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CONCRETE LOGIC

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What are the objects or elements in parts 1 and 2 of Spinoza's *Ethics*? What are the relationships among them? These look arcane questions, but they should be important, both in the understanding of Spinoza's thought and more widely.

A "thing"—*res*—appears right at the beginning of the *Ethics*:

A thing is said to be finite in its own kind when it can be limited by another thing of the same nature.¹

Later in part 1, it is a "thing" that is determined to act in a particular way by God. A finite thing is "determined to exist and to act by another cause which is also finite and has a determinate existence."² An account of the existence and action of things sounds like physics. The relationships among *things* sound like physical relationships, especially since the most prominent of those relationships seems to be causal, which suggests physical causality. In part 2 it becomes clear that psychological objects and causes must be included. Yet, Curley writes, "one thing every interpreter of Spinoza agrees on is that Spinoza connects the causal relation with the relation of logical consequence,"³ which suggests that this is not physics (nor psychology) at all, but logic. The difference between physics and logic certainly sounds significant, with significant repercussions.⁴ At any rate, this looks like some kind of border region: perhaps on or around the boundary between metaphysics (or First Philosophy, in Cartesian terminology) and physics, or between geometry and mathematical physics. The crossing of those borders has proved to be philosophically perilous.

Several questions need to be considered in thinking about Spinoza's subject matter. Getting an answer to one or two of these may not be too hard (although each has generated much scholarly debate). Unfortunately, consistent answers to all are needed:

1. There is a theological dimension: the question of whether, or how far, Spinoza was a pantheist. If, for example, in identifying God with nature he was identi-

fying God with physical (and mental) nature, then pantheism does not look very far away. On the other hand, a more *logical* reading might avert that risk, if indeed it was a risk.

2. There are difficult logical questions. At least one “thing” was said to exist by necessity: God.⁵ But God seems to be the same as nature. And if nature means everything, how is it possible that “from the order of Nature it is equally possible that a certain individual exists or does not exist”?⁶ If everything is necessary, how can anything not be necessary?
3. There is the delicate position of Spinoza’s infinite modes. It might not be too hard to juggle only individual things (or finite modes) and the whole of nature; but there were also items in the system that shared the necessity, infinity, and eternity of God while also sharing the characteristic of modes of “following from” God. A natural reading might be that these infinite modes were intermediaries between God or nature and individuals, causally or otherwise, except that the suggestion that non-necessities might follow from necessities would drive Spinoza into an obvious modal fallacy.
4. There is the interpretation of Spinoza’s monism. God or substance was said to be unique:⁷ hardly controversial as an expression of monotheism, but hardly self-explanatory as an ontological assertion. In the statement “Nothing exists except substance and modes”⁸ how many things are implied: substance and modes or one substance including modes?
5. Then there is the historical context: not a problem in itself, but not to be ignored. If Spinoza’s first aim was to resolve some paradoxes in Cartesian physics⁹—filing down the edges of the Cartesian concepts of cause, God, and substance to achieve a smoother fit between them, for example—then Spinoza might be imagined to have adopted a less radical approach than some other perspectives.

None of this is mere detail. We have no idea what questions Spinoza was trying to answer, and there are widely differing possibilities. He could have been asking the question, What sorts of objects exist? and then answering: Not more than one sort of object—substance or God. And that suggests some sort of primitive physical inquiry in the footsteps of Thales. Yet the thought that Spinoza’s God was any sort of object—even a special super-object—seems hopelessly inadequate.

My own view is that—despite the alleged unanimity of “every interpreter of Spinoza”—there is no benefit in bringing in logic. To say that “the causal relation” is connected with “the relation of logical consequence” strikes me as almost entirely unhelpful. Whatever Spinoza was doing, it was far more concrete than logic: though we can call it concrete logic if we like.¹⁰ My argument will be that, if anything, Spinoza made logic more like physics, rather than making physics into logic. However, the real point is that a dichotomy between the metaphysical and the physical—even a dichotomy only to be denied—is inappropriate in thinking about his work. One way of understanding his approach is in quasi-Kantian terms, of *making physics possible*, although Spinoza’s work left the question of what exists entirely to those who pursue research to find out.

I concentrate almost exclusively on the first two parts of the *Ethics*, because we can surely assume that Spinoza worked long and hard to get these into the shape he

wanted. There are also the sections of the *Theological-Political Treatise* on natural law, written after the beginning of the *Ethics*, and some of the correspondence. But the earlier works—the *Treatise on the Emendation of the Intellect*, the *Short Treatise*, and the examination of Descartes—must be treated with caution.¹¹ Not enough is known about Spinoza's detailed philosophical development. It is in the area of the causality of individuals and the role of his infinite modes where some carefully worked changes seemed to have occurred (and where some of his thinking seems to have been left in an untypically ambiguous form).¹²

I start with the more obvious areas, in the hope of finding some solid ground. One firm destination seems to be 2p13le3 of the *Ethics*:

A body in motion or at rest must have been determined to motion or rest by another body, which likewise has been determined to motion or rest by another body, and that body by another, and so ad infinitum.

Here, the language is unambiguously corporeal. It would be difficult to argue that this is logic: *Corpus motum . . . determinari debuit ab alio corpore*. This is the point from which further physical research becomes possible.

The lemmas and postulates were a diversion from the main task sketched in the short preface to part 2, to deal with “only those things that can lead us as it were by the hand to the knowledge of the human mind and its blessedness.” Just “a few things about the nature of bodies”¹³ needed to be included.

In 2p13le3 Spinoza says that bodies determine other bodies to motion or rest in an endless series. The demonstration is interesting. Bodies are things—*Corpora res singulares sunt*—referring back to 2d1. But that definition does not mention *res singulares*:

By “body” I understand a mode [*Per corpus intelligo modum*] that expresses in a definite and determinate way God's essence in so far as he is considered as an extended thing.

Then we are referred back to 1p25c, which does get to things:

Particular things are nothing but affections of the attributes of God; that is, modes wherein the attributes of God find expression in a definite and determinate way.

The important element in the demonstration of 2p13le3 is 1p28:

Every individual thing, i.e., anything whatever which is finite and has a determinate existence, cannot exist or be determined to act unless it be determined to exist and to act by another cause which is also finite and has a determinate existence . . . and so ad infinitum.

Spinoza's language was bureaucratically pedantic, and I—though not others¹⁴—find it hard to escape the thought that he was trying to stress that he meant exactly

what he said, in just those terms, no more and no less: individual things have only other individual things, in infinite series, as their determinants or causes. *Ethics* 2p13e3 is a special case of that, applied to *corpora*, rather than to *res* in general. (*Ethics* 2p9 is another special case, applied to “the idea of an individual thing”—*idea rei singularis*.)

This is the working level of nature—how things are and how they work. Spinoza gave a less cautious account in a letter of 1667:

[I]f someone were to ask through what cause a certain determinate body is set in motion, we could answer that it is determined to such motion by another body, and this again by another, and so on to infinity . . . by continuing to posit another body we assign a sufficient and eternal cause of this motion.¹⁵

And, at this working level, a knowledge or understanding of how things exist and operate must be incomplete:

[E]ach part of Nature accords with the whole and coheres with other parts. As to knowing the actual manner of this coherence and the agreement of each part with the whole . . . this is beyond my knowledge. To know this it would be necessary to know the whole of Nature and all its parts.¹⁶

Things determine other things to exist and act. The definition of necessity is relevant:

A thing is said to be necessary or rather, constrained, if it is determined by another thing to exist and to act in a definite and determinate way.¹⁷

The wording matches the wording of 1p28—*ab alio determinatur ad existendum, & operandum*, and so on. The temptation, as with 1p28, must be to hope or imagine that Spinoza said more than he did, or at any rate something quite different, and any commentary should amount only to the prosaic task of pointing out that he said what he said, and no more. It is a thing—*res* again—that is necessary, not a sentence, statement, or proposition. And a necessary thing is a thing determined to exist and act by another thing. There is nothing here about necessary truth, and so even a modern *de re* formulation such as *b is determined necessarily by a*, if taken as a proposition that is supposed to be true (or even necessarily true), may be misleading. To be determined is to be necessary. The necessity in the existence and action of things does not consist in the truth of assertions about them, but simply in their having causes (not *the fact that* they have causes). Spinoza’s view was that we can be sure that all individuals have determinants—and so are necessary—though we can never know in full what these determinants are. Again, the articulation of his view was precise. He wrote of the “order of the whole of Nature, or the connection of causes”—one mode being perceived through another *ad infinitum*¹⁸—and

we plainly have no knowledge as to the actual co-ordination and interconnection of things—that is, the way in which things are in actual fact ordered and con-

nected—so that for practical purposes it is better, indeed, it is essential, to consider things as contingent.¹⁹

In an earlier letter—the important *Letter on the Infinite* of 1663 (Ep 12)—he had spelled out the implication for predictive science:

[W]hen we have regard only to the essence of Modes and not to the order of Nature as a whole, we cannot deduce from their present existence that they will or will not exist in the future, or that they did or did not exist in the past.²⁰

That would satisfy Hume. Our understanding of the future and the past, whatever it is, cannot be deductive.

So, to summarize: in terms of bodies specifically (*corpora*), or particular things more widely (*res particulares*), Spinoza's subject matter, and the nature of its interrelationships, was not obscure. He did not mention logic nor suggest that what he called a *causa* had any relation to logic. He said that individual things are caused by other individual things, in the most concrete terms. All of this relates only to what exists and happens, not to the truth or modality of what is said about what exists and happens. In Davidson's language, we are faultlessly with "the analysis of causality," rather than with "the logical form of causal statements." As Davidson says, the confusion of the two can be unfortunate; but Spinoza did not fall into it.²¹

All this may be the ground level of Spinoza's system in one way—the day-to-day existence and action of ordinary objects—but it cannot be described as the ground level in another way. We are joining the story at a late point, 2p13le3 of the *Ethics*, not focusing on what precedes it. What about "nature as a whole," or the metaphysical precepts about nature into which the causality of ordinary objects must be fitted?

At least two routes are possible. One, deceptively simple, was outlined in 2p13le7s:

[H]itherto we have conceived an individual thing composed of . . . the simplest bodies. If we now conceive another individual thing composed of several individual things of different natures . . . if we go on to conceive a third kind of individual things composed of this second kind If we thus continue to infinity, we shall readily conceive the whole of Nature as one individual whose parts—that is, all the constituent bodies—vary in infinite ways without any change in the individual as a whole.

(A parallel assertion in terms of ideas rather than bodies is given at 5p40s, where modes of thinking "all together constitute the eternal and infinite intellect of God.") Another appears in the crucial series of propositions that lead up to the theoretical licence for natural science—"The human mind has an adequate knowledge of the eternal and infinite essence of God. . . . Hence we see that God's infinite essence and his eternity are known to all."²² Once more, "each particular thing is determined by another particular thing to exist in a certain manner," but this does not take account

of “the very existence of particular things in so far as they are in God.” The “force by which each persists in existing follows from the eternal necessity of God’s nature.”²³

So, in considering the existence and action of particulars, at least two factors assume significance: There is the existence of many series of particulars, adding up in some way as “the whole of Nature as one individual.” Then there is the force by which each individual “persists in existing,” which is associated with the notion of essence (by 1p24) and with “striving” or *conatus* (3p6–7). More immediately, it provokes questions about *why* every individual has a series of other individuals as determinants. “Has” here is equivalent to “must have,” since having a cause is being necessary, so we are now asking why or how that is so.

Again, this is a point where the general outline of Spinoza’s position may seem reasonably clear, but where the clouds gather as soon as we look more closely. We might think that everything is simple enough. Series of individual causes and effects, taken all together, add up as infinitely numerous finite parts of an infinite whole: nature or God. Effects (must) follow causes in nature, because nature is like that. So, it seems, God consists of a collection of corporeal (and mental) objects in a plainly pantheistic way; everything that happens or exists must be governed by necessity; only one object or thing exists: God or nature. But, as we have seen already, all these conclusions can lead to difficulties.

Individuals seem to be parts of an infinite nature. Yet the relationships between parts and a whole need to be considered with the greatest of care, as does the notion of the existence of “one” God equivalent to nature (as opposed to “not two or more” or a “unique” God)—and in both these topics even Spinoza was not always as careful in his language as he might have been. Similarly, it is not at all hard to retrogress into saying that things in nature are *governed* or *ordered* by necessity, or even *governed by laws*, despite Spinoza’s open warnings against that metaphor. Shirley, for example, at one point, translates *lex . . . universalis omnium corporum* as “a universal law governing all bodies.”²⁴

Interestingly, almost all the material needed to make sense of the existence of things in nature and of their necessary operation is contained, if briefly, in the late correspondence with Tschirnhaus. We can look first at how things exist and then at how they act.

Epistle 81 contains an epitome of the argument about parts and wholes:

[That] it is not from the multitude of parts that an infinity of parts is inferred, is clear from this consideration: if it were inferred from the multitude of parts, we would not be able to conceive a greater multitude of parts, but their multitude would have to be greater than any given number. This is not true, because in the entire space between the two non-concentric circles, we conceive there to be twice the number of parts as in half that space, and yet the number of parts both in the half as well as the whole of this space is greater than any assignable number.²⁵

Finite modes, in infinite chains or networks of determinants and effects, in a sense make up or constitute infinite wholes. But it cannot be from the “multitude of parts”

that infinity is ascribed, for the logical reason expressed correctly to Tschirnhaus. Infinity, or infinities, cannot just be large totalities. If we want or need infinities, we must therefore characterise them in some other way. We *do* need infinities, for mathematics. We *may* want them, for theology. Nature can be regarded as infinitely extended, and as including, for example, lines on which an infinite number of points can be found. In one way, the relationship between finite individuals and infinite nature can be regarded as one of *constitution*—but this is only one way, because here we are thinking only, as Spinoza puts it, modally. Things together make up infinite modes. These are infinite not because they are large collections of things, but because, seen in another way, they are the same as nature, which is unlimited in the sense that there can be nothing else.

All this answers the question how God could be an infinite *res extensa*, not separate from nature and yet not corporeal.²⁶ Spinoza derided those who think that “corporeal substance, insofar as it is substance, is made up of parts, and so they deny that it can be infinite, and consequently that it can pertain to God.” Here, the logical load was carried by the proviso “insofar as it is substance”—*quatenus substantia*.²⁷ God or nature as substance—*natura naturans*—is infinite and indivisible. God or nature as modes—*natura naturata*—will be considered as infinite but constituted of finite parts. In 1663, at the time of the writing of the *Letter on the Infinite* (Ep 12), a contrast was drawn between certain things that are “infinite by their own nature and cannot in any way be conceived as finite” and other things that are “infinite by virtue of the cause in which they inhere.” Spinoza said that “when the latter are conceived in abstraction, they can be divided into parts and be regarded as finite.” This was the same contrast as one drawn earlier in the letter, between “that which must be infinite by its very nature or by virtue of its definition” and “that which is unlimited not by virtue of its essence but by virtue of its cause.”²⁸ These contrasts remained in place by the time of the final version of the *Ethics*, but there they were, more explicitly, contrasts between the ways in which nature could be conceived. Hence the force of *quatenus substantia*.

We should be able to reach some conclusions about what is supposed to exist. Finite modes, infinite modes,²⁹ and substance, nature or God, all exist but are not different things. They are the same thing, considered in different ways. The corporeal (and mental) contents of nature make it up. But they are not “made of nature,” in the sense that nature, substance, or God is some sort of material that constitutes objects. This should be the response to the claim that Spinoza was a pantheist.

Tschirnhaus was also responsible for asking Spinoza about the causal structure of his system. His question has been regarded as tricky:

I should like you to do me the kindness of showing how, from Extension as conceived in your philosophy, the variety of things can be demonstrated a priori . . .

In mathematics I have always observed that from any thing considered in itself . . . we are able to deduce at least one property; but if we wish to deduce more properties, we have to relate the thing defined to other things.³⁰

Spinoza's answer — Ep 83 — seems unsatisfactory. (Sadly so: "If I live long enough," he wrote, "I shall discuss this with you more clearly"; six months later he was dead.) He could point out to Tschirnhaus only that his question was based on a misunderstanding. In fact it was possible to deduce a good deal about God from the definition of a being to whose essence existence pertained. Descartes had been wrong to start with matter defined as extension. Instead, "it" must be explained, he said, "by an attribute which expresses eternal and infinite essence." Here, the negative point was a lot clearer than the positive one. Negatively, Descartes's introduction of "matter" into his system was as far from Spinoza's approach as possible — he thought we could clearly understand matter as something quite different from God.³¹ Spinoza's positive view was more cryptic. His "it," which must be "explained by an attribute," could, grammatically, be "matter" — as all translators assume — or equally it could be "the variety of things." In any event, what he meant, presumably, was that one of the widest possible conceptions of nature was extendedness — the attribute of extension. And "the variety of things" had nothing to do with that.

Tschirnhaus's question is revealing because it makes a crucial point in grasping Spinoza's system. We may believe that it contains a set of general principles about the world which need to be related to existing, concrete reality. That view might seem to be encouraged by the presence of wide, abstract principles and of specific empirical postulates. General rules plus particular instances, as it were, generate the results: physical truths about the world, psychological and moral truths about people.

That reading may be harmless for the consequences deduced with the aid of Spinoza's empirical postulates, but it is seriously misleading when applied to the basic steps in his thinking and disastrously so in the context of understanding his grounding of science.

An instructive contrast is provided by the Cambridge metaphysician McTaggart, one of whose merits was an exceptional capacity for teasing out the exact premises within Spinoza's thinking. He believed that

[i]t would be possible to consider what characteristics are involved in being existent, or in being the whole of what exists, without raising the question whether anything did actually exist.³²

And as a minimal presupposition for his system, he thought he needed to rely on "perception" to show himself that at least one thing did, in fact, exist.

Now this looks like Spinoza's introduction of postulates such as "Man thinks," as if we needed *something* specific. But the difference is absolute and essential. For Spinoza, there could be no question, even in theory, as there had been for Descartes and as there would be for McTaggart, that anything like "matter" might not exist. Divine nature — the starting point — was not a generalized abstraction, needing the addition of particular premises — it *is* what exists. More important, Spinoza could never have fallen for the dichotomy that appealed to Kant:

Philosophy keeps to universal concepts only. Mathematics can accomplish nothing with the mere concept but hastens at once to intuition, in which it contemplates the concept *in concreto*.³³

For Spinoza, what exists was conceived fundamentally as extended (and as thought, and in infinite other ways). Progressing from that level of abstraction to useful physical or mathematical principles might indeed present formidable problems, but among those problems there was no question to be answered by a premise that some object exists: that was taken for granted from the outset. Spinoza's ideal model of explanation was never one of general covering law + specific instance = result. What exists or happens in nature never "follows" in that way from some general characteristics of nature. What happens ("in nature") depends on other things that happen ("in nature"). In starting scientific investigations with "those features that are most universal and common to the whole of Nature," one of the features we can assume will of course be the existence of corporeal nature as extended.³⁴

Spinoza's monism should be seen along these lines: It was not a physical hypothesis that everything is made of one sort of stuff. It was not a logical theory about a framework for any possible world. In a valuable way, it extinguished the point of philosophical and theological ontology. What sorts of things exist—quarks and leptons, for instance—can be supposed by mathematical physics or can be discovered by experiment, but the producer of first philosophy has nothing to contribute beyond the assurances that causal chains are endless and are never independent of each other.³⁵ But these assurances are of huge importance, licensing, as they do, the continuing pursuit of knowledge and blocking the possibility of more than one causally closed system.

In fact, this is one way of seeing the point of the metaphysical apparatus in part I of the *Ethics*. Things and events cause other things or events, but we need to be sure that chains or networks of causality are not separable. If they were, scope would be left for supernatural or magical causality, and comprehensive science would be impossible. Causal chains are not infinite because they are big (or even "total"), but because they constitute one way of seeing infinite nature (together, as "infinite modes"). Nature is understandable as cause or substance, *natura naturans*, or as effects or modes, *naturata*. The stipulation that nature is "cause of itself" is an assurance that no external, detached cause can be found: the only causes that need to concern us are causes within nature.

Maybe this gives an answer about the objects in Spinoza's system: Finite modes are things and events (corporeally and mentally). They make up infinite modes: nature, understood one way. The same infinite nature, understood another way, is indivisible ("substance").

But what about the nature of the relationships between Spinoza's objects? Can it be enough just to bundle these relationships together without further explanation, as "causality" (with its cognates, as where *a causes b* means that *b is conceived through a, knowledge of b involves knowledge of a, b exists in a*)?

How can we avoid a logical perspective when we read, "From [the] necessity of [the] divine nature there must follow infinite things in infinite ways . . ." and then that, as an immediate corollary, "[It] follows that God is the efficient cause of all things . . ."?³⁶ That looks like the most overt identification of the causal relation with "following." And since Spinoza frequently uses "following" in the sense of an inference from one proposition to another in his own system (as in *Hinc sequitur . . .*, in

the text just cited), how could it be denied that he absorbs causality into logic, and that the basic relations in his system are therefore logical relations?

In some ways there is no need to deny an identification between causality and logic in his work, though in other ways this can be extremely misleading. Misleading, for a start, if it is taken to suggest that we are satisfied that we know what logic is (and therefore that to equate causality with logic is to explain the opaque in terms of the clear). Misleading, too, if we imagine that there exist metaphysically neutral instruments such as “logical possibility” which can be used to excise Spinoza’s naive logical errors: *a causes b*, but “we” “can” conceive *b* without *a* so *b* cannot follow logically from *a*! Especially misleading if we imagine that Spinoza himself thought in “logical” terms. Catastrophically misleading if we think that the supposed force of logic provides any kind of explanation or support for the alleged force of natural laws.³⁷ Misleading and quite baffling if we assume that Spinoza really worked in logical terms and then conclude that, unfortunately, he was not too good at logic.³⁸

Try for a moment to take seriously the idea that Spinoza *was* “really” thinking in terms of what we might prefer to call logic. Then *a causes b* might be understood as *a necessarily causes (or necessitates) b*, which is understood as *it is necessary that a causes b* or *it is necessarily true that a causes b* or even *the proposition that a causes b is necessarily true*. But wait: we forget that *a* and *b* themselves may be “necessary states of affairs.”³⁹ So we need a still more florid formulation! How about this one— call it D:

D: The proposition that (the proposition that state of affairs b exists is necessarily true follows from the proposition that state of affairs a exists is necessarily true) is necessarily true.

If that does not quite constitute a *reductio ad absurdum* in itself, there is the awkward problem that a necessary truth follows from any truth in most standard modal logics. Hence, along these lines, we arrive at Spinoza’s lamentable incompetence in logic or the intriguing thought that “follows from” might be read in terms of non-standard relevance logics.⁴⁰

But, putting aside these hazards of modal logic, how plausible is the “logical” formulation, D? Here are four points:

First, it introduces a certain amount of ontology of a kind to be found nowhere in Spinoza’s thinking. There is the *important* existence of propositions (or sentences or statements: the distinction does not matter here) as bearers of truth and modality. Spinoza defined *necessity* unequivocally in terms of *things*, and it is hard to see where, ontologically, he could have found room for the existence of logical objects that operated with such crucial force.

Second, there is the difficulty of explaining or analysing the unclear in terms of the more unclear. D is not just incomparably more obscure than *a causes b*— that in itself might be forgivable. The trouble is that the worrying element, if there is one, in *a causes b*, becomes more, not less, worrying in D. Why, for example, do we have the “necessary truths” in D? What explains or justifies the necessary truths in D, something about the world, or about possible worlds, or about how things are, or how they must be? But that cannot be right, because then we would have turned to

logic to clarify states of affairs and then back to states of affairs to explain or justify logic. Why detour into logic in the first place? That was a drawback with Leibniz's possible worlds. An added drawback now is that our confidence that we understand the nature or force of logic must surely be weaker than in the optimistic 1950s hey-day of books with titles like *The Logic of Moral Discourse*.

Third, and independently, we have completely lost the transparency of Spinoza's thinking. To be necessary is to be caused: "A thing is said to be necessary . . . if it is determined by another thing to exist and to act in a definite and determinate way."⁴¹ So, to say that *b* is necessary is to say that *b* is determined by another thing, *a*. That gives the ratio for *b*. A formulation such as *D*—or, no doubt, a less baroque version along similar principles—looks like an answer to the wrong question. *If* we start off asking: Why does *a* cause *b*? or Why must *a* cause *b*? Spinoza furnishes us with two sorts of answers. One is that *b* is caused by *a* in that there is an endless series of causes and effects into which *a* and *b* fall. Then if we ask why *that* is, or must be, so, the answer has to be, in round terms, that nature is like that. (Technically: an infinite mode, consisting of an infinite series of finite causes and effects, may also be understood as infinite substance or nature, which has no external cause.) *D* contains a vicious spiral of modalities. Its form is,

The proposition that (the proposition that p₂ is necessarily true follows from the proposition that p₁ is necessarily true) is necessarily true

But then we can ask reasonably why *that* proposition is, or must be, true. Then we can either appeal to some facts about the world—about possible worlds—taking logic back to ontology, or we can bring in some higher level of modality, itself in need of explanation. For Spinoza, the answer to *Why must b be so?* is the same as the the answer to *Why is b so?* That is: *b is caused by a*.

One way of diagnosing the perplexity in this area is to point to a confusion between *de re* and *de dicto* logical forms. If we read *D* as

R: Necessarily (necessarily b follows from necessarily a)

this may be some improvement, because *R* does not lead to all the problems generated by *D*, though it does not remove the embarrassment that a necessity may be entailed by any other *de re* proposition. (And we are out of the frying pan and into the fire if a modal logician can convince us that *D* and *R* actually follow from each other.) A better understanding is gained by staying with Spinoza's thinking in terms of causes, as where *necessarily (b follows from a)* is the same as *b is determined by a*.

Fourth, there is a reasonable case that Spinoza thought of logical relations as causes between ideas, rather than the reverse. In his idealized scientific method, "one clear and distinct perception, or several taken together, can be absolutely cause of another clear and distinct perception."⁴² This is not at all obscure, but the consequences have not been much appreciated. Logic itself may be intelligible in terms of some mechanics of ideas, but it becomes useless as a terminal explanation.

Logic is therefore, at best, a distraction. To believe that Spinoza turns causality

into logic may have some point, but it produces so many difficulties that we might wonder whether it is useful after all. In terms of crude common sense, we can see why that might be so. If someone says, "My house burnt down because it was struck by lightning," we think, "Well, the lightning caused the fire," and we do not find this too complicated. If a philosopher asks the householder to consider whether or not the proposition that the house burnt down follows necessarily from the proposition that it was struck by lightning, the first reaction will be the right one: irritation at a wholly pointless level of pedantry in a wholly plain state of affairs.

There is also a historical dimension. Russell began the analytical practice of turning metaphysical issues into problems of logic. Not coincidentally, the first victim for this treatment—Leibniz—did provide some justification for it.⁴³ But Spinoza could not. For him, if logic mattered at all, it was only as an instrument, not as the foundation or skeleton of his system. In their *Development of Logic*, the Kneales note that "it was a question much debated in antiquity whether logic should be accounted a branch of philosophy, as the Stoics said, or merely a preliminary to philosophical studies, as the Peripatetics maintained."⁴⁴ So far as Spinoza could be said to have a preference, not surprisingly it would be the Stoic one: for *The Metaphysical Foundations of Logic over The Logical Basis of Metaphysics*.⁴⁵ The only reference to logic in the *Ethics*, in 5pref, was in a characteristically stoical, therapeutic context. Nearly a century after Russell's book on Leibniz, we are no nearer to agreement on the nature of logic, while metaphysical difficulties remain with us.

The real snag is not the kinship between causality and logic but the connection between causality and explanation, which seems obvious from the emphatic equivalence of *causa* and *ratio*. Also, there are cases where a cause is neither a physical nor a mental object or event and where its connection to its effect seems to be one of straightforward explanation. In fact, the very introduction of *causa, seu ratio* looks like that:

For every thing a cause or reason must be assigned either for its existence or for its non-existence. For example, if a triangle exists, there must be a reason, or cause, for its existence . . . But the reason for the existence or non-existence of a circle or a triangle does not follow from their nature, but from the order of universal corporeal Nature.⁴⁶

Spinoza seemed happy enough with perfectly normal-looking explanations. Why did a stone fall from a roof onto a man's head? Not because of any final causes. The acceptable explanations were simple in form:

[T]he event occurred because the wind was blowing and the man was walking that way. . . . [T]he wind sprang up at that time because on the previous day the sea had begun to toss after a period of calm and. . . . [T]he man had been invited by a friend.⁴⁷

Why was the man going that way? Because he had been invited by a friend: *Cur?* *Quòd*: a standard causal explanation.

This created difficulty for Spinoza. It might just seem plausible to make causes concrete, even in such wide terms as “from the order of universal corporeal Nature”—*ex ordine universae naturae corpore*—but how can explanations occur in that form? It was the blowing of the wind (and so on) that caused the falling of the stone, but do we not *explain* the falling of the stone by the fact that the wind blew (and so on)?

Here is the exact difficulty: Spinoza used a form of necessity that had nothing to do with necessary truth, one where “necessary” means “having a cause.” But it is hard to keep truth out of questions of explanation. (At the limit, for example, we can ask *why* some proposition is true, and then the truth of some other proposition (presumably) will have to be cited as the *causa, seu ratio*.) “The stone fell because the wind blew” is true. The stone did not fall off the roof because someone pushed it. “The stone fell because it was pushed” is false. And is this not necessary truth and necessary falsehood? So are we not back with logic again, as indeed we may be with the sort of examples favoured by Spinoza, from geometry:

from the nature of a triangle it follows from eternity to eternity that its three angles are equal to two right angles.⁴⁸

What can that mean except that one truth follows from another?

I can assemble a response to this line of thinking only in terms of Spinoza’s presumed preferences. We know that he started not from the truth of what might be said about nature but from nature. His view must have been that having three angles equal to two right angles followed from the nature of a triangle. Statements—theorems—about this must have seemed to him secondary to the reality of the geometry. And then he gave priority to a particular form of causal explanation:

We ought to define and explain things through their proximate causes.⁴⁹

His preference for concreteness and for the priority of proximate causes may have led him to his view that *causa* and *ratio* are the same: as if, on some basic level, it could be explained why things exist or happen by simply identifying and enunciating chains of causes. As noted earlier, his interest was solely in “the analysis of causality” rather than “the logical form of causal statements.” We can see some of the reasons for this, but we may feel less confident about whether this approach was successful. Problems about the modality of statements of explanation (or about the modal analysis of statements of natural laws) were not his problems, because for him *a exists necessarily* did not need to entail *it is necessarily true that a exists*: here, the two senses of necessity will be altogether different.

Spinoza offered no account of any difference in sense between *causa* and *ratio* which might help us and no account of the similarity in sense which we must understand from *causa, seu ratio* (and from his alternating use of the terms, for example in the passage quoted from the demonstration to 1p11). It seems natural to read his views, in modern terms, as at least a strong preference for particular causal explanations, or a wish to idealize all forms of explanation as a listing of causes. In

modern terms, it seems natural to point out that explanations are not, after all, causes. *Causes make things happen* while explanations *say* why they happen. *Making happen* and *saying* are different.

One modern way round this difference can look Spinozistic. We can try to argue that some (fundamental) forms of explanation are completely transparent, thus abolishing the gap between what happens and what may be said about it.⁵⁰ Or, alternatively, that *de re* statements are referentially transparent, allowing for lucid equivalence between explanation and causal necessity. But these perspectives are far from Spinoza's and we should hesitate to associate him with them. One possible reading is that *causa* and *ratio* will mean, along familiar lines, the same thing taken in different ways. Things happen and we understand how they happen (partly or fully). As we have seen, our knowledge of "the way in which things are in actual fact ordered and connected"⁵¹ may be defective in practice. Spinoza's account of knowledge provided a guarantee that "[t]he human mind has an adequate knowledge of the eternal and infinite essence of God." The Scholium to this assertion pursued the common seventeenth-century theme of the misleadingness of language in comparison with solid reality.⁵² For Spinoza, when nature was transparently understood, knowing a *ratio* was the same as knowing a *causa*. The preferred form of understanding was through (correct) knowledge of proximate causes. His theory of knowledge is not the subject here, but we should be able to see that the equivalence of *causa* with *ratio* was one concrete aspect or corollary of his view that nature is intelligible—that we could not fail to understand it. *Causa* is a metaphysical, ontological notion and *ratio* is an unavoidably epistemological one. His view must be that these two cannot be separated. Explanations will be attainable in the same sense as causes exist.

This subject is important as far as a philosophical grounding of physics may be important. In broad terms, if first philosophy or metaphysics consists of general truths linked by logic and if physics consists of truths about things linked by relationships such as causality, then there must be a gap between metaphysics and physics which could be hard to bridge. The case argued in this paper has been that for Spinoza there was no such gap. The objects or contents of first philosophy—nature—were the same as the objects or contents of physics (not *nothing but*, reductively, but *the same*). The causality linking these objects was no different from the causality linking ordinary objects and events.

Notes

1. 1d2: "Ea res dicitur in suo genere finita, quae alia ejusdem naturae terminari potest." The texts are from G. The following English versions have been used: The *Ethics* and TdIE: Spinoza (1992); TTP: Spinoza (1998); Correspondence: Spinoza (1995).

2. 1p26–28.

3. Curley (1991, 48).

4. "Physics" here and later is short for the corporeal and the mental, following Gueroult (1968, 336), as in "causes physiques (psychiques ou corporelles, selon l'attribut considéré)."

5. God is a thinking and extended thing—*Deus est res cogitans Deus est res extensa* (2p1, p2). The translation of *res* must be difficult. It should not suggest physical material.

6. 2a1.
7. 1app, for example.
8. *Praeter substantias, & modos nil datur*: 1p15d.
9. As implied by Curley (1988, 39–50).
10. The “concreteness” of logic was a theme of Harold Joachim (1948, 10–27). That technical, idealistic sense is not intended here. Gueroult (1968, 64) wrote more pertinently of “*la vraie logique, fondée sur les choses (substances et modes)*.”
11. Especially the passage on the series of “fixed and eternal things,” §§100–101 of TdIE.
12. For instance, in the 1p28s, which shows signs of reworking and remains open to significantly different readings.
13. 2p13s—*pauca de natura corporum*—a curiously offhand phrase. Can we read into it some wish to avoid anything specific about the status of the “few things”? Truths, postulates, suppositions? Adler (1996) is a full study.
14. Specifically, not Curley (1988, 48–50).
15. Spinoza (1995, 218, Ep 40, to Jelles).
16. *Ibid.* (192, Ep 32, to Oldenburg). Spinoza’s use of *parts* here must have been informal or careless.
17. 1d7.
18. 2p7s.
19. TTP IV, 50.
20. Spinoza (1995, 102, Ep 12, to Meyer).
21. Davidson (1982, p. 161). Davidson might raise questions about the individuation of events—*rerum operandum*—but Spinoza would not be alone among philosophers in considering that a problem.
22. 2p47 and 2p47c.
23. 2p45s.
24. TTP IV, 54–56, 49, G III, 57.
25. Spinoza (1995, 352).
26. Nor indeed “material,” as concluded in Jarrett (1977).
27. 1p15s: “*substantia corporea, quatenus substantia, constat . . . partibus; & ideo eandem infinitam posse esse, & consequenter, ad Deum pertinere posse, negant.*” The identical proviso, with identical force, is found at 1p13c: “[N]o substance, and consequently no corporeal substance, insofar as it is substance, is divisible.”
28. Spinoza (1995, 106, 101, Ep 12, to Meyer).
29. There are mediate and immediate infinite modes, in the terminology of most commentators, but the distinction does not matter here, important though it might be in other ways.
30. Spinoza (1995, 353, Ep 82, to Tschirnhaus).
31. *Principles of Philosophy* II, 1.
32. McTaggart (1921, 41).
33. Kant (1996, A715=B743).
34. TTP VII, 93. See Mason (1996).
35. Strictly: under each attribute, since **physical causal chains mirror, but do not connect to, mental causal chains.**
36. 1p16 and 1p16c.
37. “[The] laws of nature not only describe how particulars behave but *make* them behave in these ways, although the type of causality they exercise is logical rather than mechanical” (Yovel [1991, 93]).
38. Bennett (1984, 124).
39. Garrett (1991, 194). (This selective reference is unfair to Garrett’s wider view.)

40. Ibid.
41. 1d7.
42. Spinoza (1995, 211, Ep 37, to Bouwmeester). Ideas cause each other as in 2p9, a special case of 1p28.
43. Russell (1900).
44. Kneale and Kneale (1962, 737).
45. The titles are by Heidegger (1984) and Dummett (1991).
46. 1p11d2.
47. 1App.
48. 1p17s.
49. TTP IV, 49.
50. See Ruben (1990, 160–68) for a review of recent arguments.
51. TTP IV, 50.
52. 1p47.

Colofon

Richard Mason, "Concrete Logic," in: Olli Koistinen and John Biro (Eds.), *Spinoza: Metaphysical Themes*. Oxford University Press, 2002, p. 73 t/m 88