual matters, but singular •intuitions whose status as intuitions doesn't stop them from being *pure*. The laws of reason •in intellectual matters• teach that what makes a composite thing possible are its parts, especially its simple parts; but when we move across from intellectual matters to sensitive intuition, the story changes: it is the infinite whole that makes possible each thinkable part, right down to the simple ones (which aren't parts but limits). To mark off any definite space or time by assigning its limits you have to start with infinite space and infinite time *within* which the smaller spaces or times are marked off. And the markers—the point and the instant—are conceivable only as limits within a space and time that is already given. So all the basic properties of these concepts lie outside the domain of reason and therefore can't be explained in intellectual terms. Still, they are what the intellect works with when with perfect confidence it uses logical laws to draw conclusions from primary data of intuition.

...•The concept of• space is applied as an image to the concept of time, representing time by a line and its limits (instants) by points. Time...embraces with its own relations absolutely all things—space itself and •the whole contents of space•; and also *thoughts*, which aren't spatially related to anything. Although time doesn't dictate laws to reason, it does create the conditions in which the mind can inter-relate its own notions in accordance with the laws of reason. To judge that something is impossible, I have to see that it predicates both A and not-A of the same subject *at the same time*. And—above all—if we're applying our intellect to experience, we need time-relations to help us determine what is earlier and what later, and thus what causes and what is caused; and to do that for external causes and effects we also need spatial relations. And we can't have any thoughts about spatial quantities—•distances, areas, volumes, etc.—unless we do it by applying numbers to some chosen unit. And numbers exist only because there are aggregates that are distinctly known by enumeration, i.e. by *successively* adding one to one—a process that happens in time.

A question that arises insistently for everyone is this: Is the concept of space (time) •born with us or •acquired. The answer 'acquired' seems to have refuted by the things I have demonstrated; but let us not casually opt for 'born with us', because that opens up a path towards the lazy philosophy that keeps saying 'It's no use exploring further'. And, anyway, the concepts of space and time certainly *have* been acquired, not by

- abstraction from the sensing of objects (for sensation gives the •matter and not the •form of human knowledge), but
- from the mind's action of co-ordinating its *sensa* according to permanent laws.

Each of these two concepts is like a fixed plan or diagram

that is to be known intuitively. Sensations arouse this act of the mind—this intuition—but they don't influence the content of the intuition. In all this the only thing that is

born with us is the law of the mind that makes it combine in a fixed manner the *sensa* produced in it by the presence of an object.

Section IV: The principle of the form of the intelligible world

16. Those who take space and time to be a real and absolutely necessary *fastening*, so to speak, of all possible substances and states think that that's all they need to conceive how it can be that

a certain basic relation applies to an assemblage of existing things, functioning as •the ultimate source of their ability to act on one another and as •the principle of the essential form of the universe.

They think that existing things must be *somewhere*, so they don't see any need to enquire why these things turn up in regular ways, because they think that that's produced by the *space* that holds them all. But I have shown that this concept has to do with sensitive laws of the •subject rather than with the conditions of the •objects themselves. . . . So these people don't touch the question that still confronts us and that can only be answered by the intellect:

What is the principle that gives rise to this relation of all substances—this relation which when seen intuitively is called space?

Thus the question about the principle of the form of the intelligible world requires us to make clear what enables many substances to interact in such a way as to belong to a single whole that is called 'a world'. [The note at the top of page 1 explains

the bold type.] This isn't about a world's *matter*, i.e. what sorts of substances it contains, but about its *form*, i.e. that is how it comes about that many substances are inter-linked so that they *all* constitute a single *whole*.

17. The sheer existence of a lot of substances doesn't by itself make them able to interact. For their interaction to be intelligible, something more is required. The sheer fact that a substance exists doesn't *necessarily* relate it to anything else (except perhaps to its cause, but the relation of caused to cause is *one-way* dependence, whereas we're concerned here with *two-way* interaction). . . .

[Kant now drags in a mention of 'the doctrine of "physical influence" in the plain man's sense of that phrase', and kicks it around in a *very* obscure manner. This dark paragraph doesn't purport to contribute to anything that follows it, so we can let ourselves off from wrestling with it. The phrase *influxus physicus* will recur (twice) in **22** but nowhere else.]

18. It's impossible for two or more necessarily existing substances to constitute a single *whole*. No such substance depends on anything else for its existence; so it is clear that we have not only this result *from 17 above*:

the interaction of substances (i.e. the two-way dependence of their states) **doesn't follow from their mere existence,**

but also this one:

interaction **can't be attributed at all** to substances that are necessary things.

[Kant seems here to ignore the distinction that he stressed back on page 3, where he clearly implied that substances might be 'independent of one another so far as their •existence is concerned' yet 'depend on one another for the •states they are in'. It's bewildering. If you want to check on this yourself, the Latin and two previous translations can be found on page 26.]

19. Thus a *whole* of substances is a *whole* of contingents, ·i.e. things that exist contingently, not necessarily·. It's an essential fact about any world that it is composed of mere contingents. The only way a necessary substance could be ·causally· linked with a world is by being its cause. It can't be linked as a part, for that would involve its being involved in two-way inter-dependence with the other parts, and that's ruled out for a necessary entity. Therefore the cause of the world—if it has a cause—is right **outside the world**; so it isn't the soul of the world, ·as various religions and philosophies have thought it to be·. And its presence in the world is not local but virtual. [In a Note at the end of this Section Kant will flesh out that last sentence: the cause of the world isn't in the world by being somewhere in it or everywhere in it, but by being inwardly present to things, thus making it possible for them to be spatially related to one another.]

20. Substances that are **in the world** derive from something other than themselves; but not from several such somethings—they all derive from one entity. If they were caused by several necessary beings, they couldn't interact

with one another because their different causes couldn't. Thus, what makes the substances in the universe hang together as *one* world is a consequence of their all coming from *one* cause. . . . And there can't be an architect of the world who isn't also its creator.

21. If there were several first and necessary causes, and things caused by them, the upshot would be *worlds*, not *a world*, because the things wouldn't all be inter-connected in such a way as to constitute a single whole. And conversely if there were several non-overlapping worlds, they would have to come from several first and necessary causes; the lack of interaction between any two of the worlds would result from the lack of interaction between the respective world-causes.

So it's not the case (as Wolff thought it is) that the very concept of *world* makes it impossible that there should be two or more non-overlapping actual worlds. All we can say about the possibility of several worlds is that *if there's only one necessary cause of everything* there can't be more than one world. If there is more than one necessary cause, it will be possible—in the strictest metaphysical sense—for there to be that many non-overlapping worlds.

22. From the existence of a world we can validly infer that there's a single cause of all its parts; if it's also valid to infer, in the opposite direction, from their having a single common cause that they are interconnected, this being the form of the world (though I admit this second inference doesn't seem to me as clear the first), then the fundamental interlinking of substances would be not contingent but necessary because they would all be sustained by a common principle. This interlinking would create a •harmony •coming from the sheer fact of their existence, •based on their common cause, and •unrolling according to common rules. I call this kind of

harmony a *generally established harmony*; it is real, out there in the world. It contrasts with *specially established harmony*, which occurs only because individual states of each substance are correlated with the individual states of the others; this being ideal and sympathetic [see Glossary]. [The rest of this paragraph re-arranges what Kant wrote in ways that can't easily be indicated by dots, brackets, etc., but it doesn't change the content in any way.] So all harmony among the substances in the universe is established externally (through the common cause of all of them) and is either

- (1) established generally by physical influence (in its more correct form [see the second half of 17]) or
- (2) established for the states of the substances individually.

And (2) has two versions:

- (2a) The harmony is grounded in the basic constitutions of the substances; this is pre-established harmony;
- (2b) The harmony consists in the fact that the various individual changes of state of each substance are matched by changes in other substances; this is called occasionalism.

Let us focus on these two propositions:

- (i) All substances are sustained by one being, i.e. all have a single common cause.
- (ii) The harmony amongst all substances is necessary.

If (i) implies (ii) then there will be universal interaction among the substances—interaction through physical influence—and the world will be a real whole. But if (i) doesn't imply (ii) then the 'interaction' will be sympathetic (i.e. harmony without true interaction)—and the world will only be an ideal whole. In my view, although it hasn't been demonstrated that

(i) implies (ii), there are plenty of reasons to favour the first view, namely that the harmony among substances reflects real causal interactions and the world is a real whole.

* * * * *

Note: If it were legitimate to take a small step beyond the boundaries of the absolute certainty that is appropriate to metaphysics, we might investigate certain questions not only about the •laws of sensitive intuition but also about its •causes, which can be known only through the intellect. It's only because the human mind is sustained by the same infinite power as sustains everything else that •it is affected by external things and •the world lies open to its view *in infinitum*. So the mind only senses external things through the **presence** of that common sustaining cause. And so space, which is the sensitively known universal and necessary condition of the co-**presence** of all things, can be called phenomenal **omnipresence**. (What makes the cause of the universe present to all individual things is not its being in the places where they are. It is present *inwardly* to all things; and if it weren't there wouldn't *be* any places, i.e. any possible •spatial• relations among substances.)

•That's one result that intellect can—at least tentatively—achieve concerning the causes of sensitive intuition. Here's another. The possibility of changes and successions—the principle of which, so far as it is sensitively known, resides in the concept of time—presupposes a *thing that changes*, i.e. stays in existence while its opposed states follow in succession; and this can't happen unless the changing thing is sustained by something else. And so the concept of time, as a unique and unchangeable⁵ infinite in which all things

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exist and stay in existence, is the *phenomenal eternity* of the general cause.

But it seems wiser to keep close to the shore of the knowledge granted to us by the mediocrity of our intellect,

rather than setting sail into the deep sea of mystical inquiries, as Malebranche did. ·I mention him· because his view that we see all things in God is close to the opinions I have presented in this Note.

Section V: The method of dealing with the sensitive and the intellectual in metaphysics

23. In all sciences whose principles are given intuitively, either •by sensual intuition (experience), i.e. natural science, or •by intuition that is sensitive but pure (the concepts of space, time and number), i.e. mathematics, **practice gives rise to method.** When a science has achieved a certain comprehensiveness and orderliness, *then* it can become clear through trial-and-outcome what direction and what procedures we should take so as to bring it to completion, purifying it by scrubbing off the stains of mistakes and confused thoughts. That's what grammar did: after abundant uses of speech it had a basis for rules and training; and elegant examples of poems and orations provided a basis for rules of style. But in sciences of this kind, whose basic concepts and axioms are given by sensitive intuition, the only use for intellect is **logical**—i.e. subordinating items of knowledge to one another, steering by the principle of non-contradiction: for example, subordinating phenomena to more general phenomena, and subordinating the conclusions of pure intuition to the intuitive axioms.

In pure philosophy—which is what metaphysics is—the basic concepts and axioms themselves are first given by the pure intellect itself; so they don't have the immunity to error

that intuitions have, ·which means that metaphysics doesn't have such immunity either, so that here· **method comes before all science**; and if you try to achieve anything before the precepts of this method have been properly hammered out and firmly established, your attempt will be seen as rashly conceived, an empty plaything of the mind, not acceptable. [Kant builds into the first sentence of this paragraph a clause equating 'the basic concepts... etc.' with 'the use of the intellect in dealing with principles is **real**.' [For the contrast between 'logical' and 'real' uses of the intellect, see the second paragraph of **5** on page 5.]

In metaphysics the right use of reason •sets up the very principles themselves and •brings to our attention both the objects and the axioms that are to be applied to them; so the very beginning of this science consists in expounding the laws of pure reason, and and the criterion of truth ·in metaphysics· rests on distinguishing these laws from fraudulent ones. Apart from the material that logic teaches generally to all the sciences, the method of metaphysics—the method that fits its unique character—is not well known at the present time and may be wholly unknown. So it's no wonder that those who have devoted themselves to this

research, unceasingly rolling their stone of Sisyphus [see Glossary], have so far made almost no progress. This is not the place to go fully into such a notable and far-ranging question, and I shan't do that. But I shall briefly sketch one important part of this method, namely protecting intellectual knowledge from contagion by sensitive knowledge. If you aren't careful this intruder will creep up on you in your application of principles, and will even produce spurious principles in the guise of axioms.

24. In metaphysical matters concerning the sensitive/intellectual line, *method* boils down to this all-important rule: *take great care not to let the home-grown principles of sensitive knowledge emigrate and move over into intellectual affairs.* In any intellectually enunciated judgement the predicate is a condition without which the subject is asserted to be unthinkable, so the predicate is the source of our knowledge of that subject. [The first clause in that sentence may strike you as wild, but consider: If a judgment *S is P* purports to be intellectual rather than sensitive, the basis for it can't be anything empirical; so it has to be on the intellectual side of the line, i.e. must concern what is involved in *thinking* about S; which amounts to interpreting *S is P* as saying that if you don't bring P into your thought you won't be able to think about S.] Accordingly if the predicate is a sensitive concept it can't deliver anything except sensitive knowledge, so it will properly fit only a judgement-subject whose concept is likewise sensitive. If it is applied to an intellectual concept, the resultant judgment will be valid only

according to subjective laws; so it can't be predicated and stated objectively concerning the intellectual notion itself. All it can do is to state a necessary condition of there being any chance of sensitive knowledge of the given concept.⁶

My topic here is *the metaphysical fallacy of switching* [see Glossary]: it's the trick the intellect plays when it treats a sensitive concept as though it were an intellectual one, thus working a *switch*. A hybrid axiom—i.e. one that tries to pass off sensitive wares as being fit for use with intellectual concepts—is what I call a switching axiom. These spurious axioms have led to intellectual deceptions that have disastrously permeated the whole of metaphysics. We need a readily available and clearly recognisable criterion, a *touchstone*, for distinguishing these judgements from genuine ones; and if it should happen that such an axiom seems to be firmly attached to the intellect, we need an assaying technique that will help us to get an accurate view of much of what the switching axiom says pertains to the sensitive domain and how much to the intellectual. To achieve this we must dig.

25. Here then is the principle of reduction [see Glossary] for any switching axiom:

If something P involving the relations of space and time is predicated universally of some intellectual concept S—'All S is P'—this can't be presenting P as objectively true of S in itself. All it says is that P is a condition that must be satisfied if S is to be sensitively knowable.

Any such axiom would be spurious and rashly and haz- ardously asserted, if not outright false. Here is why: since S is conceived intellectually it pertains to •the object, whereas P (since it involves space and time) pertains only to •the conditions of sensitive human knowledge; perhaps that isn't the only kind of knowledge; and if it isn't, then P doesn't cover the whole territory and thus doesn't grip onto S itself. And the reason why the intellect is so easily subject to this fallacy of switching is that it is led astray by the authority of a certain other rule that is utterly genuine:

If something can't be known by *any* intuition at all, that means that it is unthinkable and thus impossible. Now, we can't by any effort of the mind •have or even •imagine any intuition except the one that fits the form of space and time. So we are led to regard every intuition that isn't spatio-temporal—e.g. God's pure intellectual intuition, which Plato calls an 'Idea'—as impossible. And so we subject all possible things to the sensitive axioms of space and time.

26. [The items in the following three-part classification are the topics of **27**, **28** and **29** respectively. After that, **30** brings the work to a close.] Switching axioms arise from illusions in which sensitive cognition masquerades as intellectual knowledge. •There are many such illusions, but• they fall into three kinds. Here are their general formulae:

- (1) The sensitive condition that has to be satisfied if it's to be possible to **have an intuition of an object** is also a necessary condition for the possibility of the object.
- (2) The sensitive condition that has to be satisfied if it's to be possible to **collect and survey facts about an object**

so as to form an intellectual concept of it is also a necessary condition for the possibility of the object.

- (3) The sensitive condition that has to be satisfied if it's to be possible to **bring an object under a given intellectual concept** is also a necessary condition for the possibility of the object.

27. Here's a switching axiom of class (1): *Whatever exists is somewhere and sometime.*⁷ This spurious principle implies that all entities—even if they were known intellectually—are bound in their existence by the conditions of space and time. An upshot of this was that empty questions were bandied about concerning where in the corporeal universe immaterial substances are located, where the seat of the soul is, and so on. (•How did immaterial substances enter the picture? Well, they have something in common with intellectual things, namely that neither is given in sensitive intuition and neither can be represented in that •spatial• form; so they are mixed together—a jumble of immaterial substances and intellectual items, like a jumble of squares and circles.) These disputes have been so empty that (as the old saying has it) it often looked as though one disputant was milking a he-goat while the other held a sieve underneath. Immaterial things are virtually present in the corporeal but not locally present, •i.e. they are active in the corporeal world but aren't *located* in it. Now, the only interactions that space allows for is between material bodies. Then what constitutes the external relations of forces between immaterial substances, and between them and bodies, completely escapes the human intellect. . . .

[In a note at the end of the work, Kant remarks that the need for brevity has led him to say things that might seem rashly dogmatic, and he agrees that further explanation of some of them should be provided in a context where no length-limit has been imposed. He cites this present passage as an example, and offers this explanation:]

The situation is *not* this:

- Your soul interacts with your body because it is located in a certain place in your body,

but rather this:

- What gives your soul a determinate place in the universe is its interaction with your body.

When this interaction is broken off your soul no longer has a spatial location. So its locatedness is derivative; it's something your soul has because a certain condition is fulfilled; it's not a basic necessary condition of its existence. Things that can't be objects of external senses like those we humans have—i.e. immaterial things—are absolutely exempted from •the condition that has to be satisfied by everything that *can* be sensed externally, namely •being in space. So we can deny that the soul is **unconditionally and immediately** located, while still attributing to it a **conditional and derivative** locatedness.

[And now we return to 27.]

When philosophers come to the concept of a supreme being outside the world, they are deluded by these shadows that flit before the intellect; how badly? words fail me! They make up the story that God is *located* in space, and they try to compensate for this limitation on him by conceiving his location as *infinite*. But it's absolutely impossible to be in several places at once; different places are outside one another, so something in several places at once would have to be outside itself and present to itself externally, which is a contradiction.

What about time? These philosophers don't merely •cut time loose from the laws of sensitive knowledge but positively •transfer it beyond the boundaries of the world to God, who is outside the world, as a condition of his existence. That lands them in an insoluble maze in which they torment their minds with absurd questions, such as 'Why didn't God create the world many centuries earlier than he did?' They persuade themselves that there's no problem about God's seeing things that are present, but find it hard to understand how he sees things that haven't yet happened. (As if a necessary being exists *through* time, so that when some part of his own duration has been lived through he has to see in advance the eternity that still lies ahead of him, while also seeing what is happening just then.) All these problems vanish like smoke when the notion of time is rightly understood.

28. Preconceptions in class (2) are even more secretive ·in how they go about ambushing the understanding·. In some cases the mind can't reach a certain intellectual concept except through sensitive conditions, and those conditions allow the preconceptions to slip through and impose on the intellect. I'll present two of these, one concerning knowledge of **quantity**, the other concerning knowledge of **qualities** in general.

- (i) Every actual aggregate is capable of being numbered; so every quantity is finite.

- (ii) Whatever is impossible contradicts itself.

The concept of *time* doesn't enter into the notion of either predicate (·numerable, self-contradictory·), and isn't considered to be a mark of either subject; but it does in each case serve as the medium in which the concept of the predicate is formed. So it affects the intellectual concept of the subject because it is only with its help—i.e. the help of the notion of

time—that we reach the latter concept.

Let's start with **(i)**. **(a)** For any quantity or series to be known distinctly it must be known through **successive** co-ordination; so the intellectual concept of a quantity and an aggregate can be reached only with the help of this concept of **time**; and it never reaches completion unless the synthesis—·i.e. the one-by-one enumeration·—could be achieved in a finite time. So an infinite series of co-ordinates is

- not distinctly thinkable by us because of the limits of our intellect;

but then a switching fallacy enters the picture and has us concluding that such a series is

- impossible.

(b) The laws of the pure intellect require that every series of effects has a source, and therefore has a boundary; and the laws of sensitive knowledge require that every series of co-ordinate things has an assignable beginning. Of these two results, the first concerns the dependence of the whole series, while the second concerns the measurability of the series; and ·through a switching fallacy· they are wrongly held to be identical.

(c) Something similar happens with the argument of the intellect proving that **(c₁)** if there's a substantial composite there must be the sources of this, i.e. things that are simple. Something gets added to this—having been secretly 'switched' in from sensitive knowledge—namely that the breaking down of such a composite into its parts wouldn't go on to infinity, i.e. that **(c₂)** any composite has a definite number of parts. This is certainly not a twin of **(c₁)** and shouldn't be substituted for it.

So these propositions:

- (a₁)** The quantity of the world is limited (not the highest quantity);

- (b₁)** The world manifests its cause;

- (c₁)** Bodies consist of simple things;

can be known on the authority of reason, which is perfectly trustworthy. But these next three propositions:

- (a₂)** The universe in its mass is mathematically finite;

- (b₂)** The age of the universe can be given in terms of units of measurement;

- (c₂)** There is a definite number of simple things constituting any body;

openly proclaim their origin in the nature of sensitive knowledge; and whatever truth there may be in them they labour under the undoubted blemish of their origin.

Now for case **(ii)**, ·involving the proposition that *Whatever is impossible contradicts itself*. In this case, as with **(i)**, the concept of time serves as the medium in which the concept of the predicate (self-contradictory) is formed·. This second switching axiom arises from recklessly converting the principle of ·non·-contradiction,

·PNC: Whatever is self-contradictory is impossible·.

The concept of time comes into PNC, which declares the impossibility of any state of affairs in which contradictory things are applied to one thing at one time, i.e.

Whatever simultaneously is and is not is impossible.

This is perfectly true and utterly evident, because in it something is predicated by the ·intellect to something that has been given according to ·sensitive laws. But if you convert this, saying

Everything impossible is-and-isn't-at-the-same-time,
i.e. involves a contradiction,

you are predicating of an object of reason something involving sensitive knowledge, thus subjecting the intellectual concept of possible/impossible to the conditions of sensitive knowledge, namely the relations of time. What you are saying is perfectly true for the laws by which the human

intellect is constrained and limited, but it doesn't hold objectively and generally. Our intellect becomes aware of an impossibility only when it sees that opposite things are being simultaneously said about one thing, i.e. only when there's a contradiction. When that situation doesn't arise, the human intellect has no basis for making any judgement of impossibility.

·What the 'switching' does here is to· treat the subjective conditions of judging as objective, which is tantamount to concluding that anything that the human intellect can't do is therefore not permitted to any intellect at all. ·By elementary logic, the proposition formed by converting PNC, i.e. the bold-type indented one immediately above·, is equivalent to

Whatever doesn't involve a contradiction is possible.

On the strength of this there has been an explosion of invented 'forces', freed from the obstacle of self-contradiction, bursting out from people whose minds go in for theoretical structures (or, perhaps go in for intellectual fantasies). . . . A falsely fabricated force can be impossible without being self-contradictory; so it's wrong to take any ·supposed· basic force to be possible unless it has been given by experience; you can't get there just by sharp thinking.

29. The switching axioms in class **(3)** (see **26**) are like those in class **(2)** in this: conditions that belong to a subject are rashly transferred to objects. But they differ in this: the effect of the switch is that things that are given sensitively—i.e. space and time—are. . .

- (in **(2)**) . . . our only route to the intellectual concept,
- (in **(3)**) . . . needed for us to know whether the intellectual concept can be applied to something given in experience.

. . . .An example of **(3)** is the maxim—common in certain schools—that *whatever exists contingently has at some time*

not existed. This spurious principle arises from the poverty of the intellect, which can usually see the nominal marks of contingency or necessity but rarely the real ones. 'Is it possible for this substance not to exist?' We aren't likely to be able to answer this *a priori*, ·getting right down to the meat of the matter·; all we can do is ·superficially· to go by the fact that at one time the substance didn't exist. If it didn't, then the substance certainly *is* contingent, The principle

•Whatever doesn't exist at some time is contingent is just plain true. . . . But its converse,

•Whatever is contingent is non-existent at some time, relies on the conditions under which *we can see* whether something exists necessarily or contingently. [That's what Kant wrote. He should have said ' . . . under which we can see that something exists contingently'.] So it should be stated as the subjective law that it really is:

If there's no evidence that a certain thing at one time didn't exist, common intelligence gives us no basis for inferring that it is contingent.

This eventually turns into an objective condition, implying that without sometime-nonexistence there would be no room for contingency; and that yields a spurious and erroneous 'axiom', ·namely:

If a thing has always been in existence, its existence is not contingent,

This *is* erroneous·, because this world is sempiternal, i.e. exists at every time, yet it exists contingently.

30. Closely associated with these switching principles there are certain others ·that are equally damaging·. These indeed don't stain any intellectual concept with a taint of sensitive knowledge; but they so play upon the intellect that it takes them for arguments drawn from the object, whereas really we are drawn to them only by their *fit* [see Glossary] with the free

and ample use of the intellect. . . . Like the other switching-principles, these rest on subjective grounds, but unlike the others they *don't* draw from the laws of sensitive knowledge; their source is the laws of intellectual knowledge itself, laws setting the conditions under which the intellect sees itself as free and agile and sharp.

Let me end this dissertation with some remarks about these principles, which have never before been clearly presented, as far as I know. I call them 'principles of *fit*'. They are rules of judgment that we gladly accept and cling to as though they were axioms, solely because if we don't follow them scarcely any judgement about a given object would be permitted to our intellect. I shall now present three principles of *fit*.

(i) *All things in the universe happen in accordance with the order of nature.* Epicurus affirmed this without any restriction; and all philosophers affirm it with one voice, subject only to very rare exceptions that may have to be admitted under extreme necessity. [This refers to miracles that are well-attested and seem not to involve trickery.] But we accept this not because

- we have so wide a knowledge of the events in the world according to the common laws of nature,

or because

- we can see that supernatural events are impossible or very nearly so,

but because

- if we departed from the order of nature we would have no use at all for the intellect; and the hasty appeal to supernatural events is the couch on which a lazy intellect reclines.

For the same reason, we carefully keep *fairly miraculous events* out of our accounts of phenomena—I'm talking here about the influence of minds on bodies. We don't actually

know what is going on there; so if we postulate nearly miraculous events in which minds influence bodies we'll do ourselves great harm by turning our intellect away from the light of experience which provides its only chance of getting laws of judging and towards shadows of detachable properties and causes that are unknown to us.

(ii) *Principles are not to be multiplied beyond what is absolutely necessary.* This well-known canon expresses the leaning towards unity which is proper for the philosophical spirit. We accept this not because either reason or experience has shown us a causal unity in the world, but because our intellect drives us to *seek* such unity because it thinks it has succeeded in explaining phenomena only to the extent that it has been able to bring a very large number of things under a single principle.

(iii) *Nothing material comes into existence or goes out of existence; the only changes in the world are changes in the forms of things that stay in existence throughout the change.* This postulate, on the recommendation of the common intellect, has pervaded all the schools of philosophers; not because anyone has thought it to have been taken as discovered or demonstrated by *a priori* arguments but because if matter itself is said to be in flux and transitory nothing stable and durable will be left which could serve in the further explanation of phenomena according to universal and perpetual laws and in this way promote the use of the intellect.

So much, then, as regards method, especially in reference to the distinction between sensitive and intellectual knowledge. If it ever happens that a more careful investigation of this method leads to its being embodied in *rules*, that will serve as an introductory science that will be immensely helpful to anyone planning to penetrate the very recesses of metaphysics.

The bewildering passage to which attention was drawn on page 17:

the Latin: *Totum e substantiis necessariis est impossibile. Quoniam enim sua cuique existentia abunde constat, citra omnem ab alia quavis dependentiam, quae plane in necessaria non cadit: patet, non solum commercium substantiarum (h. e. dependentiam statuum reciprocam) ex ipsarum existentia non consequi, sed ipsis tanquam necessariis competere omnino non posse.*

the emt-website version: It's impossible for two or more necessarily existing substances to constitute a single *whole*. No such substance depends on anything else for its existence; so it is clear that we have not only this result: the interaction of substances (i.e. the two-way dependence of their states) doesn't follow from their mere existence, but also this one: Interaction can't be attributed at all to substances that are necessary things.

translated by L. W. Beck: A whole of necessary substances is impossible. Since the existence of each is securely established apart from any dependence on anything else (which clearly does not hold of necessary things), it is evident not only that the interaction of substances (i.e. the reciprocal dependence of their states) does not follow from their existence itself, but also that it cannot be attributed to them as necessary things at all.

translated by G. B. Kerferd: A whole out of necessary substances is impossible. For the existence of each such substance is abundantly established apart from any dependence upon anything else whatsoever, which dependence does not enter into necessary things at all. And so it is clear that not only does the interaction of substances (that is, the reciprocal dependence of their states) not follow from their own existence, but as being necessary substances it is absolutely impossible for it to apply to them.

The passage from page 3 that clashes with it:

the Latin: *Nexus autem formam mundi essentialem constituens, spectatur ut principium influxuum possibilium substantiarum mundum constituentium. Actuales enim influxus non pertinent ad essentiam, sed ad statum, et vires ipsae transeuntes, influxuum causae, supponunt principium aliquod, per quod possibile sit, ut status plurium, quorum subsistentia ceteroquin est a se invicem independens, se mutuo respiciant ut rationata.*

the emt-website version: What's essential to the world *qua* world is there being some principle that makes it *possible* for there to be transeunt causation among these substances—possible for these substances, though independent of one another so far as their existence is concerned, to depend on one another for the states they are in.

translated by Beck: But the bond constituting the essential form of a world is regarded as the principle of the possible influences of the substances constituting the world, the actual influences belonging not to essence but to state. The transeunt forces themselves, the causes of the influences, presuppose some principle through which it is possible that while a plurality of things are, so far as their subsistence is concerned, independent of one another, their states may mutually refer to one another as consequents.

translated by Kerferd: But the bond constituting the essential form of a world is seen as the principle of the possible influxes of the substances which constitute the world. For actual influxes do not pertain to the essence but to the state, and the transeunt forces themselves, which are the causes of the influxes, suppose some principle by which it may be possible that the states of the several things whose subsistence is none the less independent each from the other should be related to one another mutually as grounded determinations.