KANT - Third Selection

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. 219

[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 220 say about what any appearance will be like. Rather, they are concerned only with 'the *existence* of such appearances and

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 221
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 222
regulative, not constitutive. . . .

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
224 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
225 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 226
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

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 Grundsatze* = '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 229
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

•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.

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
230 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.

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
232 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 233
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

imagination sets one state before and the other after, not that one state objectively precedes the other; which is to say
234 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'·

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
235 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 apprehension 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 236
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

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·

Let us now proceed to our problem. That something *happens*—i.e. that some thing or state comes into existence—
237 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
240 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 241
occurs, a B event follows.
- •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 con- 242
scious 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,

overlaying 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
243 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
244 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 245
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

247 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 necessarily 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 248 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

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.][15]

·CONTINUITY OF ALTERATIONS·

If a substance passes from one state y to another state x, the 253
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.]

[15] 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.

This shows how we can know *a priori* a law about the
256 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