

# Critique of Pure Reason up to the end of the Analytic

Immanuel Kant

1781

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[Brackets] enclose editorial explanations. Small ·dots· enclose material that has been added, but can be read as though it were part of the original text. Occasional •bullets, and also indenting of passages that are not quotations, are meant as aids to grasping the structure of a sentence or a thought. Each four-point ellipsis. . . indicates the omission of a brief passage that seems to present more difficulty than it is worth. Longer omissions are reported between square brackets in normal-sized type. This version follows (B) the second edition of the *Critique*, though it also includes the (A) first-edition version of the Preface and of one other extended passage. Numerals like vii and 27 in the margins refer to page-numbers in B; ones like A xii and A 242 refer to A, and are given only for passages that don't also occur in B; and the likes of ..68 mean that B 68 (or whatever) started during the immediately preceding passage that has been omitted. These references can help you to connect this version with other translations or with the original German. Cross-references to other parts of this work include the word 'page(s)', and refer to page-numbers at the foot of each page. When something is referred to as 'on page n' it may run over onto the next page.

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## The analytic of principles

..169 [The Analytic is divided into two main parts, Book 1 the analytic of concepts (which began on page 47) and Book 2 the analytic of principles, which begins now.] General logic is constructed on a plan that corresponds quite precisely with the classification of the higher faculties of knowledge. These are: •understanding, •judgment, and •reason. (In everyday informal speech, all three of these are brought under the general label 'understanding'.) The analytic part of logic tracks this three-part classification of the higher faculties by addressing itself to •concepts, •judgments, and •inferences. [When 'judgment' occurs in the singular, without 'the' or 'a', it stands for the faculty of judgment, i.e. the capacity for judgment; not otherwise.]

170 Since this merely formal logic abstracts from all •content of knowledge (whether pure or empirical), and deals solely with the •form of thinking. . . .as such, it can include in its analytical part the canon [see note on 'canon' on page 25] •not just for understanding and judgment, but also for reason. For the form of reason has its secure rules that can be discovered *a priori* simply by analysing the actions of reason into their components, without needing to attend to the special nature of the knowledge that is involved.

Transcendental logic can't imitate general logic by dividing into treatments of understanding, judgment, and reason. That's because transcendental logic, unlike general logic, is limited to a definite content, namely the content of pure *a priori* items of knowledge; and it turns out that there's no such knowledge to be had through reason. When reason is used in a transcendental way the result is not •truth but •illusion; which implies that it has to be handled not in the •transcendental •analytic, but rather in the transcendental •dialectic.

•While we are still in the analytic, therefore, we are left

with two faculties to study—understanding and judgment. They have their canon of objectively valid (and therefore true) use in transcendental logic, so they belong in its analytical part. It's only reason that is altogether dialectical when it 171 tries to establish something about objects *a priori* and to extend knowledge beyond the bounds of possible experience. Its illusory assertions don't fit into a canon of the sort that the analytic is meant to contain.

So the analytic of principles will be a canon solely for *judgment*, teaching it to apply the concepts of the understanding. . . .to appearances. For this reason, although I announce my topic in Book 2 as 'principles of the understanding', I'll use the title 'doctrine of judgment' as fitting more closely what I'll actually be doing.

### Introduction: Transcendental judgment in general

If the •understanding in general is explained as the faculty of *rules*, then •judgment is the faculty of *applying rules*, i.e. of settling whether something falls under a given rule. General logic doesn't offer help to judgment. It *can't* do so: . . .if 172 it tried to give general instructions for how to apply rules, i.e. how to distinguish whether something does or doesn't fall under them, it would have to do this through another rule. But this, just because it is a rule, would require another application of judgment, and that would create the impossible situation in which judgment couldn't do anything until after it had done something else! So it becomes clear that although •understanding can be instructed, and equipped with rules, •judgment is a special talent that can be used but can't be taught. It's the active ingredient in so-called mother-wit, and the lack of it can't be made good by any school. A school can provide •a limited understanding with an abundance of rules borrowed from the insight of

others—grafting them onto •it, as it were—but the ability to use them correctly must belong to the pupil himself. If he doesn't have this natural gift, he can't be made safe from misusing his judgment by any rule that one might prescribe to him.<sup>13</sup>

173 Thus, it can happen that a physician or judge or statesman has many fine pathological or juridical or political rules in his head, and is even able to teach them well, and yet stumbles in applying them, either because

- he is short of the natural power of judgment (though not of understanding); he understands the universal in the abstract but can't tell whether a given concrete case falls under it;

or because

- he hasn't been trained well enough for this act of judgment, through examples and actual practice.

This is the one great benefit of examples: that they sharpen judgment. When it comes to correctness and precision of intellectual insight, examples more often do some harm, in either of two ways. •They very seldom fit the antecedent of the rule precisely enough. •Also, they often weaken the understanding's effort to grasp rules properly, in all their universality and independently of the details of experience, the result being that we become accustomed to using those

174 rules as verbal rules-of-thumb rather than as principles. So examples are training-wheels for the faculty of judgment, and someone who lacks the natural talent for judgment can

<sup>13</sup> The right word for a lack in one's power of judgment is 'stupidity', and there is no help for it. Someone who is dull or limited in his thinking, having nothing wrong with him except a low-grade understanding and a shortage of concepts, can be *instructed*—even to the point of becoming learned. But people of that sort usually lack judgment as well, so that it isn't unusual to encounter learned men whose applications of their science frequently show signs of that lack, for which there is no cure.

never do without them.

But although general logic can't give instructions to judgment, the situation is quite different with transcendental logic. It seems, indeed, that transcendental logic has as its own special task the correcting and securing of judgment, through determinate rules, in the use of the pure understanding. Here is why. Philosophy has achieved little if anything in the way of new *doctrine* in its attempts to bring the understanding to bear on pure items of knowledge *a priori*; but it can call on all its resources of acuteness and penetration to do good work as a *critique* of our lapses of judgment when we use the few pure concepts of the understanding that we have. But this work is only negative—it consists in instructions *not* to form such-and-such judgments.

•'What', you may ask, 'enables transcendental philosophy to give some instructions to judgment when general logic can't give *any*?' Well, transcendental philosophy has a special feature all of its own: in addition to the rule. . . .that is given in the pure concept of the understanding, it can at the same time specify *a priori* the case to which the rule is to be applied. What gives it this advantage (shared by mathematics 175 but by no other of the teaching sciences) is the fact that transcendental philosophy deals with concepts that have to be related to their objects *a priori*, so •the question of where to apply them can't be answered *a posteriori*. . . .: •if the question couldn't be answered *at all*, these concepts would have no content, which would reduce them to being mere logical forms and not pure concepts of the understanding; so •transcendental philosophy itself must, along with the rule, provide a general but sufficient account of the conditions under which objects that fit those concepts can be given.

This transcendental doctrine of judgment will contain two chapters. The first deals with the **schematism** of the pure understanding, i.e. •the sensible condition under which

alone pure concepts of the understanding can be employed. The second [starting at page 95] deals with the **principles** of pure understanding, i.e. the synthetic judgments that flow *a priori* from pure concepts of the understanding under •these conditions, and form an *a priori* basis for all other items of knowledge. [Book 2 also has a third chapter, starting on page 135, and a long Appendix, starting on page 143.]

## Chapter 1: The schematism of the pure concepts of the understanding

176 Whenever an object is brought under a concept, the representation of the object must be *homogeneous with* [*gleichartig* = 'of the same sort as'] the concept. That is, the concept must •contain whatever is represented in the object to which it is to be applied, for that's just what it *means* to say 'This object is •contained under that concept'. Thus the empirical concept of a plate is homogeneous with the pure geometrical concept of a circle, for the roundness that is thought in the concept of the plate can be intuited in the circle. [In several passages—two of which are reported rather than included in the present version—Kant expresses the notion of a thing's •falling under or •fitting or (as he sometimes says) •standing under a concept or general word by saying that the thing •is 'contained under' the concept or word. The word he uses could be translated a bit differently, but the 'contain' is retained in each case (e.g. the Quantity paragraph on page 49), in deference to the present passage where 'contain' clearly does capture the intended meaning.]

177 But •pure concepts of the understanding have nothing in common with •empirical intuitions (or indeed with any sensible intuitions), and can never be met with in any intuition. No-one would say that any category—for example *causality*—can be intuited through the senses and is contained in

appearance. Then how is it possible to apply the categories to appearances? to bring appearances under the categories? It's just because of this question, a natural and important one, that we need a transcendental doctrine of judgment—a doctrine showing *how* pure concepts of the understanding might apply to appearances. Such a doctrine isn't needed in any of the other sciences. In them the concepts through which the object is thought •in the abstract are not so different and heterogeneous from the ones that represent it •as a concrete particular; so that they don't need to provide a special discussion of the application of the general concept to the particular object. [In that sentence, 'the ones that represent it' etc. is naturally taken to mean 'the *concepts* that represent it' etc.; similarly with Kant's German at this point. But presumably he meant 'the *representations* that represent it' etc.—this being a word that covers intuitions as well as concepts.]

If a category is to be applied to an appearance, there has to be some third thing that is like the category on the one hand and like the appearance on the other. This mediating representation must be *pure*, containing nothing empirical, and yet must also be

- intellectual on the one hand, and
- sensible on the other hand.

Such a representation is the *transcendental schema*.

[Kant goes on to explain this, in terms that are exceptionally hard to follow, although the basic message is clear enough. It is that for any category C the transcendental C-schema is a representation of C-in-time, a temporalized cousin of C. This fits the requirements laid down in the preceding paragraph: the C-schema

- has the same conceptual content as C, on the one hand, and it
- has temporality in common with any sensible appearance, on the other hand.

178 Kant continues:] Hence the category can be •applied to appearances because of the temporality which, as the schema of the concept of the understanding, mediates the •application.

After what I have proved in the deduction of the categories, I hope no-one will still be wondering which of these is true:

- These pure concepts of the understanding are of merely empirical use; as conditions of a possible experience, they relate *a priori* solely to appearances.

- These pure concepts have a transcendental use; as conditions of the possibility of things of *any* kind, they can be applied to objects in themselves, without any restriction to our sensibility.

•The second of these is quite out of the question. For we have seen (1) that concepts mean nothing to us unless an object is •given either for the concepts themselves or at least for the elements that make them up; so they can't pertain to things in themselves, without regard to how and whether they can be •given to us. We have also seen (2) that the only way in which objects are given to us is through states of our sensibility; and, finally, (3) that pure *a priori* concepts must

179 contain, along with

- whatever they need to do the work of the understanding,

something further, namely *a priori* formal conditions of sensibility (namely those of inner sense) that contain the general condition that has to be satisfied if the category is to be applied to any object. I shall call this formal and pure condition of sensibility to which the use of the concept of the understanding is restricted the 'schema' of this concept of the understanding, and I shall call what the understanding *does* with these schemas the 'schematism' of the pure understanding.

The schema is in itself always only a product of the imagination; but it mustn't be confused with an *image*. . . .

What is the difference? Well, if I place five dots in a row—

•••••

—this is an *image* of the number five. In contrast with that, if I only *think* of a number in a general way, what I am representing to myself is not an *image*, but a *method for representing in an image* a multitude that fits a certain concept. In some cases—e.g. with the concept of 1,000—it might be quite a task to survey such a multitude and compare it with the concept. Now this representation of a general procedure of the imagination for providing an image for a concept is what I call 'the schema' for this concept.

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In fact it is schemas, not images of objects, that underlie our pure sensible concepts. No image would ever be adequate to the general concept of *triangle*. An image couldn't have the generality of the concept, which is what it would need to be valid for all triangles, right-angled or obtuse-angled, etc.; it would always be limited to one part of this *triangle* territory. The schema of the triangle can't exist anywhere but in thought; it is a rule of the synthesis of the imagination with regard to pure shapes in space. [Kant writes that the schema *signifies* or *stands for* a rule etc., but it seems clear that his considered view is that it *is* a rule.] •So much for •pure sensible concepts such as those of geometry. What about •empirical sensible concepts? In the case of empirical sensible concepts, the gap between the concept and the object of experience that it applies to (or an image of that object) is even greater than the one we have been looking at with pure sensible concepts. An empirical concept is always related immediately to the schema of the imagination, as a rule for creating a detailed intuition that fits the concept in question. The concept of *dog* signifies a rule that guides my imagination in sketching the shape of a four-footed animal in a general manner, without being restricted to any one particular shape—which is what

I would find in experience and in any image that I could have of a concrete particular thing. This schematism of our understanding, in its application to **appearances** and their mere form, is an art concealed in the depths of the human soul; Nature won't easily open it up to us, letting us see how it works. All we can say about it is this:

- the image is a product of the empirical faculty of reproductive imagination [see page 70];
- the schema of sensible concepts (such as figures in space) is a product. . . .of pure *a priori* imagination, through which and in accordance with which the images first become possible.

The image is never in itself completely congruent with the concept; it has to be connected with it by means of the schema that the concept designates. . . .

Rather than holding things up by a dry and boring analysis of the •general requirements for transcendental schemas of pure concepts of the understanding, I prefer to present them •one by one•, connecting them with the categories and ordering them accordingly.

The pure image of all magnitudes for outer sense is •space; the pure image of the magnitudes of all objects of the senses as such is •time. But the pure schema of **magnitude** [note the singular], as a concept of the understanding, is •number, which is a representation that comprises the successive addition of similar units to one another. So *number* is simply the unity of the synthesis of the manifold of a homogeneous intuition as such. . . .

**Reality**, in the pure concept of the understanding, is what corresponds to *sensation* in general. The concept of reality, therefore, points to a •being in time. The concept of **negation** represents a not-being in time. The opposition between these occurs in the distinction, for a single stretch of time, between filled and empty. . . . Now, every sensation

has a degree or magnitude through which it can more or less fill the same time—i.e. occupy inner sense more or less completely—right down to where it ceases altogether in nothingness. Think of •hearing a noise—the very same noise—as it gradually fades into silence; or seeing a house—the very same house—with one's visual field becoming ever fainter until eventually one isn't seeing anything•. Thus, there can be. . . . a •transition from reality to negation, so that every reality can be represented as a quantum, •a greater or lesser *degree of intensity* of sensation•. The schema of a reality, as the quantity of something filling time, is just this •transition, this• continuous and uniform generation of that quantity in time, as one gradually ascends in time from no-sensation to higher and higher intensities of sensation, or gradually descends in time from sensation that has a certain degree to its disappearance.

The schema of **substance** is the persistence of the real in time, i.e. the representation of the real as •a substratum of empirical goings-on in time—and thus as •something that endures while everything else changes. Time itself doesn't pass away, but changeable things pass away *in* it. Thus, what corresponds in appearance to •time (which lasts, and doesn't pass away) is •substance (which lasts and doesn't pass away). Fixing how events are placed in time—which follow which, and which are synchronous with which—can only be done in relation to substance.

The schema of cause and of the **causality** of a thing in general. . . .consists in the rule-governed succession of the manifold—•of the great complex variety of events that unroll through time•.

The schema of **community**, or of the two-way causality between substances in which they affect one another's properties (•not one another's existence•), is the rule-governed simultaneity of the states of one with the states of the other.

The schema of **possibility** is the agreement of the synthesis of various representations with the conditions of time as such (e.g. since opposites can't exist in one thing at the same time, they can only exist one after another). . . .

The schema of **actuality** is existence at some definite time.

The schema of **necessity** is the existence of an object at all times.

You can see from all this that the schema of each category contains, and makes representable, something to do with time, namely:

- magnitude: the generation (synthesis) of **time** itself, in the temporally drawn-out apprehension of an object;
- quality: the synthesis of sensation (perception) with the representation of **time**, i.e. the filling of time;
- relation: the connection of the perceptions with one another at all **times** in accordance with a rule of time-determination;
- modality: **time** itself, as the correlate of the facts about whether and how an object belongs to time.

185 So the schemas are nothing but *a priori* rule-governed aspects of time. Taking them in the above order: the •time-series, the •content of time, the •order of time, and finally the •scope of time in regard to all possible objects.

This makes it clear that the schematism of the understanding. . . amounts to the unity of all the manifold of intuition in inner sense, and to nothing else. That means that it indirectly comes down to the unity of self-awareness [see pages 66 and 75], as the active counterpart to inner sense, which is passive. Thus the schemas of the concepts of pure understanding are what enable the concepts to relate to objects, and thus to have significance; nothing else plays this role. So the bottom line is this: the categories can't be used in any way except empirically, because all they do is to bring

appearances under general rules of synthesis. . . .that make them fit for a thoroughgoing connection in one experience.

But all of our items of knowledge lie within the bounds of possible experience. Transcendental truth, which precedes all empirical truth and makes it possible, consists in facts about this relation of knowledge to possible experience.

But it is also obvious that although the schemas of sensibility first give the categories work to do, they also 186 •*restrict* them by limiting them to conditions that lie outside the understanding (namely, in sensibility). So the schema is really only the phenomenon of an object, the sensible concept of it, in agreement with the category. (Number is the phenomenon's quantity, sensation is its reality, constancy and the endurance of things are its substance, and eternity is its necessity, etc.) [Kant says all that in Latin.] It may seem that if we set aside the •restricting condition, we'll extend the range of the concept that was previously limited. The line of thought goes like this:

The categories, in their pure significance and without any conditions of sensibility, should hold for things in general *as they are*, rather than merely having schemas that represent things *as they appear*. So they would have a meaning independently of all schemas, with a much wider scope than they have.

It is in fact true that the pure concepts of the understanding do have significance even after every sensible condition has been peeled away from them; but it's only a logical significance—all it signifies is how representations relate to one another. The pure concepts are left with no object, and thus with no significance that could yield a concept of some object. For example: if we leave out the sensible condition of persistence, the concept of *substance* would signify merely *something that can be thought as a subject and not as a predicate of something else*. Now, I can't do a



187 thing with this notion, because it tells me nothing about what a thing has to be *like* to count as a basic subject in this way. Without schemas, then, the categories are only the understanding's concept-managing devices, and don't represent any object. Their objective significance comes to them from sensibility, which enables the understanding to do real work at the same time as it restricts it.

## Chapter 2: The system of all principles of pure understanding

In the preceding chapter I have considered transcendental judgment [singular] ·only taken in a lump, i.e.· only in connection with the *general* conditions under which it is entitled to use pure concepts of understanding in synthetic judgments. ·Now I come down to details·. My task now is to exhibit the judgments [plural] that the understanding, minding its step, actually achieves *a priori*. I aim to present these *systematically*; and for that, no doubt, the table of categories is the natural and safe lead to follow. That's because all the understanding's *a priori* knowledge has to be made out of the relation of the categories to possible experience, so their relation to sensibility as such will exhibit completely and systematically all the transcendental principles of the use of the understanding. ·Two preliminary points·:-

(1) *A priori* principles are called 'principles' not merely because they contain in themselves bases for other judgments, but also because they are *not* themselves based on higher and more universal items of knowledge. But this property that they have doesn't exempt them from being proved. Indeed they *can't* be proved in any objective way, because they ·don't rest on any facts about *objects*, but rather· lie ·subjectively· at the foundation of all *knowledge* of

objects. This allows for us to prove them from the subjective sources of *the possibility of knowledge of an object, any object*. It's not just that we *can* conduct such a proof; we *must* do so, because otherwise the propositions—the *a priori* principles—will be under suspicion of having slid illegitimately into our theorizing while we weren't watching.

(2) I shall limit my discussion to principles that are related to *the categories*. My present enquiry ·in this chapter· won't deal with •the principles of the transcendental aesthetic. . . . And for similar reasons •mathematical principles have no place in this system ·of the principles of pure understanding·, because they are derived solely from intuition, not from the pure concepts of the understanding. Nevertheless, since •they too are synthetic *a priori* judgments, there will be a place here for the issue of their *possibility*. Their correctness and apodictic certainty don't need to be established, but their possibility as cases of evident *a priori* knowledge has to be rendered conceivable and to be shown.

I'll also have to say something about the principle of analytic judgments, because of its contrast with the principle of synthetic judgments which is my only real topic. By contrasting the two, we can free the theory of synthetic judgments from all misunderstanding and lay their special nature clearly before our eyes.

### 1. The supreme principle of all analytic judgments

All our judgments, whatever they are about and whatever knowledge-state they express, have to satisfy the negative condition of *not being self-contradictory*. If a judgment is self-contradictory, then we know straight off that it is null and void, without having to look at its object. But that isn't all that is needed for a judgment to be satisfactory. A self-consistent judgment may be *false*, because it connects concepts in a way that isn't borne out by the object; or it

may be *groundless*, because there is no *a priori* or *a posteriori* support for it.

The proposition that *no thing has a predicate that contradicts it* is called the ‘principle of contradiction’, and is a universal (though merely •negative) criterion of all truth. That’s why it belongs only to logic. It is valid for all knowledge considered just as *knowledge*, without reference to its content. It says that if an item of knowledge fails this test, that completely and invalidates it. [See note on ‘knowledge’ on page 2.]

191 But the principle of contradiction can also be used •positively—not just for ruling out some kinds of falsehood and error but also for knowing truths. Specifically, for knowing the truth of an *analytic* judgment. If *A is B* is analytic, then the thought of A contains the thought of B; so *A is not B* is self-contradictory, and therefore false; and the principle of contradiction tells us this. So that principle, unaided, tells us that *A is B* is true.

So we must regard the principle of contradiction as the universal and completely sufficient generator of all analytic knowledge; but that’s as far as it goes as a sufficient condition of truth. It sets a •necessary condition for truth across the whole range of our knowledge—a *sine qua non* of truth—but it isn’t a •sufficient condition of truth for •all• our knowledge, •because it doesn’t guarantee the truth of synthetic, i.e. non-analytic, judgments•. Now our only concern here •in our critical enquiry• is with the synthetic part of our knowledge; so we can’t look to the principle of contradiction to tell us what is true, though we must be careful to accept its help in finding that certain judgments are false.

Although this famous principle (•the principle of contradiction•) has no content and is purely formal, as I have explained, it has sometimes been carelessly formulated in

a way that brings in a quite unnecessary synthetic element. I’m talking about the formulation:

•It is impossible that something should both be and not be *at the same time*.

The apodictic certainty expressed by the word ‘impossible’ isn’t needed, because it’s obvious from the proposition itself: •if it *never* happens that something *is* and *is not* at the same time, that would obviously be because it *can’t* happen. But my main complaint against the formulation is that in it• the proposition has the notion of *time* built into it. It’s as though it were saying:

•A thing = A, which is something = B, can’t *at the same time* be not-B, but it may very well be B and then *later* be not-B. A man can’t be young and old at the same time, but he can be young at one time and old, not-young, later on. 192

But the principle of contradiction is a purely *logical* principle, so it can’t bring temporal limitations into what it says. The above formulation is clean contrary to the principle’s intent. Compare these two:

- (1) A man who is unlearned is not learned.
- (2) No unlearned man is learned.

(1) speaks of two mutually contradictory predicates, saying that they don’t both apply to the same subject; and to this of course one does need to add ‘...at the same time’. But (2) doesn’t separate the subject *man* from the two predicates *learned* and *unlearned*. Rather, it takes the subject *learned man* and says that **unlearned is not applicable to this subject**. The principle of contradiction tells us that this is true, just as it stands, without time being mentioned in any way. That’s why I have altered the formulation of the principle •to *No thing has a predicate that contradicts it*•, so that the nature of an analytic proposition may be clearly expressed by it. 193

## 2. The supreme principle of all synthetic judgments

How are synthetic judgments possible? General logic has nothing to do with that problem—it needn't even know it by name! But it is the most important item on the agenda of transcendental logic; indeed, if we •confine the question to the possibility of synthetic *a priori* judgments, and if we •ask •not just about their possibility, but also• about what makes them valid and the scope of their validity, then what we have is *the only* question on the agenda of transcendental logic. Once *that* question has been fully answered, transcendental logic can achieve the whole of its ultimate purpose, which is to determine the scope and limits of pure understanding.

In an analytic judgment I keep to the given •subject•-concept, and try to make something of it. If it is an affirmative judgment I ascribe to it only what is already thought in it. If it is negative, I exclude from it only its opposite. But in synthetic judgments I have to advance beyond the given •subject•-concept, viewing it as related to something 194 altogether different from anything that was thought in it. So this relation is never *identity* or *contradiction*, and the truth or falsity of the judgment can never be discovered just by inspecting the judgment itself.

Granted, then, that we must advance beyond a given concept in order to set it synthetically alongside another concept, there must be some third thing that is needed for the two concepts to be •brought together, i.e.• synthesized. Well, then, what *is* this third thing, this bringer-together in all synthetic judgments? There is only one totality in which *all* our representations are contained, namely •inner sense and its *a priori* form, time. The synthesis of representations rests on •imagination; and their synthetic unity, which is required for judgment, rests on the unity of •self-awareness. So in these—i.e. in inner sense, imagination, and the unity of self-awareness—•we must look for the possibility of synthetic

judgments; and since all three contain the sources of *a priori* representations, they must also account for the possibility of *pure* synthetic judgments. For these reasons they are indispensably necessary for any knowledge of objects, which rests entirely on the synthesis of representations.

If knowledge is to have objective reality, i.e. to relate to an object and have meaning and significance in relation to it, the object must be able to be *given* in some way. . . . I'm using •195 'given' to signify being immediately presented in intuition, not given through some merely mediate = indirect process. So the first sentence in this paragraph comes down to this:

If knowledge is to have objective reality, i.e. to relate to an object and have meaning and significance in relation to it, the representation of the object **must be related to actual or possible experience.**

Even space and time, free as these concepts are from everything empirical, and certain as it is that they are represented in the mind completely *a priori*, would lack objective validity—would have no meaning or significance—if it weren't shown that they have to be applied to the objects of experience. . . . And so it is with concepts of every kind.

So, what gives objective reality to all our *a priori* items of knowledge is the **possibility of experience** •relating to them•. Now, experience rests on •the synthetic unity of appearances, i.e. on a synthesis guided by the general concepts [= 'concept'?] of *object of appearances*. Without such a synthesis it would be not •knowledge but a •jumble of perceptions that didn't ever hook up together according to rules of a completely interconnected (possible) consciousness, and so didn't conform to the transcendental and necessary unity of self-awareness. Thus, underlying experience there are •*a priori* principles about the form of experience, i.e. •universal rules governing how appearances are synthesised 196 into a unity. Their objective reality. . . .can always be shown

in experience, indeed in the mere possibility of experience. There can't possibly be any synthetic *a priori* principles that don't have this relation to possible experience, for without that they wouldn't have any 'third thing', any *object*, that would confer objective reality on the concepts in question.

We have a lot of synthetic *a priori* knowledge about space in general and about the figures that productive imagination draws in it, and we can arrive at judgments about this without really needing any experience; but even this knowledge would be nothing but fooling around with fantasies if space weren't regarded as a condition that has to be satisfied by the appearances that constitute the material for outer experience. So those pure synthetic judgments do relate, though only indirectly, to possible experience, or rather to the possibility of experience; and that's the entire basis for their objective validity.

197 So we come to this: Experience (with its empirical synthesis) is the only sort of knowledge that can impart reality to every other—i.e. every non-empirical—synthesis; and *a priori* knowledge (with its non-empirical synthesis) can have objective truth only if it contains what is needed for the synthetic unity of experience as such, and its *a priori* status requires that that is *all* that it contains.

The highest principle of all synthetic judgments is, therefore, this: Every object conforms to the necessary conditions of synthetic unity of the manifold of intuition in a possible experience. . . . So the conditions of the *possibility of experience* in general are likewise conditions of the *possibility of the objects of experience*; and that's the source of the objective validity of synthetic *a priori* judgments.

### 3. A systematic presentation of all the synthetic principles of pure understanding

That there are principles anywhere at all is entirely due to

•pure understanding. The understanding is the faculty of rules that govern *events*, but there's more to it than that. It is also the source of principles according to which everything that can be presented to us as an *object* must conform to rules, for without such rules appearances would never amount to knowledge of an object corresponding to them. Natural laws, even when viewed as principles governing the *empirical* use of the understanding, carry with them an expression of *necessity*, and so contain at least the suggestion of something's being settled by bases that are valid *a priori* and antecedently to all experience. But what we really have is more robust than that: Absolutely all the laws of Nature, without exception, fall under higher principles of understanding; all they do is to apply those higher principles to special cases in the domain of appearance. . . . 198

There can't be any real risk of our regarding •merely empirical principles as •principles of pure understanding, or vice versa. It's easy to avoid confusing these with one another, because of the *necessity according to concepts* that •all principles of pure understanding have and •no empirical proposition has. But there's something that we *might* confuse with principles of pure understanding, namely certain pure *a priori* principles that come from •intuitions and so shouldn't be ascribed to understanding, which is the faculty of •concepts. The principles in question—we find them in mathematics—are derived *through* the understanding *from* pure intuitions. But the understanding is still involved: it is the basis for the application of these principles to experience, i.e. for their objective validity, indeed for the possibility of such synthetic *a priori* knowledge. [Kant throws in a reminder that showing how the principles can be legitimately used is giving what he calls a 'deduction' of them. See page 57.] 199

So I shan't include the principles of mathematics among the ones I'll be discussing; but I *shall* include the higher-

level principles that are the basis for the possibility and *a priori* objective validity of mathematics. These higher-level principles must be regarded as the foundation of all mathematical principles. They proceed from concepts to intuition, not from intuition to concepts.

When pure concepts of understanding are applied to possible experience, their synthesis is being used in one or other of two different ways—*mathematical* and *dynamical*.

**m.** The synthesis is **mathematical** when it is concerned with the mere **intuition** of an appearance as such.

**d.** The synthesis is **dynamical** when it is concerned with the **existence** of an appearance in general.

**m.** The *a priori* conditions of intuition are absolutely necessary conditions of any possible experience.

**d.** The conditions of the existence of the objects of a possible empirical intuition are in themselves only accidental or contingent.

**m.** The principles of mathematical employment are absolutely necessary, i.e. unconditionally necessary, i.e. apodictic.

**d.** The principles of dynamical employment are also *a priori* necessary, but only under the condition of there being empirical thought in an experience; so their necessity is mediate and indirect, i.e. conditional. Despite their undoubted certainty throughout experience, they won't be immediately obvious in the way that the mathematical principles are.

But it would be better to postpone all this until the conclusion of this system of principles.

The table of categories [see page 52] is quite naturally our guide in constructing the table of principles, because the principles are simply rules for the objective employment of the categories. So we have this table of all the principles of pure understanding:

1. Axioms of intuition

2. Anticipations of perception      3. Analogies of experience.

4. Postulates of empirical thought as such.

I have chosen these labels—'mathematical' and 'dynamical'—for a purpose, namely to highlight differences in the evidentness of the principles and in how they are applied. You'll see soon that in both these respects the principles corresponding to the categories of (1) quantity and of (2) quality... differ from the other two sets of principles. As regards evidentness: The 1–2 principles are *intuitively* certain, meaning that they can be simply *seen* as self-evident; whereas the 3–4 principles are only *discursively* certain, meaning that they aren't self-evident but can be *shown* to be certainly true. That is a real difference, although in each case the certainty is complete; the difference is not in *how certain they are* but in *how they are certain*. So I call the 1–2 principles *mathematical*, and the 3–4 ones *dynamical*.<sup>14</sup> But don't think that we are concerned with the principles of

<sup>14</sup> Any case of combining or pulling together or synthesis is either by *assembling* or by *connecting*. **Assembling** is the synthesis or pulling together of a manifold whose constituents don't necessarily belong to one another. For example, a square involves this kind of synthesis, because the two right-angled triangles that are pulled together to make it up don't necessarily belong to one another. This is the kind of synthesis that is involved in anything homogeneous that can be *mathematically* treated. . . . **Connecting** is synthesising a manifold whose constituents *do* necessarily belong to one another—e.g. connecting a quality to a substance, or an effect to its cause. So it's a synthesis or pulling together of items that are heterogeneous but are represented as combined *a priori*. Connection (in this sense) isn't something we choose to do, like the assembling of two triangles to make a square; rather, it is laid down for us by the world. For that reason, and because it concerns the connection of the *existence* of the manifold, I call it *dynamical*. . . .

mathematics or of general physical dynamics. My topic is •the principles of pure understanding in their relation to inner sense—i.e. to inner sense *as such*•, not to the various specific states of inner sense. It is through •these principles of pure understanding that •the special principles of mathematics and of dynamics become possible. My labels for them reflect what they are used for rather than what they contain. I now proceed to discuss them in the order in which they are given in the table on the preceding page.

### 1. Axioms of Intuition

Their principle is: All intuitions are extensive magnitudes.

#### Proof

202 All appearances contain an intuition in space and time; this is a feature of their *form*, a condition that they must all satisfy *a priori*. They can't be apprehended—i.e. taken up into empirical consciousness—in any way except through the synthesis of the manifold that generates the representations of a determinate space or time, i.e. by assembling alike items (•such as regions of space, periods of time•) and being conscious of the unity of the resulting homogeneous manifold. And what we are talking about here—what this consciousness of the togetherness of alike items as a homogeneous manifold amounts to—is the concept of a magnitude, •i.e. of something of which there is a certain *amount*•. It follows that an object can't be perceived as an appearance unless one brings the concept of a *magnitude* to bear. In other words, appearances are all *magnitudes*. As intuitions in space or time, they must be represented through the same synthesis whereby space and time in general are determined.

They are in fact all *extensive* magnitudes, •as I now explain•. I call a magnitude 'extensive' when the representation

of its parts makes possible, and therefore has to precede, the representation of the whole. I can't represent to myself a line, however small, without drawing it in thought, i.e. starting with a point and generating all its parts one after another, sketching the line in intuition. Similarly with all times, however small. In representing time to myself, all I do is to think the successive advance from one moment to another, generating •the thought of• a definite amount of time out of •my thoughts of smaller• parts of time. Every intuition, just because it is an intuition, involves space and/or time; so every appearance is an extensive magnitude, •something 203 of which there is a certain *amount*•; so it can be known only through successively joining part to part in the apprehension of it. Thus, all appearances are intuited as *aggregates*, as bunches of previously given parts. This doesn't hold for magnitudes of every kind, but only for ones that we represent and experience as *extensive*.

The mathematics of space (geometry) is based upon this temporally drawn-out synthesis that the productive imagination performs in generating figures. This is the basis of the axioms of geometry, which express the conditions of sensible *a priori* intuition. . . .for instance, that between two points only one straight line is possible, or that two straight lines can't enclose a space, etc. These axioms are really just about magnitudes as such. [It's clear in Kant's German that the 'magnitudes' he is talking about are not •concrete items of which there are certain amounts, but •abstract amounts.]

As regards specific magnitudes—i.e. as regards answers to questions of the type 'How big is it?'—there are no axioms in the strict meaning of the term. Such propositions as

- If equals are added to equals, the wholes are equal,
- and
- if equals are taken from equals, the remainders are equal

204 are analytic propositions; for I'm immediately aware that the production of one magnitude is identical with the production of the other. So they aren't axioms, because axioms have to be *a priori synthetic* propositions. Again, concerning these magnitudes there are a number of propositions that are immediately certain *and synthetic*; but *they* aren't axioms either, because they aren't fully general as the axioms of geometry are. These numerical formulas, as I call them, include the proposition that  $7 + 5 = 12$ . This isn't an analytic proposition, because neither in the representation of 7, nor in that of 5, nor in the representation of the two assembled together, do I think the number 12. (I *ought* to think 12 in the addition of the two numbers, but that's irrelevant; a proposition is analytic only if in representing the subject one *actually does* think the predicate.) So the proposition is synthetic, all right, but ·it's not an axiom because· it is only a singular proposition. . . . Consider the assertion

•With three lines, two of which taken together are greater than the third, a triangle can be drawn.

205 All that is involved here is the function of productive imagination, which can draw the lines greater or smaller, letting them meet at any angle. Whereas the number 7 is possible only in one way. So also is the number 12, as thus generated through the synthesis of 7 with 5. So propositions like this mustn't be called 'axioms' (that would involve recognizing infinitely many axioms), but 'numerical formulas'.

This transcendental principle of the mathematics of appearances [presumably referring to the principle at the start of this section, 'All intuitions are extensive magnitudes'] greatly enlarges our *a priori* knowledge. For it is what makes pure mathematics applicable—not in a limited and sketchy way, but in its complete precision—to objects of experience. Without this principle, it wouldn't be so obvious that mathematics applies to objects of experience; and many people have said

self-contradictory things in this area because they haven't been guided by this principle. ·Here is the straightforward *truth* of this matter·:

- Appearances are not things in themselves; ·they are things as they appear to us through intuition·. So
- any conditions that our intuitions have to satisfy must be satisfied by appearances, i.e. by objects of appearance.

Add to this the true proposition that

- empirical intuition is possible only through the pure intuition of space and of time;

·and out rolls the conclusion that·

- what geometry asserts of pure intuition is valid of empirical intuition, ·and thus of the objects that appear to us·.

There's nothing debatable about this. It should put an end to the idle objection that objects of the senses don't have to conform to rules of construction in space, such as that of the infinite divisibility of lines or angles. If we accept this, we would be denying the objective validity of *space*, and consequently of *all mathematics*; we would no longer know why and to what extent mathematics is applicable to appearances. ·Here is the truth again, in somewhat different terms·:

- The synthesis of spaces and times is the essential form of all intuition; so
- that synthesis is what enables us to become conscious of appearance, and consequently of every outer experience; and so
- that same synthesis is what enable us to have knowledge of the objects of outer experience; so
- whatever pure mathematics establishes with regard to that synthesis of apprehension must also hold for the objects apprehended.

206 All objections are tricks by a falsely instructed reason, which wrongly claims to free the objects of the senses from the formal condition of our sensibility, and represents them—those mere appearances!—as objects in themselves that are given to the understanding. If this were right, then of course no synthetic knowledge could be had *a priori* concerning those objects, not even knowledge through the pure concepts of space. Indeed, the science that determines these concepts, namely geometry, would itself not be possible.

## 2. Anticipations of perception

Their principle is: In all appearances, anything real that is an object of sensation has intensive magnitude, i.e. a degree.

### Proof

•Perception is empirical consciousness, i.e. consciousness in which sensation occurs. Space and time can't be •perceived, •because there are no sensations of them•; they are pure, merely formal, intuitions; but the objects of •perception—or 'appearances', as I also call them—are not like that.

**Kemp Smith's faithful translation of Kant's next sentence:** Appearances contain in addition to intuition the matter for some object in general (whereby something existing in space or time is represented); they contain, that is to say, the real of sensation as merely subjective representation, which gives us only the consciousness that the subject is affected, and which we relate to an object as such.

**A guess at what Kant meant:** As well as having the •formal features that it needs if it is to be an intuition at all, an appearance also has •material features—detailed content, *sensation*—that enables it to represent some object existing in space or time. This reality-indicating sensation is in

itself merely subjective: to know of its existence you only need to be conscious of a state of your mind; but we relate this state, this sensation, to some object—it could be *any* object—outside ourselves.

Now, there can be a gradual change from (1) empirical consciousness to (2) pure consciousness; in such a change, the reality-indicating element in (1) completely vanishes, leaving only (2) a formal *a priori* consciousness of the spatio-temporal manifold. So there can be a synthesis in which the magnitude of a sensation is taken from its beginning in pure intuition = 0 up to any required magnitude. •This isn't a growth in the sensation's *extensive* magnitude, because it doesn't have any•. The progress from its having magnitude = 0 upwards is framed by space and/or time all through; so there's nothing spatio-temporal about the sensation itself (which, incidentally, stops it from counting as an objective representation); and thus its magnitude has to be *intensive*. . . . And so, because all perception involves sensation, all objects of perception have intensive magnitudes.

The label 'anticipation' fits any knowledge through which I can know and determine *a priori* what belongs to empirical knowledge. . . . But there's an element in appearances—namely, sensation (the 'matter' of perception)—that is never known *a priori*; it is indeed just what marks off empirical 207 from *a priori* knowledge. So sensation really can't be anticipated at all. On the other hand, the label 'anticipations' can very well be given to the pure determinations in space and time, in respect of shape as well as of magnitude, because they represent *a priori* something that can always be given *a posteriori* in experience. But if there's something that can be known *a priori* in every sensation—just *as a sensation*, without reference to *what kind* of sensation it is—then that deserves to be called an 'anticipation' in a very special



and remarkable sense, because it seems surprising that we should have advance knowledge of precisely the aspect of experience that can be had only *through* experience, namely, its **matter**. Yet that is how things stand.

[The preceding paragraph was inserted into (B) the second edition of the work. What comes next was, in (A) the first edition, the *start* of the discussion of the ‘anticipations of perception’.] Apprehension by means merely of sensation occupies only an instant (in saying this I am setting aside ·time-taking· series of many sensations). Sensation is the element in any appearance that doesn’t involve a temporally drawn-out synthesis proceeding from parts to the whole representation; so it has no extensive magnitude. The absence of sensation at that instant would involve the representation of the instant as empty, therefore as = 0. Now, what corresponds in empirical intuition to sensation is reality; what corresponds to its absence is negation = 0. But every sensation can decrease and *gradually* vanish. In appearances, therefore, between •reality and •negation there’s a continuity of many possible intermediate sensations, the difference between any two of which is always smaller than the difference between the given sensation and zero or complete negation. In other words, •the real in the appearances always has a magnitude; but when •it is apprehended through sensation, this happens in an instant and not through a temporally drawn-out synthesis of many sensations going from the parts to the whole; so the magnitude ·of •the real· is to be met with only in the apprehension, ·not in a synthesis leading to the apprehension·. Thus, •the real has magnitude, but not extensive magnitude. [A simple example of the distinction Kant is mainly drawing in this paragraph: for me to have the thought of an hour-long pain, I have somehow to think of an initial pain that *goes on and on* for an hour; but to think of an intense pain, I *don’t* have to think of a mild pain that *becomes more and more intense*.]

I use the label ‘intensive magnitude’ for any magnitude that is apprehended only as a unity, so that the only way multiplicity or manyness can get a grip on it is in terms of how closely it approximates to negation = 0. [Kant really does speak here of *Vielheit* = ‘multiplicity or manyness’. But in the preceding paragraph he gives a reason why one could never say how *many* degrees separate a given sensation from 0. It seems that he ought to have spoken here of *Grösse* = ‘magnitude or muchness’.] So every reality in appearances has •intensive magnitude, or •degree. . . .

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Thus, every sensation—and along with that every reality in appearances—however small it may be, has a degree or intensive magnitude that can always be diminished. Between reality and negation there is a continuity of possible realities and of possible smaller perceptions. Every colour red, for example—has a degree which, however small it may be, is never the smallest; and similarly with heat, weight, and so on.

We call a magnitude ‘continuous’ if no part of it is the smallest possible, i.e. no part is simple. Space and time are continuous magnitudes because the only *parts* either of them can have are ones enclosed between limits (points or instants), so that each part is itself a space or a time. Space therefore consists solely of spaces, time solely of times. Points and instants are only •boundaries, i.e. •positions at which space and time are limited. But •positions always presuppose the intuitions ·of the items· that they are meant to limit or pin down; so there can be no question of starting with positions and assembling them to form space or time. . . . Magnitudes of this sort can also be called *flowing*, because the synthesis of productive imagination involved in producing them is a progression in time, and the continuity of time is ordinarily expressed by saying that time ‘flows’.

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All appearances, then, are continuous magnitudes—both

in their intuition as extensive, and in their mere perception (sensation, and with it reality) as intensive. If the synthesis of the manifold of appearance is broken up, then what we have is not

- a single appearance as a genuine quantum, produced by continuing without a break a productive synthesis of a certain kind,

but rather

- an aggregate of many appearances, produced by repeating over and over again a synthesis that keeps stopping.

If I call thirteen dollars ‘an amount of money’, this is correct •if I mean it only as stating the value of a mark of fine silver. For this ·value· is a continuous magnitude in which no part is the smallest, and in which every part *could* be the value of a coin that would always contain material for still smaller coins. But •if what I’m calling ‘an amount of money’ is thirteen round dollars, then I am using ‘amount’ improperly. I ought to call it ‘an *aggregate*’, i.e. a number of coins. . . .

212 Since all appearances are continuous magnitudes—viewed extensively or intensively—it would be easy to prove with mathematical conclusiveness the proposition

- All alteration—all transition of a thing from one state to another—is continuous,

if it weren’t for the fact that the causality of alterations presupposes empirical principles, and thus lies outside the domain of a transcendental philosophy. No question of the form ‘Can x cause a thing that is F to become non-F?’ can be answered *a priori*. . . .because alterability depends on •certain features of appearances, and. . . only experience can teach us what •they are. In our present enquiry our only data are the *pure* basic concepts of all possible experience, in which there must be *nothing* empirical; so we’ll destroy the unity of our system if we anticipate general natural science, which is

based on certain basic experiences.

Still, there are plenty of proofs of our principle’s great value in enabling us to anticipate perceptions—and even to some extent to make up for our not having them, by slamming the door on all false inferences that might be drawn from our not having them. 213

If •all reality in perception has a degree, with an infinite gradation of ever smaller degrees between that degree and zero, and if •every sense must ·at each moment· have some particular degree of receptivity of sensations, it follows that

- no perception, and hence no experience, could possibly prove—whether directly or in roundabout ways, even *very* roundabout ways, by reasoning—that some part of the domain of appearance has a complete absence of all reality.

In other words, the proof of an empty space or of an empty time can never be derived from experience. The complete absence of reality from a sensible intuition isn’t something that could be *perceived*; and there’s no appearance, and no fact about the difference in the degree of reality between any appearance and any other, from which it can be *inferred*. And it’s not even legitimate to postulate it in order to explain any such difference. For even if the whole intuition of a certain determinate space or time is real through and through, i.e. no part of it is empty, there are infinite different degrees of reality that it may have—running continuously down to *nothing*—without in any way altering its *extensive* magnitude. ·So any supposed empirical evidence of empty space or empty time could in fact be evidence of very low grade reality throughout that stretch of space or time·.

I’ll give an example. Almost all natural scientists, observing a great difference in the quantity of various kinds of matter in bodies that have the same volume (observing this through differences of weight, and of opposition to other 214

matter in motion), conclude that all material bodies must have within their boundaries a certain amount of empty space. Hasn't it occurred to these students of Nature, most of whom are occupied with problems in mathematics and mechanics, that here they are basing an inference solely on a metaphysical presupposition—the sort of assumption they so loudly profess to avoid? They assume that the real in space (I can't say 'impenetrability' or 'weight' because these are empirical concepts) is everywhere the same, and varies only in extensive magnitude, i.e. in amount. This is a purely metaphysical assumption; they have no support for it in experience. I oppose it with a transcendental proof which, though it doesn't explain the differences in the filling of spaces, completely destroys the supposed need to explain those differences by postulating empty space. My proof has the merit at least of *setting the understanding free*, to think

215 about this difference in some other manner if it turned out that some other hypothesis is needed to explain the natural appearances. For my proof enables us to recognise that the following could happen:

- Two equal spaces are completely filled with different kinds of matter, so that there's matter present in every point of each; yet they differ in how resistant they are to the movements of other matter, or in how much they weigh.

The point is that every real thing has ·at any given moment· some specific degree of each of its qualities (e.g. of resistance or of weight), and that this degree can become smaller and smaller *in infinitum*, before it turns into vacuum and vanishes—without the thing's *extensive* magnitude, its amount, being even slightly lessened during this process. Think about how radiation—for instance ·radiant· heat—fills a space: it can become less and less, without leaving the smallest part of this space empty. . . . I don't mean to say that

this is what actually occurs when material bodies differ in specific gravity; all I want here is to establish from a principle of pure understanding that the nature of our perceptions allows of such a mode of explanation. . . .

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This anticipation of perception is bound to seem strange to anyone who is accustomed to transcendental thinking, and who has been made cautious by it. I have been contending that the understanding anticipates—·knows in advance of experience·—a synthetic proposition that ·ascribes a degree to everything real in ·the domain of· appearance, and so ·asserts that there are different ways a sensation can be, *apart from* differences in its empirical quality. Of course your suspicions will be raised! So the question 'How *can* the understanding in *a priori* fashion pronounce synthetically about appearances, anticipating them in respect of the sensation they involve, which in itself is merely empirical?'—this question, I say, deserves an answer.

The *quality* of any sensation, as for instance in colours, tastes, etc. , is always merely empirical and can't be represented *a priori*. But the *reality*, which corresponds to sensation as such—sensation as opposed to negation = 0—represents only something the concept of which includes *being*; all it signifies is *the synthesis involved in empirical consciousness* (i.e. in empirical consciousness as such, not in this or that specific empirical consciousness). In inner sense empirical consciousness can be raised from 0 to any higher degree, so that a certain extensive amount of intuition—as for instance an illuminated surface—may excite as great a sensation as the combined aggregate of many such surfaces has illuminated. We can completely abstract from the extensive magnitude of the appearance,

217 and still represent in the mere sensation in any one of its moments a synthesis that advances uniformly from 0 to the given empirical consciousness. Consequently, though

all sensations as such are given only *a posteriori*, their property of possessing a degree can be known *a priori*. It's a remarkable fact that the only qualitative thing we can know *a priori* about magnitudes as such is that they are continuous, and the only quantitative thing we can know *a priori* is that they do have intensive quantity, i.e. a degree. Everything else has to be left to experience.

### 3. Analogies of experience

Their principle is: Experience is possible only through the representation of a necessary connection of perceptions

#### Proof

Experience is empirical knowledge, i.e. knowledge that fixes on an object through perceptions. So it's a synthesis of perceptions; perceptions don't contain knowledge, but any item of knowledge contains a manifold of perceptions pulled together into one consciousness. This synthetic ·or pulled-together· unity is the essential thing in any knowledge of *objects* of the senses, i.e. in ·experience as distinguished  
 218 from mere ·intuition or ·sensation of the senses. In experience, however, perceptions come together only contingently; the perceptions themselves don't and can't reveal any necessity about how they are connected to one another. For ·apprehension is only a placing together of the manifold—the various elements—of empirical intuition; and we can't find in ·it any representation of any *necessity* guaranteeing that the appearances thus placed together are inter-connected in space and time. But since experience is knowledge of objects through perceptions, the relation involved in the existence of the manifold has to be represented in experience not ·as it comes to be ·subjectively· put together in time but ·as it exists objectively in time. But time itself can't be perceived; so the only way to determine

the time-involving facts about objects is through how they relate to one another in time as such. (·Why 'as such'? Well, we find out how things relate to one another given that they are *in time*, and that general fact is all that we are taking into account. We aren't making use of any facts about *where* in time this or that object is; that's precisely what we *can't* do, because facts of that sort aren't available to us directly, because time can't be perceived·.) Therefore, to determine the time-involving facts about objects we have to connect them through concepts that connect them *a priori*. Since these always carry necessity with them, it follows that experience is possible only through a representation of the necessary connection of perceptions.

The three modes of time are ·*persistence*, ·*succession*, and ·*coexistence*—·x lasts through time, ·x follows y in time, ·x exists at the same time as y·. So there will be three rules of all temporal relations of appearances—rules that ·govern the establishment of facts about how appearances are inter-related in a unified time, ·are prior to all experience, and indeed ·make experience possible.

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[The next paragraph in Kant's text is entirely omitted from this version. ·It is horribly, defeatingly difficult to follow. ·It *seems* not to be needed for us to follow the main thread of Kant's argument. And ·in his personal copy of the first edition he struck this paragraph out (though he did include it in the second edition).]

[Kant now says that the principles of the 'Analogies' have a special feature all of their own. The other principles actually tell us something, *a priori*, about what appearances must be *like*—e.g. that they must have intensive magnitude. The principles of the 'analogies' don't do that, however: they aren't concerned with how elements are put together in the empirical awareness of appearances, so they have nothing to say about what any appearance will be like. Rather, they are concerned only with 'the *existence* of such appearances and

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their *relation* to one another'. He means that the principles of the 'analogies' tell us only things of the form 'Given one appearance, there exists another that relates to it thus-and-so'. He goes on to insist, however, that this doesn't give us *a priori* knowledge about what appearances *there are*. When we know something about the kind of synthesis that must underlie any appearance, that gives us some *a priori* knowledge of some aspect of every appearance that we shall encounter; but 'the *existence* of appearances can't be known *a priori* in this way'. He adds that even if we *could* somehow contrive to know *a priori* that something-or-other exists, we couldn't know it with any detail, i.e. couldn't know in advance ('anticipate') features of it that would enable us to pick it out, empirically, as the one in question. Then what *do* the principles of the 'analogies' give us if they don't give us knowledge (even in Kant's weak sense of that word)? Kant will answer that shortly, after one preparatory paragraph:]

•You'll recall that I label as 'mathematical' the principles of the 'axioms' and the 'anticipations', because they justify the application of mathematics to appearances. They were concerned with what makes appearances possible; they taught how appearances . . . can be generated according to rules of a mathematical synthesis. Both principles justify us in employing numerical magnitudes, and so enable us to know in advance that much about appearances—they are magnitudes. Take, for example, the degree of brightness of sensations of sunlight: I can fix on this *a priori* by •constructing it, which I do by •assembling about 200,000 illuminations of the moon. These first two principles can therefore be called **constitutive**. [That term hasn't occurred before in this work; nor has its opposite, 'regulative', which we are about to meet. Very roughly, a 'constitutive' rule tells you what a certain thing is, or what it is like, and a 'regulative' one tells you merely how to go looking for the thing. Constitutive: information. Regulative: marching

orders. These terms will occur only once more (on page 135 until they turn up in the Dialectic, where they are worked hard and given an explanation—which, incidentally, seems not to fit their present use.)

It's not at all like that with the principles whose job is to bring the *existence* of appearances under rules *a priori*. Existence can't be constructed or assembled, so these principles can apply only to the relations of existence, and can yield only **regulative** principles. So there's no question of our having either 'axioms' or 'anticipations' in this context, but we do have *something*. If a perception is given in a temporal relation to some other, but with no information about what the 'other' is like (so that we can't say *a priori* *what* it is, or what its *magnitude* may be), we may still be in a position to say that in its existence it is necessarily connected, in this temporal way, with the former perception. In philosophy analogies signify something very different from what they represent in mathematics. A mathematical analogy is a formula that expresses the equality of two quantitative relations, and is always *constitutive*; so that if three members of the proportion are given, the fourth can be constructed—e.g. if we know that x is to 17 as 36 is to 9, we know that x = 68. But in philosophy an analogy is an equality not between two *quantitative* but between two *qualitative* relations; given three members of such an analogy, we can know *a priori* •how the fourth relates to them but not •what the fourth *is*. Still, that relation gives us a rule for *seeking* the fourth member in experience, and a sign by which it can be detected. So an analogy of experience is only a rule governing how a unified experience is to arise from perception. It doesn't tell us how perception—or empirical intuition as such—comes about in the first place. It isn't *constitutive* of the objects, i.e. of the appearances, but only *regulative*. . . . The postulates of empirical thought are also regulative, not constitutive. . . .

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I need to emphasize regarding the analogies something that I have already said about all synthetic principles, namely •that they are significant and valid only as principles of the empirical use of the understanding, not of its transcendental employment; •that they can be proved only as used empirically; and •that appearances must therefore be brought not under the naked categories but under their schemas. That's for the old familiar reason: If the objects to which these principles are to be related were things in themselves, we couldn't possibly have *a priori* any synthetic knowledge of them. They are just *appearances*; and complete knowledge of them—which is what *a priori* principles are all about—is simply the experience we can have of them. So the principles can't have any goal except being the conditions of the unity of *empirical* knowledge in the synthesis of *appearances*. But such a unity can be thought only in the *schema* of the pure concept of understanding. The category expresses a function that isn't restricted by any sensible condition. . . . In the principle itself, we do indeed employ the category; but in applying the category to appearances we replace it by its schema as the key to its use. . . .

### FIRST ANALOGY

#### Principle of the persistence of substance:

In all change of appearances substance persists, and the amount of it in Nature doesn't get larger or smaller

#### Proof

All appearances are in time—the persisting form of inner intuition, the substratum of all one's intuitions. Only *in time* can coexistence or succession be represented. Thus, the time *in* which all change of appearances has to be thought, remains and doesn't change, because all facts about the succession of events or the coexistence of things have

to be represented as being *within* time. Now time can't by itself be perceived, but it must show up *somehow* in our experience, because—as I have shown—all appearances are, so to speak, drenched in time. Consequently a substratum that represents time as such—not this time or that time, but just *time*—must be found in the objects of perception, i.e. in the appearances; and when any change or coexistence is apprehended, it must be perceived through the relation of appearances to this substratum. Now, the substratum of everything real, i.e. everything that belongs to the existence of things, is *substance*; and all the facts about the real world are facts about the states of substances. So the persisting element in the experienced world, in relation to which all temporal relations of appearances can be determined, is *substance*, i.e. what is real in appearances; and as the substrate of all change, substance always remains the same. And as it is thus unchangeable in its existence, the amount of it in Nature can't alter.

Our •apprehension of the manifold of appearance is always temporally drawn-out, and so it is always changing. So we can't tell just from our apprehension whether the •manifold itself. . . is all-at-once or temporally drawn-out. For *that* we need an underlying ground that exists *at all times*, i.e. something *lasting* and *persisting*, of which all facts about change and coexistence are only so many ways in which the persisting things exist. I highlight change and coexistence because 'x follows y' and 'x exists at the same time as y' are the only temporal relations. So we get the result that it is only in relation to what is persistent that any temporal relations are possible. . . Persistence, as the abiding correlate of all cases of change and all cases of going-together, expresses time as such. Neither •change nor •going-together apply to time itself. •Coexistence or going-together isn't ever a feature of time itself, because

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none of the parts of time coexist; they are all in succession to one another. And •change isn't something that happens to time itself, but only to appearances *in* time. To ascribe succession to time itself, we would have to think yet another time for the succession to occur *in!* Only through what persists can existence in different parts of the time-series acquire a magnitude that we call 'how long it lasts'. For in bare succession existence is always vanishing and re-starting, and never has the least magnitude. Without what persists, therefore, there are no temporal relations. Now, time can't be perceived in itself; so what's persistent in the appearances is the substratum of all temporal facts, and is therefore the condition of the possibility of. . . .experience.

227 So all facts about what exists and what changes occur have to be viewed as simply facts about the states of that which persists all through the changes. . . .

I find that in all ages, not only philosophers but also ordinary lay-people have recognised this persistence as a substratum of all change of appearances, and have always assumed that there can't be any doubt about this. The only difference in this matter between ordinary lay-people and philosophers is that philosophers have said a bit more about it, saying that throughout all changes in the world *substance* remains and only the *accidents* [= 'properties', 'qualities'] change. But I haven't found that anyone has even *tried* to prove this obviously synthetic proposition. Its proper place is right at the top of the laws of Nature that are pure and completely *a priori*; but it is very seldom put there. Certainly the proposition that *substance persists* is analytic, because this persistence is our sole ground for applying the category of substance to appearances. But •if we want to do this• we ought first to have proved that •in all appearances *there is* something that persists, and that •facts about non-persisting items are just facts about the various states of what *does*

persist. But such a proof can't be constructed dogmatically 228 [see note on page 15], i.e. from concepts, because it concerns a synthetic *a priori* proposition. •The only other way of proving it—the *right* way—didn't occur to anyone, because• it has never occurred to anyone •until now• that such propositions are valid only in relation to possible experience, and therefore can't be proved except through a theory about what makes experience possible. So it's not surprising that though the above principle is always postulated as lying at the basis of experience (for in empirical knowledge the need for it is *felt*), it hasn't ever before been proved.

A philosopher was asked how much smoke weighs, and replied: 'Subtract from the weight of the burnt wood the weight of the ashes that are left over, and you have the weight of the smoke.' In this answer he assumed, as undeniable, that even in a fire the •matter (substance) doesn't vanish but only undergoes an alteration of •form. The proposition that *nothing comes from nothing* is just another consequence of the principle of persistence—or rather of the ever-lasting existence of the subject (strictly so-called) in the appearances. [It may be worth noting that in Kant's German 'consequence of the principle' is *Folgesatz aus dem Grundsatz* = 'follow-proposition out of the ground-proposition'.] For if what we call 'substance' in the •domain of• appearance is to be the substratum (strictly so-called) of all temporal facts, it must follow that all such facts, whether concerning past or future time, can be established solely through and in terms of it. So we can give an appearance the title 'substance' just because we presuppose its existence throughout •all time; and this isn't well expressed by the word 'persistence', because that applies chiefly to •future time. But since the inner necessity of persisting •from now on• is inseparably bound up with the necessity of always *having* existed, the expression •'principle of persistence'• may be allowed to stand. The two propositions 229

•Nothing comes out of nothing, and

•Nothing can revert into nothing,

were always run in harness by the ancient philosophers, but these days they are sometimes separated because of the mistaken belief that they apply to •things in themselves, and that the first of them would run counter to the world's depending—even in respect of its substance—on a supreme cause. But there was no need for that worry, because what we are dealing with here are only •appearances in the domain of experience. ·I have said several times why it is that in this context the principle of persistence must be true, but I'll sketch it again here·. Experience couldn't be unified if we allowed that new things—new *substances*—could come into existence; for then we would lose the only item ·in the domain of appearance· that can represent the unity of time, namely the identity of the substratum in which change has thoroughgoing unity. ·But this has nothing to do with any such topic as •the world's dependence on God·. The persistence I am talking about is simply •the way we represent to ourselves the existence of things in the ·domain of· appearance.

230 The details of a substance that are nothing but special ways in which it exists are called *accidents*. They are always real, because they concern the existence of substance. (Negations are only details consisting in the *non*-existence of something in substance.) We have a special word for how such accidents—e.g. motion, as an accident of matter—exist. We say that their existence is 'inherence', ·and that the accident 'inheres in' the substance·. In contrast to this, we use the label 'subsistence' for the kind of existence that the substance has. But this has led to many mistakes; and it's more precise and correct to handle all the facts about •accidents in terms of facts about what the •substance is like at this time or that—·e.g. to avoid

(1) 'An accident, whiteness, inheres in this substance now'

in favour of

(2) 'This substance is now white'.

Notice that (1) is a relational statement—it affirms that the inheres-in *relation* holds between the accident and the substance—whereas (2) is not relational·. But the logical use of our understanding works in such a way that we can't help picking out and isolating, as it were, •that which can change in the existence of a substance while the substance still remains, and to viewing •this variable element as standing in a certain *relation* to what is truly persistent and basic. So this category belongs among the categories of relation, not as itself *containing* a relation, but as making relations possible.

This persistence is the basis for a correct understanding of the concept of *alteration*. Coming into and going out of existence are not *alterations* of whatever it is that comes into or goes out of existence. You have an alteration when a single object exists first in one way and then in another—·e.g. exists first as white and then as blue·. All that alters *stays on*, and only its state changes. [In this passage, 'alter' and 'alteration' translate one of Kant's words and its relatives, while 'change' translates a different cluster. They sharply differ here, because a 'change' in Kant's sense occurs only to something that comes into or goes out of existence.] Since this change thus concerns only the states of the substance, which can go out of existence or come into existence, we can say, odd as it may seem, that only what persists (substance) is altered, and that what is transitory— 231 what comes and goes—doesn't undergo any *alteration* but only undergoes a *change*, because certain states ·of the substance· cease to be and others begin to be.

Alteration can therefore be perceived only in substances. There couldn't possibly be a perception of something's •absolutely coming into existence or going out of existence. (I use



‘absolutely’ to exclude cases where the ‘something’ is an accident, so that its existence-change is just a persisting substance’s alteration.) Why couldn’t such an event be perceived? Because it’s the persistent thing that *makes possible* the representation of the shift from one state to another, and from not-existing to existing. These shifts can’t be empirically known except as changes of state in something that persists. If you try to suppose that something •absolutely comes into existence, you’ll have to have a point of time at which it didn’t exist. But what would you attach this point to if not to something that already existed ‘at that time’? For a preceding empty time is not an object of perception. But if we connect the coming into existence with something that previously existed and stayed in existence right up to the time of the coming into existence, then this coming into existence must be only a change of state in this already-existent persisting item. Similarly also with going out of existence; it presupposes the empirical representation of a time in which the item in question no longer exists.

232 Substances, in the domain of appearance, are the substrata of all temporal characterisations of anything. If some of these substances could come into existence and others stop existing, that would remove one condition of the empirical unity of time. Appearances would then relate to two different times, and existence would flow in two parallel streams—which is absurd. There is only one time in which all different times—i.e. parts of the one time—must be located not as coexistent but as one after another.

...What is the empirical criterion of this necessary persistence and thus of the substantiality of appearances? I’ll have a good opportunity to answer that later on [page 117].

## SECOND ANALOGY

### Principle of temporal sequence, in accordance with the law of causality:

All alterations take place in conformity with the law of the connection of cause and effect.

### Proof

Before stating the proof, I want to give a preliminary reminder: The principle of the first analogy showed that all appearances of succession in time are only *alterations*, . . . and that therefore there can’t be any case of a substance’s coming into existence or going out of existence. The principle could have been stated thus: *All change (succession) of appearances is merely alteration*. If a substance came into existence or went out of existence, that wouldn’t be an *alteration* of it, because the concept of alteration presupposes a single subject that is first in one state and then in a different one, staying in existence throughout. Now for the proof of the principle of the second analogy.

•BRIEF, FAIRLY SKETCHY VERSION OF THE PROOF•

I perceive that appearances follow one another, i.e. that there is a state of things at one time and then the opposite state at the next time. So I really •connect two perceptions in time. Now, •connection is not the work of mere sense and intuition; in this case—i.e. in the perception of happenings—it is the imagination’s power of putting the contents of inner sense into temporal order. But imagination can •connect these two states in either of two ways, depending on which it puts temporally first. They can’t be put in the right order just by perceiving *when* each occurred, because time itself can’t be perceived, which means that no state of affairs has its *when*—the time to which it belongs—as an empirically perceptible feature of it. All I am conscious of is that my

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234 imagination sets one state before and the other after, not that one state objectively precedes the other; which is to say that the *objective relation* of appearances that follow upon one another is not to be settled through mere perception. For this relation to be known as objectively settled, the relation between the two states must be thought in a way that fixes one ordering of them as necessary and the other ordering as ruled out. But the concept that carries with it a *necessity* that items be brought together in one way rather than another has to be a pure concept that lies in the understanding, ·i.e. a category·; it can't come from perception; and in this present case it is the concept of the *relation of cause and effect*. ·It does the ordering job that I have been talking about, because· the *cause* fixes the objective temporal position of the *effect* as its consequence. . . . Experience itself—in other words, empirical knowledge of appearances—is thus possible only if we bring the sequence of appearances (and therefore all alteration) under the **law of causality**; and it also follows that appearances, as objects of experience, are themselves possible only in conformity with that law.

·INTERLUDE CONCERNING THE TERM 'OBJECT'·

235 Our sensory intake of the manifold of appearance is always successive: the *representations of* the parts follow one another. Whether the parts also follow one another *in the object* is quite another question, not settled by the temporally drawn-out nature of the representations. Of course *anything* can be called an 'object'—even a representation that one is conscious of (·such a representation can be called 'an object of one's consciousness'·). But it is a question for deeper enquiry what the word 'object' ought to signify in respect of appearances when we speak of a representation as *standing for* an object ·or *having* an object·. When appearances are being thought of merely as representations, i.e. as objects of consciousness, they're in no way different from the apprehen-

sion of them, i.e. from their being received into the synthesis of imagination; and ·with 'appearances' understood in that way· we must agree that the manifold of appearances is always generated in the mind successively. Now, if appearances were things in themselves—if things in themselves were the 'objects' we are trying to pin down—we could never discover from the succession of representations how they are all connected 'in the object'. That's because all we have to go by are representations; how things may be in themselves, apart from the representations through which they affect us, is right outside our sphere of knowledge. So there's the problem: I can't take appearances to be things in themselves, but I want to distinguish the •temporally drawn-out nature of our conscious representations of appearances from •the temporal relations among the elements of the appearances themselves, ·i.e. among the 'objects of those representations'·. For instance, there is a house in front of me; I take in successively the various aspects of *its appearance*; but no-one will say that various aspects of *the house* are also successive. [Most of the rest of this paragraph is unduly hard to grasp as Kant wrote it. The gist of it is this: I am to distinguish (1) the temporal nature of my apprehension of some representations (always successive) from (2) the temporal nature of whatever it is that the representations are representations of (in some cases successive, in others not). But this latter item—what the representation is of—isn't a thing in itself. In fact, it is nothing but 'the sum of these representations, viewed as being their object'. The only way we can get the result that the always-successive temporal set-up among •the representations is not always the temporal set-up in •the object of the representations—given that the object is 'the sum of the representations or perhaps some kind of construct out of them—is for the representations. . . . Kant now takes over:] . . . to fall under a rule that distinguishes the apprehension of

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them from every other apprehension, and necessitates that the manifold be temporally hooked up in one particular way. The **object** is whatever-it-is in the appearance that contains the condition of this necessary rule of apprehension—i.e. that makes this rule kick in.

•PUTTING FLESH ON THE BONES OF THE PROOF•

237 Let us now proceed to our problem. That something *happens*—i.e. that some thing or state comes into existence—can't be empirically perceived unless it is preceded by an appearance that doesn't contain this thing or state. (What about an event that follows an empty time, i.e. a coming-into-existence preceded by *no* state of things? We could no more apprehend *that* than we could apprehend empty time!) So every apprehension of an event is a perception that follows upon another perception; but as we saw in the case of the house, every apprehension of a *non*-event is also like that; so we still don't have a way of picking out apprehensions of events from other apprehensions. But I offer this: in an appearance that contains a happening in which state A of the perception is followed by state B, B *can't* be apprehended except as following A; the perception A *can't* follow B but can only precede it. (This is an application of the general thesis about necessitating rules, given at the end of the preceding paragraph.) For example: I see a ship being sailed downstream. My perception of its lower position *follows* the perception of its position higher up in the river, and it *couldn't* happen that in apprehending this appearance I first perceived the ship lower down and then afterwards higher up. In this case the order in which the perceptions occur in apprehension is fixed, and my apprehension has to stay with this order. In the 'house' example, my perceptions could begin with the apprehension of the roof and end with the  
238 basement, or could begin from below and end above; and  
in taking in the view of the house from a single position, I

could go from right to left or from left to right. Thus, in the series of these perceptions there was no determinate order making it *necessary* for me to start at some one point. But in the perception of an *event* there is always a rule that makes the order in which the perceptions (in the apprehension of this appearance) occur a *necessary* order.

In this case, therefore, we must derive the *subjective succession* of apprehension from the *objective succession* of appearances (with the appearances being understood objectively, of course, i.e. as being what the representations are representations *of*). Otherwise the order of apprehension is entirely undetermined, and doesn't distinguish one appearance from another. The •subjective succession, taken in itself, is altogether arbitrary, and proves nothing about how the manifold is connected in the •object. So the objective succession has to consist in the order of the manifold of appearance according to which, *in conformity with a rule*, the apprehension of what happens *follows* the apprehension of what went before. That's the only way I can be entitled to say (not merely of my apprehension, but) of appearance itself that a succession is to be met with in it. This is only another way of saying that I can't arrange the apprehension otherwise than in this very sequence.

Where such a rule applies, what precedes an event must contain the condition of a rule according to which this event  
239 invariably and necessarily follows—i.e. must contain something that makes this rule kick in. I can't reverse this order, going back from the event to find through apprehension what came before it. For appearance never goes back from •the later to the earlier one, though •it does indeed stand in relation to some preceding point of time. On the other hand, the advance from a given time to the determinately following one is a *necessary* advance. Therefore, since there certainly is something that follows, I must relate it to something else

that •precedes it and that •it follows in conformity with a rule, i.e. necessarily follows. The event (as the conditioned item) thus provides reliable evidence that there was some previous condition, and this condition is what determines the event. •Or, to put it in slightly different language: The event (as the **effect**) provides reliable evidence that there was some previous **cause**, and this cause is what necessitates the event. •

•A QUICK RESTATEMENT OF THE PROOF•

[This paragraph and the next are notably repetitious, and most of the unnecessary repetitions are omitted from this version.] Suppose we had an event *x* that wasn't preceded by something that made a rule kick in according to which *x* *must* follow. In that case, the successiveness in perception would come solely from apprehension—i.e. it would consist only in the subjective fact that our sensory intake is successive—and we'd have nothing enabling us to sort out objectively which perceptions really precede and which really follow. . . . I wouldn't be able to say that one state follows the other in the •objective domain of• appearance, but only that one *apprehension* follows the other. That's a merely subjective fact, giving no information about any object; so it can't be regarded as knowledge of any object, not even of an object in the •domain of• appearance.

Thus, whenever we experience that •something •objectively• happens, that involves us in presupposing that •it was preceded by something from which •it followed according to a rule. Otherwise I wouldn't say of the object that it follows—i.e. I wouldn't say that something objectively happened. The only way I can make my subjective synthesis of apprehension objective is through a rule in accordance with which the appearances are determined by the preceding state. The experience of an *event* is itself possible only on this assumption.

•INTERLUDE CONCERNING THE CONCEPT OF CAUSE•

This may seem to contradict everything we've been told about how our understanding goes about things. The accepted view has been this:

- We perceive and compare repeated sequences of events—first an A event, then a B one.
- From that we discover a rule—whenever an A event occurs, a B event follows. 241
- And that leads us to construct for ourselves the concept of *cause*.

If that's how the concept of cause were formed, it would be merely empirical, and the rule that it supplies, namely *Everything that happens has a cause*, would be as contingent as the experience it was based on. The universality and necessity of the rule wouldn't be based on anything *a priori*, but only on induction; so they would be merely fictitious, and •the rule• would have no genuinely universal validity. It's the same with *cause* as with other pure *a priori* representations—•the concepts of• space and time, for example—which we can get in clear form *from* experience only because we first put them *into* experience in the course of *creating* experience. It's true that the concept of *a rule that determines the series of events* is one that we can't get logically clear in our minds until after we have used it in experience. But •the rule has to be at work in our thought if appearances are to be inter-related in time, so experience itself is based on •it, so that it—the rule—has preceded experience *a priori*.

•YET ANOTHER RESTATEMENT OF THE PROOF•

. . . We have representations in us, and can become conscious of them. But extend this consciousness as far as you like, make it as exact and detailed as you like, it will still be merely a matter of representations, inner states of our mind that are temporally related thus and so. So how does it come about that we posit an object for these representations,

overlying their •subjective reality as states of our minds with who-knows-what kind of •objective reality? Objective significance for representation x can't consist in x's relation to another representation y (that is, another representation that we take to be *of* an object), because that would simply raise the question again: how does representation y reach out beyond itself, acquiring objective significance in addition to the subjective significance that it has as a state of mind? If we inquire into what new character *relation to an object* confers upon our representations, what dignity they get from that, we find that there's nothing to it beyond bringing the representations under a rule, and •thereby• forcing us to connect them in some one specific manner. . . .

. . . .When I perceive that something x •objectively• happens, the **first** thing that is contained in this representation is that *something y happened just before*, because it's only by reference to a preceding y that this appearance x gets

- its time-relation, i.e.
- its existing *after* a time when it didn't exist, •i.e.
- its status as an event or happening•.

But •the experience of something x's happening also contains a **second** element, namely that• the preceding y necessitated x in accordance with a rule (because x can't have its determinate temporal position unless that is so). From this it follows (1) that I can't reverse the series, putting x before y; and (2) that if y is given, the determinate event x follows inevitably and necessarily. So the situation is this: there's an order among our representations, in which the present—just because it *has* happened—points back to some preceding state as a correlate of the given •present• event; this correlate is not yet determined, but it determines the event as its consequence. [That last clause is a kind of short-hand for: 'We haven't yet settled what this correlate *is*, but we do know that it has settled the occurrence of the event we are investigating'.]

•REWORKING ALL THIS IN THE CONTEXT OF ITS BEARING ON EMPIRICAL DOINGS•

Thus, if it's a necessary law of our sensibility—and therefore a formal condition of all perceptions—that one **time** necessarily determines the following **time** (because I can't reach the later time except *through* the earlier one), it is also an indispensable law of empirical representation of the time-series that the **events** in past time determine all **events** in the following time, and that an event can't occur unless a past event determines—in accordance with a rule—that it will occur just then. [In that sentence, the word 'events' has been used once where Kant's word means 'appearances', and once where his word means 'existences'; but he does also explicitly call them *events*. His basic point has to do with moving from relations among *times* to relations among *things IN* time. You'll remember that his word for 'appearance' usually stands not for a state of mind but for something objective.] For only in appearances—•things *in* time•—can we empirically detect this continuity in the way times hang together. [Despite the phrase 'this continuity', the most recent mention of continuity was on page 106, before Kant started on the analogies of experience; but continuity will become a central topic very soon.] Understanding is integral to all experience—it's needed for the possibility of experience. The first thing it does is not to make the representation of objects •clear, but to make it •possible. It does this by carrying the time-order over into the appearances and their existence—•i.e. into the events that occur *in* time•. What the understanding does is to relate each event to the preceding ones, thus assigning it a position determined *a priori* in time. If it didn't do that, the events wouldn't accord with time itself, which *a priori* determines the position of all its parts. What settles •for us• the position in time of a given event can't be *its relation to time*, because absolute time can't be perceived. Rather, the appearances must determine for one another their position in time, and make their temporal

order a necessary order. In other words, what follows or happens must follow in conformity with a universal rule from what was contained in the preceding state. Out of this comes a series of appearances which, by means of the understanding, produces and makes necessary the same order and continuous connection in the series of possible perceptions as is met with *a priori* in time—the form of inner intuition in which all perceptions must have their place.

246 . . . So the rule by which we fix the temporal location of an event is that some sufficient condition for its occurrence is to be found in what happened just before it. The •principle of sufficient reason, therefore, is the basis for possible experience, i.e. for objective knowledge about when individual events occur.

The proof of this •principle rests on the following considerations. (1) All empirical knowledge involves the **synthesis** of the manifold by the imagination. (2) This synthesis is always temporally drawn-out—the representations in it come in a stream, •not in a block•. (3) As the representations occur in the mind, there is nothing to fix the order in which they occur—the series of them could equally well be taken in one order or in the reverse order. (4) But if what we have is a **synthesis** of apprehension of the manifold of appearance [remembering that for Kant ‘appearances’ are objective, not subjective], the order is determined in the object. . . . (5) In accordance with this order something y must necessarily precede •a given event x•, and when y is given x must necessarily follow. Thus, if my perception is to contain knowledge of an event, i.e. of something as actually •objectively• happening, it must be an empirical judgment in which I think of the sequence as determined—i.e. as being preceded by some other appearance in time from which it follows necessarily, according to a rule. If that weren’t so—if I were given the antecedent event and the other event *didn’t* follow necessar-

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ily from it, I would have to think I was undergoing a merely subjective play of my imagination; and if I still thought of it as representing something objective, I would have to think I had been dreaming. . . . Within the general framework of the question of how my present doctrine relates to work in empirical science, three more specific questions come up: they concern •relations between the concepts of cause and of substance, •the continuity of alterations, and before those two this one•:

•NON-SEQUENTIAL CAUSATION•

At this point there arises a difficulty that must be dealt with at once. Consider how I have formulated the principle of causal connection among appearances: I have stated it in terms of series or sequences of appearances—•first cause, then effect•—but really cause and effect can go together, can be simultaneous with one another, and the principle of causation covers those cases too. For example, a room is warmer than the outside air; I look around for the cause, and find a heated stove. Now the stove, as cause, is simultaneous with its effect, the heat of the room. In this case the cause and the effect don’t constitute a series—•first cause, then effect•—because they are simultaneous, and yet the law •of cause and effect• holds here as well. The great majority of natural causes are simultaneous with their effects; and when an effect is strung out in time, that is purely because the cause can’t achieve its complete effect in one moment. But at the moment when the effect first comes into existence, it is always simultaneous with the causality of its cause: if the cause had ceased to exist a moment before, the effect wouldn’t have happened. •To overcome this apparent difficulty•, we have to bear in mind that what matters here is the *order* of time, not the *lapse* of time; the •cause-effect• relation remains even if no time has elapsed. The time between the causality of the cause and its immediate effect

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can be vanishingly small, so that they can be simultaneous; but the *temporal* relation of one to the other will still be determinate. If I view as a cause a ball that makes a dent in the surface of a cushion on which it is lying, the cause is simultaneous with the effect. But I still distinguish the two by the way their dynamical connection relates to time—i.e. by such facts as that if I put the ball on the flat surface of the cushion, a dent follows; but it is *not* the case that if for  
 249 some reason there is a dent in the cushion, that brings a leaden ball down onto it!

So the sequence in time is the only empirical criterion of an effect in its relation to the causality of the cause that preceded it. [Kant follows this with a second example. Then:]

·CAUSE AND SUBSTANCE·

Causality leads to the concept of •action, this in turn to the concept of •force, and thereby to the concept of •substance. I leave the detailed exposition of these concepts to a future system of pure reason; indeed there's a lot of that already in the accepted text-books. ·Why not go into them now? Because· my critical project is concerned solely with the sources of synthetic *a priori* knowledge, and I don't want to clutter it by bringing in analyses that aim only at clarifying concepts, not at extending them. Still, I mustn't neglect the empirical criterion of a substance, because substance seems to show up better and more readily through •action than  
 250 through •persistence of an appearance.

Wherever there is •action—and therefore •activity and •force—there is also •substance, and *that's* where we have to look for the seat of this fruitful source of appearances. So far, so good; but can we explain in a non-circular way what we mean by 'substance'? It turns out to be hard to do. How are we to conduct an inference from a premise about *action* directly to the *persistence* of that which acts? I state the problem in terms of persistence because that is

an essential and quite singular characteristic of experienced substance. There would be no solution to it if we stuck to the usual procedure that deals with concepts in a purely analytic fashion, but there's no such difficulty if we tackle it from the standpoint of the doctrines I have been expounding. [The next bit is needlessly unclear. The gist of it is this: An instance of *action* has to involve *something that acts*; so we have

- an effect, which is an event or happening, and so belongs on the 'transitory = changing' side of the line, and

- a cause or agent, a thing that acts, and this belongs on the 'persisting = unchanging' side of the line.

If you try to get out of this by supposing that the acting thing is itself something transitory—i.e. is itself an event—then you'll have to find a subject or thing-that-acts for *that* event as well. Either you'll come to a persisting substance at that stage, or you'll postulate a still deeper-lying event, and so will be launched on an infinite regress.] So you have as a sufficient empirical criterion to establish that something *x* is a substance the fact that it *acts*; and this spares you  
 251 from having first to check on whether *x* is *persistent* by comparing your perceptions—i.e. by looking to see whether *x* appears to stay in existence through all the variations in my sensory intake. And anyway, that comparing-perceptions method, ·as well as being laborious, couldn't give us a solid decision on whether *x* is substantial, because it· couldn't be *completed* in the way it would have to be if our result was to match the strict universality involved in the concept ·of substance·. Here is something we know for certain:

The first subject of the causality of *all* coming into and going out of existence can't itself, in the domain of appearances, come into or go out of existence.

And this leads to ·the concept of· empirical necessity and

persistence in staying in existence, and so to the concept of a substance as appearance.

·PREPARING TO TACKLE QUESTIONS ABOUT ALTERATION·

When something happens, the mere fact of a coming-into-existence is something to be looked into, quite apart from any issue about *what* came into existence. The transition from the non-existence of a state to its existence demands investigation, even if the state in question doesn't show up at all in the domain of appearance. (I express this in terms of a 'state' because what comes into existence must be a •state; it can't be a •substance because, as I showed in the First Analogy, substances don't come into existence out of nothing. Suppose that a substance did come into existence out of nothing. This would have to be caused by something other than that substance; so it would be a case of creation properly so-called, and we can't allow that creation might show up among appearances, because the mere *possibility* of a creation would destroy the unity of experience. On the other hand, if I view all things not as

252 phenomena but as things in themselves, and as objects of mere •understanding without bringing •intuition into it, then despite their being substances they can be regarded as being brought into existence by a cause other than themselves. But that involves changing the very meanings of our words, and it wouldn't imply *anything* about what we might encounter in our experience.

We are confronted by a very general question: How can anything can be altered? How is it possible that one state at a given moment is followed by an opposite state at the next moment? From the *a priori* standpoint we haven't an inkling. To answer that question we need to have knowledge of actual forces, which can only be given empirically; for example, knowledge of

•the forces of motion,

or, what amounts to the same thing, knowledge of

•certain successive appearances that add up to motions, indicating the presence of such forces.

But we *can* get some *a priori* results, aided by the law of causality and the conditions of time, concerning the *form* of every alteration—the condition that has to be satisfied for one state to give rise to another—and that gives us results about the series of states, i.e. the event. And this we can do without any reference to the content of any alteration, i.e. to *what* state is changed. [Kant wrote 'what state is altered', but that was evidently a slip. See note on page 110.]<sup>15</sup>

·CONTINUITY OF ALTERATIONS·

If a substance passes from one state y to another state x, the point in time of x is distinct from that of y, and comes later than it. Similarly, the state of affairs including x—considered as a reality in the domain of appearance—differs from the previous state of affairs in which it didn't exist; the difference is like that between x and zero. That is to say, even if x differed from y only in magnitude, the alteration would involve the coming into existence of x-minus-y, which didn't exist in the previous state of affairs counts as zero in respect of •it. [Kant states this in terms of a case where x involves something's being *bigger* than it was earlier (its earlier size being y). His point should apply also when the move from y to x is something's becoming *smaller*, but it's not clear how he would state this in terms of something's not existing at the time of y.] 253

<sup>15</sup> Please note that I'm not talking about all alterations in any respect whatsoever (e.g. an alteration in a thing's relational properties), but only about alterations of state. For example, I am not concerned with the 'alteration' that someone undergoes through his parents' dying and his becoming an orphan. Thus, when a body moves uniformly, its •relations to others things change, but it doesn't in any way alter its •state of motion; that occurs only if it speeds up or slows down.



Well, then, *how* does a thing pass from state y to different state x? Between any two instants there is a time, and between any two states in the two instants there is always a difference which has magnitude (it *must* do so, because all parts of appearances are always themselves magnitudes). So every transition from one state y to another x occurs in a time that is contained between •the instant of y and •the instant of x. So those two instants are the boundaries of the time. So those two instants are the boundaries of

•the time of an alteration,

which is

•the time of the intermediate state between x and y;

and so they form part of the total alteration. Now, every alteration has a cause that shows its causality at work through the whole time in which the alteration takes place. So this cause brings about the alteration (not suddenly, 254 *snap!* in one instant, but) over a period of time; so that as that period runs its course from the initial instant of y to its ending at x, the magnitude of the reality x-minus-y is •correspondingly• generated through all smaller degrees between the first and the last. All alteration is thus only possible through a *continuous* action of the causality •that brings it about• . . . .

That is the law of **the continuity of all alteration**. Its basis is this: time doesn't consist of smallest parts—there are no atoms of time—and the same is true of time-taking events. Despite this, when a thing alters, its state x passes through all the intermediate parts to its second state y. In the •domain of• appearance there is no *smallest difference* between two real items, any more than there is a smallest difference that there can be between two periods of time. So what happens in an alteration is that the new state of reality x grows out of the earlier one y in which x didn't exist, going through all the infinity of intermediate degrees. . . .

It's not my present purpose to enquire into what use this principle may have for scientists; but I do have to face the question of how such a principle, which seems to extend our knowledge of Nature, can be possible •as something that is known• completely *a priori*. Even if we can tell just by looking at the principle that it is correct and •empirically• real, which might make us think we can excuse ourselves 255 from tackling the question 'How is it possible?', we *do* have to tackle it. Here is why. There are so many baseless claims to the extension of our knowledge through pure reason that we must make it our rule—with no exceptions—to look with suspicion at every such claim, and not to accept it—however clear the *dogmatic* proof of it may seem to be—unless we are given the materials for a thoroughgoing deduction. [For 'dogmatic', see page 15. For 'deduction', see pages 4 and 57.]

When my empirical knowledge increases, when I come to have new perceptions, what is happening is just further goings-on in my inner sense, i.e. an advance in time. (This is true whether the objects I am learning about are •objective• appearances or mere •subjective• intuitions.)

**what Kant wrote next, conservatively translated:** This progress in time determines everything, and is not itself determined by anything further: i.e. its parts are only in time, and given through the synthesis of it, but they are not given before it. For this reason every transition in perception to something that follows in time is a determination of time through the generation of this perception and, since that is always and in all its parts a magnitude, the generation of a perception as a magnitude through all degrees, of which none is the smallest, from zero to its determinate degree.

**what he seems to have been getting at:** In this empirical knowledge-gathering, it is *time* that calls the tune. You don't conceptually construct time on the basis of relations

amongst items that you know about independently of time; there aren't any such items. What about the parts of time—short periods, or moments? Not even them, because you are presented with parts of time only *in* time; you don't experience short periods of time and then notice that they hang together so as to add up to a single continuous time. So when you perceive a transition from one state of affairs to a later one, the whole story about this perception-of-an-event is a story about what your perceptual states are at a series of *times*. Any such perception has to be, so to speak, drenched in time. And since time is always and in all its parts a magnitude, the same is true of the perception-of-an-event: each of *its* temporal parts also involves a magnitude, and it runs through the entire series of these magnitudes from zero up to whatever is the case at the end of the event; and because there are no temporal atoms in this series, no smallest durations, the whole process is strictly continuous.

256 This shows how we can know *a priori* a law about the form of alterations. All we are doing is to anticipate a formal feature of our own mental state; and, given that this formal pre-condition of our mental life dwells in us prior to all given appearances, *of course* we can know it *a priori*.

So we have two parallel results. •The form of inner sense, time, contains the sensible *a priori* condition of the possibility of a continuous flow of the world. •The understanding... is the *a priori* condition of the possibility of giving events their positions in this continuous flow, doing this through the series of causes and effects. Because the causes inevitably draw the effects after them, they make our empirical knowledge of time-relations valid universally for all time—i.e. objectively valid.

### THIRD ANALOGY

#### Principle of coexistence, in accordance with the law of interaction or community:

All substances that can be perceived to coexist in space are in thorough-going interaction with one another.

#### Proof

Things are coexistent when in empirical intuition we can 257 perceive them in either order—which (as I showed in the proof of the second principle) can't happen in the temporal series of appearances. Thus I can look first at the moon and then at the earth, or first at the earth and then at the moon; and because neither of these objects has perceptual primacy in the way a cause has perceptual primacy over its effect, I say that they are 'coexistent'—i.e. existing at the same time, i.e. simultaneous. For a given pair of things, we can't assign each its place in time and then notice that the temporal locations are the same and from this infer that they coexist and thus that our perceptions could take them in either order. Because time itself can't be perceived, we can't assign anything a temporal location just by seeing *where in time it is situated*. If we don't look at how the objects are related to one another, all we could get from the way they show up in our perceptions would be things like this:

- At time  $t_1$  I have a perception of object x but not of object y.
- At time  $t_2$  I have a perception of object y but not of object x.
- At time  $t_3$  I again have a perception of object x but not of object y.

We couldn't learn in this way that the objects coexist, and that it's *because* they coexist that we can perceive them in either order. If we are to have grounds for saying that

the take-it-either-way sequence of the perceptions is based on something that is out there, and thus for •representing them as *objectively* coexistent, we need to have a concept of the understanding that would apply to them if the detailed nature of each depended in part on the other. What concept? Well, it has to be the concept of *influence*, the concept that

258 applies when one substance has certain features because of the features of some other substance; and when this relation holds in both directions between two substances, it gets the special names ‘community’ and ‘reciprocity’. Thus, our experiential knowledge that two substances exist in space at the same time has to be based on the presupposition that they are interacting. So *interaction* is the condition of the possibility of *the things themselves* as objects of experience. . . .

Suppose there are several different substances—appearances—each of them completely isolated, i.e. none having any influence on any of the others. I maintain that •we can’t possibly

259 learn perceptually that they coexist, and that •there is no empirical-synthesis track leading from any one of them to any other. . . .

So as well as the mere existence of •substances• x and y, there must be something through which x determines y’s position in time, and through which, conversely, y determines x’s; otherwise these substances can’t be empirically represented as *coexisting*. Now the only way in which something x can determine the temporal location of something else y is by •causing it to exist or •causing it to have some of its features. It’s the latter of these—causing some of the features—that applies when x and y are substances; so we get the result that the coexistent substances x and y cause certain of one another’s features; that is, the substances must be in a *dynamical community* with one another (perhaps an indirect one), if it’s to be possible to know through perception that

they exist at the same time. Now, quite generally if something is necessary for z to be an object of experience, then that same condition is necessary for z to exist. So we get the result that all co-existing substances in the •domain of appearance should stand in a thoroughgoing community of mutual interaction. 260

The word *Gemeinschaft* (‘community’) is ambiguous. It may stand for a group of items that are together in some way without interacting, or it can stand for a group whose members interact. [Kant explains that by equating the two senses with two Latin words.] I am using it in the latter sense, as signifying a dynamical community; •it is in a way the more basic of the two senses, because• even the weaker kind of community that consists in things’ standing in *spatial* relations to one another couldn’t be empirically known unless there were a dynamical community. We can easily see from our own experience

- that our senses can be led from one object to another only by the continuous influences in all parts of space,
- that the light that plays between our eye and the stars produces an indirect community between us and them, and thereby shows us that they coexist,
- that we can’t knowingly change our perceptual position unless matter in all parts of space enables us to know where we are; and only thus by means of their two-way influence can objects establish their simultaneous existence, and thereby the coexistence of even the most remote objects.

Without community, each perception of an appearance in space is broken off from every other, and the chain of empirical representations—i.e. experience—would have to start all over again with each new object, with its immediate predecessor having not the least connection with it or being temporally related to it. I am not arguing here against empty 261

space; there may be empty space where perceptions can't reach, and where there is therefore no empirical knowledge of coexistence. But such a space is not for us an object of any possible experience.

[Kant now offers a difficult paragraph purporting to explain the third analogy further. Its final sentence, a comment on all three analogies, is worth noting: 'The three dynamical relations, from which all others spring, are therefore (1) inherence, (2) consequence, and (3) composition.']

\* \* \*

·SUMMING UP THE THREE ANALOGIES OF EXPERIENCE·

..262 These, then, are the three analogies of experience. They are simply principles governing how appearances fit into time, according to all three of time's modes, namely the relation that

- an appearance has to time itself as a magnitude (the magnitude of existence, i.e. *duration* = persistence·);
- appearances have to one another in time as a *successive* series;
- appearances have in time as a sum of all *simultaneous* existence.

This unity of time-determination is altogether dynamical. For time is not viewed as that wherein experience immediately determines position for every existence. Such determination is impossible, inasmuch as absolute time is not an object of perception with which appearances could be confronted. What determines for each appearance its position in time is the rule of the understanding through which alone the existence of appearances can acquire synthetic unity as regards relations of time; and that rule consequently determines the position ·in a manner that is· *a priori* and valid for each and every time.

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By 'Nature' in the empirical sense, we understand the hanging together of real appearances in accordance with laws. Certain laws—*a priori* ones—make it possible for there to be a Nature in the first place. Empirical laws can exist and be discovered only through experience, and indeed under the guidance of those basic laws through which experience becomes possible. . . . The analogies, taken together, declare that all appearances do lie within *one* Nature; indeed they *must* do so, because without this *a priori* unity—this *oneness*—experience wouldn't hang together as a unity, and that would make it impossible for us to know anything about the world.

I want to say something about the way I have gone about proving these transcendental laws of Nature, ·i.e. the principles of the three analogies·. What I have to say is of great importance for *any* attempt to prove *a priori* propositions that are synthetic. (I'm talking about intellectual propositions, ·not practical or moral ones, for which a different story has to be told·.)

[Kant will speak of coming at things •'dogmatically'—see note on page 15. He *seems* to equate that here with coming at them •through conceptual analysis, but that is because his topic is *a priori* knowledge. He would probably allow that one might tackle a topic dogmatically starting from contingent premises, but then one's conclusions would be *a posteriori*. When he refers to 'this third ·item·', he might be •echoing what he said earlier—see page 97—about the need for a 'third thing' to connect subject and predicate in a synthetic *a priori* judgment; or he may be referring to the third item in this list of procedures:

- proceed dogmatically in pursuit of *a priori* results; this requires conceptual analysis, and the results will all be analytic;
- proceed perhaps-dogmatically in an empirical way; this requires appealing to experience, and the results will all be *a posteriori*;
- proceed in Kant's **critical** way, getting synthetic results in an *a priori* manner.

Oddly, it doesn't matter which way we take 'this third ·item·'. The bottom line is the same.]

If I had tried to prove these principles of the analogies dogmatically, trying to show *from concepts* that

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- everything that exists is to be met with only in that which persists,
  - every event presupposes something just before it from which it follows in conformity with a rule; and finally
  - in a manifold that all exists at one time, the items in it coexist in a rule-governed set of relations to one another, and so stand in community,

it would have been a complete waste of time. Getting from one object and its existence to the existence of another object or to its mode of existence—we can't do that through mere *concepts* of these things, analyse them as we may. Well, then, how else can we go about this? By investigating the possibility of experience as a sort of knowledge in which the objects that are known about—if our representation of them is to have objective reality for us—must ultimately be capable of being *given* to us. In this third item, the essential form of which consists in the synthetic unity of the self-awareness of all appearances, we have found *a priori* conditions of complete and necessary determination of time for all existence in the domain of appearance—without which even *empirical* determination of time would be impossible. In it we have also found rules of synthetic unity *a priori*, by means of which we can anticipate experience. Consider the principle of sufficient reason, which is a version of the principle of the second analogy. I have proved it. Others have tried to prove it, many times; but they have always failed because they didn't have this critical method, and because they started from the wrong assumption that synthetic propositions that the empirical employment of the understanding recommends as being its principles can be proved dogmatically. As for the principles of the other two analogies: although they have always been silently *used*, no-one has previously

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managed to *think about* them; because no-one has had the guiding-thread of the categories, which is needed if one is to reveal and highlight every gap in the understanding—in its concepts as well as in its principles. . . .

#### 4. Postulates of empirical thought

1. Whatever agrees with the formal conditions of experience—i.e. with the conditions of intuition and of concepts—is *possible*. 266
2. Whatever is tied to the material conditions of experience—i.e. to sensation—is *actual*.
3. Whatever is connected with the actual in a way that is required by universal conditions of experience exists as *necessary*.

[It is worthwhile to get those clear in one's mind: (1) consistent with **formal** requirements, (3) entailed by **formal** requirements, and in between those (2) satisfying **material** conditions.]

#### Explanation

The categories of modality have a feature all of their own: when one of them is applied to an object, this doesn't add *anything* to the concept of the object, but only says how the object relates to the faculty of knowledge. Even when I have an entirely complete concept of something, I can still ask of this object: is it merely possible? or also actual? or even necessary? Answering this won't add any details to my account of the object; all it will do is to say how the object (in all its detail) is related to the understanding and its empirical use, to empirical judgment, and to reason in its application to experience.

So the principles of modality are nothing but explanations of how the concepts of possibility, actuality and necessity

267 work in their empirical employment; and that results in their restricting all the categories to their merely empirical use, not approving or allowing them to be used in a transcendental way. For if they are not to have a merely logical significance, analytically expressing the form of *thought*, but are to refer to the possibility, actuality, or necessity of *things*, they must concern possible experience and its synthetic unity, that being the only way in which objects of knowledge can be given. [Kant now proceeds to put flesh on those bones, taking the three categories in order, and giving each about a couple of pages.]

·POSSIBILITY·

The postulate of the *possibility* of things says that a thing is possible only if its concept agrees with the formal conditions of experience as such, and these conditions contain all the synthesis that is required for knowledge of objects. A concept that contains a synthesis is empty and not related to any object unless this synthesis belongs to experience, either as

- being derived from it, in which case the concept is an *empirical concept*, or as being
- an *a priori* formal condition for there being any experience at all, in which case it is a *pure concept*; though it still belongs to experience because its object can be met with in experience (and indeed only there).

268 We want to use a synthetic *a priori* concept to give ourselves the thought of an object's being *possible*; where could *that* possibility come from if not from the synthesis that constitutes the form of—the formal condition for—the empirical knowledge of objects? Of course any concept of something possible must satisfy the logical condition of not containing any contradiction; but that's not enough to imply that it's possible for there to be an object that fits the concept. For example, there is no contradiction in the concept of *a figure enclosed within two straight lines*, because the concepts of *two straight lines* and of *their intersection* don't contain any

negation of a figure. The impossibility of such a figure arises not from the concept in itself but from the construction of it in space, i.e. from the conditions of space and of its properties. And because these conditions contain *a priori* in themselves the form of experience as such, they apply to possible *things*.

Now I am going to lay bare the far-reaching usefulness and influence of this postulate of possibility. If I represent to myself

(1) a thing that persists, so that the only changes it is involved in are changes of its *state*,

I can't know just from my concept whether a thing of this kind (·substance·) is possible. Or if I represent to myself

(2) a thing that is constituted in such a way that if it occurs then something else invariably and inevitably follows from it,

there is certainly no contradiction in this thought; but the thought—i.e. the concept—provides no way of judging whether it is possible for any thing to have this property (causality). Lastly, I can represent to myself

(3) different things (substances) that are constituted in such a way that the state of each carries with it some consequences for the states of the others (·community·);

but I can't tell just from this concept—which exists only because I have *chosen* to put its parts together in that way—whether it is possible for there to be things that are inter-related in that way. Our only way of knowing that these concepts are objectively real, i.e. transcendently true, is through their expressing *a priori* the relations of the perceptions in every experience. ·You'll recognize, of course, that these three concepts are the central ones in the three analogies of experience. . . .

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If we tried to construct quite new concepts of (1) substances, (2) forces, and (3) reciprocal actions from materials that we find in perception, but without experience presenting any examples of the constructed concepts, we would be occupying ourselves with mere fancies, having absolutely no way of checking on their possibility, because we hadn't •borrowed the concepts *en bloc*• from experience and hadn't •let experience guide us in constructing them. Such man-made concepts can't be possible in the *a priori* way that the categories can, namely by being conditions on which all experience depends; the only kind of possibility they can have would be an *a posteriori* one, from the concepts' being given through experience itself. . . . Here are three examples, each of which has actually made an appearance on the philosophical stage. We might construct the concept of

- (1) a substance that is persistently present in space, but without filling it (like the mode of existence intermediate between •matter and •thinking thing that some •philosophers• have wanted to introduce);
- (2) a special ultimate mental power of *intuitively* anticipating the future—just *seeing* the future, as it were—and not merely inferring it;
- (3) a power of standing in a community of *thoughts* with other men, however distant they may be.

There is no basis for these concepts to be *possible*: they can't be based on experience and its known laws; and without such confirmation they are arbitrary constructs, free from contradiction indeed, but with no claim to objective reality. . . .

That's enough about the kind of possibility that can be derived from experienced actuality. I want to consider here only the possibility of things through *a priori* concepts; and I stand by my view that merely constructed concepts

can't unaided show that they are possible; for *that* we need concepts that are viewed as formal and objective conditions of experience as such.

The concept of *triangle* might seem to go against this. It is certainly independent of experience, yet it seems as if we could know it to be possible just from its concept, for we can provide an object for it completely *a priori*, because we can *construct* it [see note on page 8]. But all we get from that is the *form* of an object; it would still be a mere product of imagination, with the possibility of its object still being doubtful. What is required for that to be no longer doubtful is that the triangle be thought only under the conditions upon which all objects of experience rest. What enables us to connect •the concept of *triangle* with •the representation of the possibility of there being such a thing as a triangle? Just these two considerations:

- that space is a formal *a priori* condition of outer experiences, and
- that the synthesis in which we construct a triangle in our imagination is precisely the same as the synthesis we perform when we apprehend an appearance so as to make for ourselves an empirical concept of *triangle*.

It's the same with the concepts of magnitudes, whether continuous or not: those concepts are all synthetic, so the possibility of there *being* such magnitudes is never clear from the concepts themselves, but only from viewing the concepts as formal requirements for our having any experience of any objects. . . .

•ACTUALITY•

The postulate about the knowledge of things as *actual* requires perception (and thus sensation of which one is conscious), but it doesn't have to be perception directly of the object whose existence is to be known. What is needed is an actual perception that *connects* with the object in one

of the ways dealt with by the analogies of experience, which define all real connection in experience as such.

273 No mark of a thing's •existence can be found in its •mere concept. The concept may be complete, contain everything that is needed for getting into one's thought the thing and its entire intrinsic nature; but existence has *nothing* to do with all this, but only with the question: Is such a thing given to us in such a way that the •perception of it can, if need be, precede the •concept? 'The concept precedes the perception'—that tells us merely that the concept is possible. What indicates actuality is the perception that provides the concept with its content. But we can also know the existence of a thing before perceiving it, this being knowledge that is comparatively *a priori* but not absolutely *a priori* [that is, knowledge of x that can be had before any perception of x but not before any perception of anything]. What lets us have such knowledge is x's being connected with certain perceptions •that we do have—connected in accordance with the principles of. . . .the analogies. . . . For example, from our perception of attracted iron filings we know of the existence of magnetic matter pervading all bodies, though our sense-organs aren't sharp enough for us to be able to perceive this matter directly. . . . Our knowledge of the existence of things reaches as far as we can get through •perception and •extensions of it in accordance with empirical laws. If we don't •start from experience, or don't •move on from there in accordance with laws of the empirical connection of appearances, we are just putting up an idle *pretence* of wanting to discover things about what exists. Idealism, however, raises a serious objection to these rules for proving existence indirectly, and this is the proper place for its refutation.

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\* \* \*

### Refutation of Idealism

Idealism—by which I mean *material* idealism—is a theory about the existence of objects in space outside us. There are two forms of it:

- problematic idealism, which holds that the existence of objects in space outside us is doubtful and indemonstrable (as with Descartes's view that only one empirical assertion is indubitably certain, namely 'I am');
- dogmatic* idealism, which holds that space, along with all the things that couldn't exist without space, is in itself impossible (as with Berkeley's view that the things in space are merely imaginary entities).

There's no way of avoiding dogmatic idealism if space is interpreted as a property of things in themselves; for then space is a non-entity, and so is everything of which it is a condition. •But I don't have to refute this form of idealism here, because• the ground on which it rests has already been undermined in my transcendental aesthetic. •With problematic idealism, however, it's a different story•. It doesn't assert that space and its contents are unreal; it merely says that through our immediate experience we can't prove the existence of anything except ourselves. That is a reasonable upshot of a sound principle of philosophising, namely: don't make your mind up about something for which you don't have sufficient proof. •But we *can* give 'sufficient proof' of the reality of space and things in it•. The proof the idealist demands comes from showing that we have *experience* of outer things, rather than merely imagining them; and the only way to prove *this* is to show that even our inner experience is possible only on the assumption of outer experience. •That should be enough to refute• Descartes, who regards inner experience as indubitable.

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**THESIS**

**My consciousness of my own existence and of details about myself proves the existence of objects in space outside me.**

**Proof**

I am conscious of my own existence as determined in time, ·i.e. I am conscious of myself as being in various states at various times·. All ·knowledge of· temporal details presupposes ·knowledge of· something *persistent* in perception. But this persistent thing can't be an intuition in me. For the only grounds there are *in me* for any account of my various states are *representations*; and as representations they themselves require a persistent thing distinct from them, in relation to which their change, and so my existence through the time in which they change, can be determined. Thus perception of this persistent thing is possible only through a *thing* outside me and not through the mere *representation of a thing* outside me; and consequently

•my sense of the details of my existence in time is possible only through the existence of actual things that I perceive outside me.

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Now, •my consciousness of my own existence in time is necessarily tied to •a consciousness of the possibility of my having this sense of myself as being in various states at various times; and so it follows that

•my consciousness of my own existence in time is necessarily tied to the existence of things outside me.

In other words, the consciousness of my existence is at the same time an immediate consciousness of the existence of other things outside me. ·Q.e.d·.

**Note 1.** You see that in the foregoing proof the game played by idealism has been turned against itself, and with greater justice. Idealism assumed that the only immediate experi-

ence is inner experience, and that from it we can only *infer* outer things—and this, moreover, only in an untrustworthy manner, as in all cases where we are inferring from given effects to determinate causes. In this particular case, the cause of the representations that we ascribe (rightly or wrongly) to outer things may lie in ourselves. But my proof shows that outer experience is really immediate,<sup>16</sup> and that only by means of it is inner experience possible (I'm not talking here about the consciousness of my own existence, but about my having some sense of what states I am in at different times). Certainly, the representation 'I am', which expresses the consciousness that can accompany all thought, immediately includes in itself the existence of a subject; but it doesn't immediately include any *knowledge* of that subject, or therefore any empirical knowledge, i.e. experience, of it. For experience we need not just the •thought of something existing but also •intuition—in this case *inner* intuition, namely time—and the subject must be determined with respect to that, ·i.e. must have some knowledge of what his states are at different times·; for that to happen, outer objects are quite indispensable; from which it follows that inner experience is itself possible only indirectly, *through* outer experience.

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<sup>16</sup> In the preceding proof, the *immediate* consciousness of the existence of outer things isn't presupposed, but proved; and the proof holds good whether or not we have insight into the possibility of this ·immediate· consciousness. The issue about this consciousness is whether the following is the case:

•Our only sense is the inner sense; we have no outer sense, but merely an outer imagination.

But it's clear that in order even to *imagine* something as outer—i.e. to present it to ·inner· sense in intuition—we must already have an outer sense, through which we must immediately distinguish •our passivity in respect of any outer intuition from •our activeness in every act of imagination. . . .

**Note 2.** All this perfectly fits what happens when we use our knowledge faculty in experience, in sorting out the temporal aspects of what happens. It's not just that

I can't perceive any facts about *when* this or that occurs except through facts about how things move relative to persistent things in space (for instance, the motion of the sun relative to objects on the earth);

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but also

The only persisting thing that is given to me in intuition and could be the basis for the concept of a substance is *matter*; and even *its* persistence isn't something I learn from outer experience; rather, I presuppose it *a priori* as a necessary condition of having any grasp of any temporal sequence of events, and therefore also as required for my sense of myself as lasting through time—which means that my *inner* sense depends on my *outer* sense.

You might think that matter doesn't have to come into the story, because my consciousness of myself in the representation *I* presents me, through intuition, with something persistent that could serve to anchor my thoughts about the temporal aspects of my inner sense. . . . But this is quite wrong, because my representation *I* isn't an *intuition*, but a merely *intellectual* representation of the activeness of a thinking subject, so it doesn't have the faintest touch of anything intuitional about it, so it can't play the 'persistence' role that matter plays.

**Note 3.** From the fact that the existence of outer things is required for the possibility of a determinate consciousness of myself, it doesn't follow that every intuitive representation of outer things involves their really existing; for a representation of them may well be the product merely of the imagination (as in dreams and delusions). But this doesn't weaken the thesis I have been defending against problematic idealism,

because such a representation merely reproduces previous outer perceptions, which I have shown to be possible only through the *actuality* of outer objects. That's all I need. All I have been trying to prove is that inner experience *in general* is possible only through outer experience *in general*. To show that any individual experience is veridical rather than imaginary, one has to look into the details of the case to see how well they fit with the criteria for all real experience.

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·LONG FOOTNOTE TRANSFERRED FROM B PREFACE· [see page 16]

The new refutation of psychological *idealism* is the only addition, strictly so-called, in the second edition; it is, I believe, a strict proof—and the only possible proof—of the objective reality of outer intuition. Even if idealism didn't do any harm to the essential aims of metaphysics (as in fact it *does*), it would still be a scandal to philosophy and to human reason in general if the existence of things outside us had to be accepted merely *on faith*, and if we had no satisfactory proof to bring to bear on anyone's doubts as to whether those things do exist. (All the more scandalous because these are the outer things from which we derive the whole material of knowledge, even for our inner sense!) [At this point Kant asks that a short passage in the proof be replaced by something else, which he provides. In this version the replaced passage doesn't appear; the replacement is 'But this . . . be determined.' in the proof on page 127.] You may want to object against this proof:

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'I am immediately conscious only of what is *in me*, i.e. of my *representation* of an outer thing; so there is still an unsettled question about whether there is anything outside me corresponding to that representation.'

But that objection is wrong. Through inner *experience* I am conscious of *my existence* in time (and therefore also conscious of the possibility of knowing details about what it is like at different times), and experience is more than merely being conscious of a representation. My experience

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is identical with my *empirical consciousness of my existence*, and I can't have any details about that except through a relation to something. . . .that is outside me. Because this consciousness of my existence in time essentially involves my consciousness of a relation to something outside me, it follows that what connects this outside something with my inner sense is •experience and not •invention, •sense and not •imagination. . . . Suppose this were the case:

Along with having an intellectual consciousness of my existence in the thought 'I am' which accompanies all my judgments and acts of understanding, I can at the same time have a sense of my existence through *intellectual intuition*.

In *that* case I wouldn't need to be conscious of a relation to something outside me. •But that's not how things stand•. The only intuition I have is not *intellectual* but *sensible*, so it necessarily brings time into the story; and my argument takes over from there. . . . The reality of outer sense is thus necessarily bound up with inner sense, if it is to be possible to have any experience at all. . . . To decide which of my given intuitions correspond to actual objects outside me—i.e. which of them belong to outer sense and not to imagination—I must go by the rules according to which *any* experience (even inner experience) is distinguished from imagination—always presupposing that *there is such a thing as outer experience*. I would add one last remark: The representation of something *persistent* in existence is not the same as a *persistent representation*. The representation of •something persistent• may be very transitory and variable, like all our other representations (even those of matter!), but it *relates to* something persistent. The persistent thing must be external, and distinct from all my representations. . . .

•END OF FOOTNOTE FROM B PREFACE•

•NECESSITY•

Finally the third postulate. [Discussions of the other two started on pages 124 and 125 respectively.] The third postulate concerns •material necessity in existence, and not merely •formal and logical necessity in the connection of concepts. The existence of an object of the senses can never be known •absolutely *a priori*; but can be known •comparatively *a priori*, i.e. relative to some other existing thing that is already given.

[Kant's terminology here suggests that his topic is the notion of 'comparatively *a priori*' that he mentioned on page 126; but in fact it isn't. On page 126 the topic was the case where

•x's existence is known comparatively *a priori* because it is known in advance of any perception of x (or, more broadly, because x's existence is known in advance of any perception of—with the blank filled in somehow).

His present topic is the case where

•x's existence is comparatively or relatively necessary, meaning that it is necessitated by facts about some other existing thing that has already been perceived.

The two have nothing to do with one another.]

And even in that case, we can get to necessity only through how the given perception hangs together with others in experience. So the necessity of x's existing can never be known •from concepts, but only •from x's being connected, through the universal laws of experience as such, with something that is perceived. Now, the only way we can know that

•x's existence is necessary, given that y has already been perceived,

is for x to be •known to be• an *effect of* y, the two being connected in accordance with the laws of causality. (I'm not talking here about *substances* as effects. The only items that can be caused—and thus the only ones that we can know to be necessary in the manner I'm discussing—are *states of substances*, which will be effects of other perceptually given states, in accordance with empirical laws of causality.) It follows that the criterion of necessity lies solely in this

law of possible experience: **Everything that happens is determined *a priori* through its cause in the domain of appearance.** So the range of our knowledge of necessary existence is triply narrowed. (1) We know the relative-necessity only of effects in Nature whose causes are given to us, i.e. perceived by us; (2) the notion of existing necessarily extends no further than the domain of possible experience; and (3) even within that domain it isn't applicable to the existence of substances, because substances don't happen, or begin to exist, so they can't be empirical effects. Necessity concerns only the relations among appearances in accordance with the dynamical law of causality, which makes it possible for us to infer *a priori* from a given existence (a cause) another existence (the effect). The proposition that

*Everything that happens is hypothetically necessary*—i.e. is necessitated by something else—is a principle that brings alteration in the world under a law, i.e. under a rule of necessary existence, without which there wouldn't even be a Nature. So the proposition that

(1) Nothing happens through blind chance (Latin: *non datur casus* [= 'There is no chance'])

is an *a priori* law of Nature. And so is the proposition that

(2) No necessity in Nature is blind; necessity is always a conditioned and therefore an intelligible necessity (Latin: *non datur fatum* [= 'There is no fate']).

281 [In (2) Kant is rejecting the idea that such-and-such might be bound to happen, have to happen, be fated to happen, not *because so-and-so is the case*, but just simply bound or necessitated or fated, *period*. He is saying that there's no such thing as 'fate' in that sense; whatever is necessitated to happen is *caused* to happen, and that makes its necessary status intelligible.] These are both laws through which the play of alterations is rendered subject to a *nature of things* (i.e. of things as appearances)... These two are dynamical principles. (1) is really a consequence of the principle of

causality, which belongs in the analogies of experience. (2) is a principle of modality, adding the concept of necessity to causal determination, which itself stands under a rule of understanding. And then there is the proposition that

(3) There are no leaps in the series of appearances, i.e. of alterations (Latin: *non datur saltus* [= 'There are no leaps']);

This principle of continuity doesn't just forbid leaps; it also lays down that

(4) In the totality of empirical intuitions in space there are no gaps or blanks between any two appearances (Latin: *non datur hiatus* [= 'there are no gaps']).

This last can be expressed as the proposition that experience can't offer anything that •proves a vacuum, or that even •allows for the possibility of one. What about empty space that doesn't involve a *gap* between two appearances, because it lies beyond the field of possible experience, i.e. outside the world? The mere understanding can't tackle such a question, because the understanding answers only questions that concern the use of given appearances for obtaining empirical knowledge. The question of empty space surrounding the world is a problem for idea-wielding *reason* that goes out beyond the sphere of possible experience and tries to reach judgments about what surrounds and bounds it; so it's a problem to be considered in the Transcendental Dialectic. The above four propositions—

(4) *Non datur hiatus*, (3) *Non datur saltus*, (1) *Non datur casus*, (2) *Non datur fatum*

—like all principles of transcendental origin, can easily be presented in an order dictated by the categories, with each put in its proper place. But you've had enough practice by now to be able to do this for yourself, or easily to discover the thread that will lead you through it. The four principles have this in common: they don't allow empirical theories

that do violence or harm to the understanding and to the continuous connection of all appearances—i.e. to the unity of the concepts of the understanding. . . .

Is the domain of possibility larger than the domain that contains all actuality? Is the domain of actuality larger than the sum of everything that is necessary? Those are perfectly good questions, to be answered synthetically, and yet they come under the jurisdiction of reason alone. For they are tantamount to asking which of these is correct:

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- Things as appearances all belong to the sum and context of a single experience, of which every given perception is a part, a part which therefore can't be connected with any other series of appearances.

- My perceptions could belong to—be connected up with—more than one possible experience.

The understanding, in accordance with the subjective and formal conditions of sensibility as well as of self-awareness, prescribes *a priori* to experience in general the rules that are needed to make experience possible. • Forms of intuition other than space and time, • forms of understanding other than through concepts—even if these were possible, we can't conceive of them or make them intelligible to us; and even if we could do that, they still wouldn't belong to *experience*, which is the only kind of knowledge in which objects are given to us. The understanding can't decide whether, in addition to all the perceptions that constitute our possible experience, there are *other* perceptions—ones of a quite different domain of reality from the one to which we have access. All that the understanding can deal with is the synthesis of what is *given*. That's why I said that the question of whether the domain of possibility is larger than that of actuality is not for understanding to answer, and falls within the scope of reason. Let's look at the standard reason-involving inferences through which people have sought to open a great

realm of possibility, of which what's actual (the objects of experience) is only a small part. Here is how one of them goes. From the proposition

- Everything actual is possible

we infer, in accordance with the logical rules of conversion, the merely particular proposition

- Something possible is actual;

which seems to amount to saying that

- Much that is possible is not actual.

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It's obvious that this inference is a poor thing, because the 'seems to amount to' relation is so weak. Then here is a second argument: We seem to be justified in holding that there are more possible things than actual ones, on the ground that for something to be actual it must be possible *and* . . . something else. But I refuse to allow this addition of 'something else', because the something else that would be needed is *impossible*.

[There seems to be no way to make good sense of the reason Kant gives for this, and it is therefore omitted. The thesis that

- actuality = possibility-plus-something

is one that he explicitly asserts in footnote 17 below. In the omitted passage he seems to slide from that true thesis to the plainly false thesis that

- actual things have the features of possible things plus some features that possible things don't have.

After this passage, Kant reverts to his earlier line of thought, which seems to cast doubt on 'There are possibilities that aren't actual' by equating it with 'There are actualities that have no connection with any actuality that we do or can know about'. That material is omitted also.]

I have mentioned these matters only because I wanted to cover everything that is *ordinarily counted as* a concept of understanding. But in fact *absolute possibility*—possibility that holds in all respects—is no mere concept of the understanding, and can never be employed empirically. It belongs solely to *reason*, which goes beyond all possible empirical

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use of the understanding. So I've had to settle for offering some merely critical remarks, leaving the matter in the dark until I come back to it at a later time.

Before concluding this fourth section, thus concluding the system of all principles of pure understanding, I must explain why I call the principles of modality 'postulates'. [Kant goes on to reject the usage of 'some recent philosophical writers' who take a 'postulate' to be a proposition that is self-evident and needn't be defended. Proceeding in that way with any synthetic proposition, he says, would be inviting disaster. He then proceeds to repeat what is essentially the material given on page 123 above—the accounts of the three modal concepts, and the claim that what each does is not to enlarge the item that is called 'possible' or etc., but just to say how that item relates to the faculty of knowledge. He calls these accounts 'postulates', he says, because of how that term is used in mathematics:] In mathematics a 'postulate' means the practical proposition that contains nothing except the synthesis through which we first •give ourselves an object and •generate its concept—e.g. to describe a circle from a given point with a given line on a plane. Such a proposition can't be proved, because the procedure that it dictates is precisely the one through which we first generate the concept of such a figure. With exactly the same right we can 'postulate' the principles of modality, because they don't increase our concept of a thing<sup>17</sup> but only show how it is connected with the faculty of knowledge.

<sup>17</sup> In taking something to be actual, I certainly say more than merely that it is possible; but I don't say more *about the thing*. For there can never be more to the thing if it is actual than there is if it is merely possible. But while calling a thing 'possible' is relating it to the understanding (in its empirical use), calling it 'actual' is at the same time connecting it with perception.

### General Note on the System of the Principles

It is very remarkable that the unaided categories can't show us that a thing is possible, and that to exhibit the objective reality of a category—i.e. to show that what it's a concept of is possible—we must always have an intuition available to us. Take for example the categories of relation. Mere concepts won't show us

- (1) how something can exist as subject only, and not as a mere state of something else, i.e. how a thing can be **substance**; or
- (2) how something's existing necessitates something else's existing, i.e. how a thing can be a **cause**; or
- (3) how, when several things exist, the facts about one of them imply things about the others, and vice versa, i.e. how there can be a **community** of substances.

The same holds for the other categories—for example, how one thing can be identical with many things taken together, i.e. can be a **magnitude**. So long as we don't have intuitions, we don't know whether with this or that category we are thinking an object—whether indeed there *can* be an object that fits it. All this confirms •that the categories are not in themselves items of knowledge, but are merely *forms of thought* for making items of knowledge out of given intuitions. It also confirms •that no synthetic proposition can be made from mere categories—I'm thinking of propositions such as that

- there is substance, i.e. something that can exist only as subject and not as mere predicate;
- everything is a quantum, etc.

—unless we have something enabling us to go out beyond a given concept in order to connect it with another. Thus, no-one has ever succeeded in proving a synthetic proposition—e.g. that every contingently existing thing has a cause—

merely from pure concepts of the understanding. The most we can prove ·in that way· is that without the causal relation we couldn't comprehend the existence of anything contingent, i.e. couldn't know its existence *a priori* through the understanding; which doesn't imply that this (·i.e. causal connectedness·) is also a condition of the possibility of *the things themselves*. If you look back at my proof of the principle of causality, you'll see that I was able to prove it only of objects of possible experience: 'Everything that happens—i.e. every *event*—presupposes a cause' [page 130]. ·That is narrower than 'Everything contingent has a cause', and anyway· it was proved not from mere concepts, but only as a principle of •the possibility of experience, and therefore of •the knowledge of an object given in *empirical intuition*. [In the remainder of this paragraph Kant says that it's obvious to everyone 'from mere concepts' that everything contingent must have a cause, but that's because people equate 'x is contingent' with 'x depends on something else for its existence', which amounts to equating 'x is contingent' with 'x is an effect'—which makes 'Everything contingent has a cause' analytic. What Kant says here about contingency in relation to 'thinking the opposite' is linked to a footnote.<sup>18</sup>]

<sup>18</sup> We can easily think the non-existence of matter, but the ancients didn't infer from this that matter exists contingently. All alteration consists in some state's changing from existing to not existing, but this change doesn't prove that the state exists contingently because its opposite is real. For example, when a moving body comes to rest, that doesn't prove that its •motion was contingent because it was the opposite of •rest. The point is that motion is 'opposed' to rest only logically, not in reality. ·The *real* opposition is between 'motion at time t' and 'rest at time t'. To prove the contingency of the body's motion, we would have to prove that *instead of* moving at that earlier moment it could have been at rest—could have been at rest *then*. That it is at rest *later* has nothing to do with it; 'moving at t<sub>1</sub>' is not the opposite of 'at rest at t<sub>2</sub>'.

But it is even more remarkable that in order to understand the possibility of things in accordance with the categories, and so to demonstrate the categories' *objective reality*, we need specifically **outer** intuitions. Think about this in connection with the categories of *relation*. (1) To obtain something *persistent* in intuition corresponding to the concept of *substance*, and so to demonstrate the objective reality of this concept, we need an intuition of matter in **space**; because it's only space that is characterized by persistence, whereas time (and therefore everything in inner sense) is in constant flux. (2) If we are to present *alteration* as the intuition corresponding to the concept of *causality*, we must take as our example motion, i.e. alteration in **space**, because this is the only way we can have an intuition of alterations—·or at any rate, it's where our intuitions of alterations have to •start·. The possibility of an alteration can't be grasped through pure understanding. An alteration is a combination of contradictorily opposed states in the existence of a single thing. How can one state of a thing be followed by an opposite state? Without help from intuition, this can't be grasped by reason; it can't be understood at all. And the needed intuition is the intuition of the movement of a point in space. The presence of the point in different locations (as a sequence of opposed states of affairs) is the thing—the only thing—that gives us our •'starter' intuition of alteration. Later on we can also make *inner* alterations thinkable, but to do this we have to

- represent time (the form of inner sense) figuratively as a *line*,

and to

- represent the inner alteration through the drawing of this line (motion),

which means that we are using outer intuition to make comprehensible to ourselves the temporally drawn-out existence

of ourselves in different states. Why? Because perceiving an alteration *as* an alteration presupposes that there is something persistent in intuition, and that can't be found in *inner* sense. (3) The possibility of the category of *community* can't be grasped through mere reason alone; so the objective reality of this category has to be determined through intuition—and indeed through outer intuition in **space**. Think about what is involved in community:

Several substances exist in such a way that from the existence of one some effect *follows* regarding the existence of the others, and *vice versa*;

or, in other words:

*Because* there is something in any one of them *x*, there must also be in each other one *y* something that isn't to be understood solely from the existence of *y*.

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[Kant expressed the former of those two in a manner implying that what follows from each substance is *the existence of* the others; but this has to have been a slip, because he firmly holds that within the domain of appearance nothing can cause a substance to exist. See page 118.] We can't make sense of the idea of community as holding between things that stand in complete isolation from one another so far as their existence is concerned. Leibniz believed that the world contains substances that could be thought through the understanding alone, and ascribed community to them. So he had to fall back on the thesis that God arranges all this; for he rightly thought that a number of substances *of the sort he believed in* couldn't form a community unaided. But we can easily make the possibility of community—of substances as appearances—perfectly comprehensible, if we represent them to ourselves in space, i.e. in outer intuition. For space contains in itself, *a priori*, formal outer relations as conditions of the possibility of the real relations of action and reaction, and therefore conditions of the possibility of community.

And it can just as easily be shown that the possibility of things as *quantities*—and therefore the objective reality of the concept of *quantity*—can be exhibited only in outer intuition, and that only *through* the mediation of outer intuition can it be applied also to inner sense. Not wanting to go on for too long, I leave you to supply your own examples of this.

These remarks are of great importance, not only in confirmation of my refutation of idealism (above), but even more for their bearing on a later discussion, *in the Dialectic*,

•of *self-knowledge* by mere inner consciousness, i.e. 294  
by determination of our nature without the aid of  
outer empirical intuitions.

The bearing on this of the present remarks is that they show the limits of the possibility of this kind of self-knowledge.

[Reminder: What we have been in since page 98 is chapter 2, section 3: 'A systematic presentation of all the synthetic principles of pure understanding'.] The upshot of this whole section is therefore this: all the principles of the pure understanding are nothing more than *a priori* principles of the possibility of experience; and all *a priori* synthetic propositions relate to experience, and wouldn't be possible if they didn't.