
The Philosophical Quarterly

FINKISH DISPOSITIONS

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I. THE CONDITIONAL ANALYSIS REFUTED

The analysis stated

All of us used to think, and many of us still think, that statements about how a thing is disposed to respond to stimuli can be analysed straightforwardly in terms of counterfactual conditionals. A fragile thing is one that would break if struck; an irascible man is one who would become angry if provoked; and so on. In general, we can state the *simple conditional analysis* thus:

Something x is disposed at time t to give response r to stimulus s iff, if x were to undergo stimulus s at time t , x would give response r .

Simple indeed – but false. The simple conditional analysis has been decisively refuted by C.B. Martin. The refutation has long been a matter of folklore – I myself learned of it from Ian Hunt in 1971 – but now it has belatedly appeared in print.¹

How a disposition can be finkish

Dispositions come and go, and we can cause them to come and go. Glass-blowers learn to anneal a newly made joint so as to make it less fragile. Annoyances can make a man irascible; peace and quiet can soothe him again.

¹ C.B. Martin, 'Dispositions and Conditionals', *The Philosophical Quarterly*, 44 (1994), pp. 1–8. See also R.K. Shope, 'The Conditional Fallacy in Contemporary Philosophy', *Journal of Philosophy*, 75 (1978), pp. 397–413; M. Johnston, 'How to Speak of the Colors', *Philosophical Studies*, 68 (1992), pp. 221–63.

Anything can cause anything; so stimulus s itself might chance to be the very thing that would cause the disposition to give response r to stimulus s to go away. If it went away quickly enough, it would not be manifested. In this way it could be false that if x were to undergo s , x would give response r . And yet, so long as s does not come along, x retains its disposition. Such a disposition, which would straight away vanish if put to the test, is called *finkish*. A finkishly fragile thing is fragile, sure enough, so long as it is not struck. But if it were struck, it would straight away cease to be fragile, and it would not break.

Any finkish disposition is a counter-example to the simple conditional analysis. The thing is disposed to give response r to stimulus s ; it is not true that if it were to undergo s , it would give response r . The *analysandum* is true, the alleged *analysans* is false.

How a lack of a disposition can be finkish

Suppose instead that we have something that is not yet disposed to give r in response to s . It might gain that disposition; and s itself might be the very thing that would cause it to gain that disposition. If the disposition were gained quickly enough, while s was still present, it would at once be manifested. So the counterfactual *analysans* is true: if the thing were to undergo s , it would give response r . And yet, so long as s does not come along, the dispositional *analysandum* is false: the thing has not yet gained the disposition to give response r to s . This time, it is the lack of the disposition that is finkish, but again we have a counter-example to the simple conditional analysis.

Dispositions with finkish partners

Dispositions, as Martin has often emphasized, can come in pairs: x is disposed to respond to the presence of y , and y is disposed to respond to the presence of x , by a response r given jointly by x and y together.² In a nice case, where the simple conditional analysis works, we can express this by a counterfactual: if x and y were to come into one another's presence, they would jointly give response r .

(Or, more generally: if x and y were to enter into such and such a relationship.... But let us stick to the case where the relationship is a matter of proximity.)

For example, I and a certain disc are so disposed that if I and it came together, it would cause in me a sensation of yellow. We could say that it is

² See, e.g., C.B. Martin, 'How It Is: Entities, Absences and Voids', *Australasian Journal of Philosophy*, 74 (1996), pp. 62ff.

disposed to influence me; or that I am disposed to respond to it. Or both. Or we could say that the two-part system consisting of me and the disc is disposed to respond to the coming together of its parts. In the nice case, where the simple conditional analysis works, it does not matter which we say.

But in a finkish case, perhaps the coming together of me and the disc would alter my dispositions, or the disc's dispositions, or both, so that if I and it came together, there would be no sensation of yellow. The disposition of the two-part system to respond to the coming together of its parts is finkish in just the way we have already considered.

Nothing new yet. But suppose we want to speak not only about the dispositions of the two-part system but also about the dispositions of the two parts, of me and of the disc. It might be that the coming together would alter my dispositions, but would have no effect on the disc's dispositions. Then my disposition to respond to the disc would be finkish, but the disc's disposition to influence me would not be.

Yet if the disc's disposition is not finkish (that is, if it is not itself a counter-example to the simple conditional analysis) why would it not be manifested? Because it is a disposition to influence me-as-I-would-be-if-I-had-not-lost-my-own-finkish-disposition; and that is not how I would be if I and the disc came together. Because of the finkishness of my disposition, the unfinkish disposition of the disc can have no occasion to be manifested.

Saul Kripke has imagined a special shade of yellow, 'killer yellow', which, thanks to some quirk of our neural wiring, would instantly kill anyone who set eyes on it.³ If what I have just said is right, then, whatever else may fairly be said against a dispositional theory of colours, the case of killer yellow does not suffice as a refutation.

Resisting the refutation: a dilemma about timing?

Philosophers being what they are, not everyone will find Martin's refutation of the simple conditional analysis immediately convincing.

One line of resistance begins with a dilemma about timing. A thing might have a finkish disposition to give response r to stimulus s . Since the disposition is finkish, s would cause it to go away. But would it go away instantly?

If no, there would be a little time after the advent of s and before the disposition goes away. During this little time, before the disposition goes away, we would have s and we would still have the disposition. Then would we not have r after all? Then is not the conditional *analysans* true despite the finkishness of the disposition?

³ The example occurs in unpublished lectures. Kripke asks me to note that I am not reporting the whole of what he said in those lectures.

If yes, on the other hand, the case seems to involve a kind of instantaneous causation that is contrary to the normal ways of the world. The resister may protest with some justice that the case is fantastic, that we are not entitled to firm linguistic intuitions about such far-fetched cases, and accordingly that the case is not a convincing refutation.

We might reply by proposing a case in which the disposition would be gone by the time s arrived, but not by means of instantaneous causation. Rather, the finkishly disposed thing would somehow see s coming. Some precursor of s would cause both s and the loss of the disposition.

But then the resister can insist that the counterfactual *analysans*, if properly interpreted, is true after all. If we counterfactually suppose that s happens at time t , and we hold fixed the actual course of events before t , our supposition does not include s 's precursor. Then neither does it include any side-effects of s 's precursor, such as the loss of the disposition. Under the supposition of s without s 's precursor, r would have followed. It is a familiar point that backtracking counterfactual reasoning, which runs from a counterfactually supposed event to the causal antecedents it would have to have had, is sometimes out of place. The resister need only insist that the counterfactuals whereby we analyse dispositions must not be backtrackers.⁴

Our best hope for an uncontroversial case of a finkish disposition (though I myself also accept the controversial cases that work by instantaneous causation) will be to return to the first horn of the resister's dilemma. That means that s would arrive at least a short time before the disposition went away. Does it really follow that we would have r ? Not necessarily. Sometimes it takes some time for a disposition to do its work. When stimulus s arrives and the disposition is present, some process begins. (It might be a process of accumulation: of charge, of neurotransmitter, of tiny cracks, of vexation, etc.) When the process reaches completion, then that is, or that causes, response r . But if the disposition went away part-way through, the process would be aborted. In such a case, the disposition to produce r can be finkish, without any need either for instantaneous causation or for backtracking. (However, the disposition to begin the process is not finkish.) So the resister's dilemma about timing is answered, and the refutation of the simple conditional analysis is unscathed.

Martin's principal example in 'Dispositions and Conditionals' is an 'electro-fink': a machine connected to a wire that makes the wire instantly become live if touched by a conductor; or, if operating on a 'reverse cycle', makes the wire instantly cease to be live if touched by a conductor. It is instructive to see how to amend this example so that it withstands the

⁴ See my 'Counterfactual Dependence and Time's Arrow', *Noûs*, 13 (1979), pp. 455–76.

resister's misgivings. (a) We remove Martin's stipulation that the electro-fink reacts instantaneously. Quickly is good enough. Then the electro-fink on a reverse cycle need not be anything more remarkable than a (sensitive and fast-acting) circuit-breaker. (b) We respecify the effect to which the wire is finkishly disposed not as any flow of electrical current but as flow of a certain wattage for a certain duration – as it might be, enough for electrocution. This is a process that can be aborted by breaking the circuit part-way through.

Resisting the refutation: a compound disposition?

A different line of resistance suggests that if something is finkishly disposed to give response r to stimulus s , what it really has is a compound disposition. It has a state that at least resembles a disposition to give response r to s . Our resister, since he accepts the simple conditional analysis, will think it inaccurate to call this state a disposition. (I shall signal his terminological scruples with inverted commas.) At any rate, this first 'disposition' is embedded in a second disposition. The thing is disposed to lose the first 'disposition' in response to s .

Now the resister is struck by the difference between the first 'disposition' all by itself and the first 'disposition' when it is embedded in the second. He implores us not to be over-impressed by such similarities as there are, and instead to heed the difference the second disposition makes to the overall dispositional character of the thing. When we say that the thing is disposed to give r in response to s , he thinks we are misled by thinking of the first 'disposition' in abstraction from the second.

Well, that may be so, or it may not, in the sort of case the resister has in mind. (I myself think it is not so.) Be that as it may, there is a different sort of case. It may be that the thing would lose the first 'disposition' in response to s , but *not* because of any second disposition of that thing; rather because of something wholly extrinsic.

A sorcerer takes a liking to a fragile glass, one that is a perfect intrinsic duplicate of all the other fragile glasses off the same production line. He does nothing at all to change the dispositional character of his glass. He only watches and waits, resolved that if ever his glass is struck, then, quick as a flash, he will cast a spell that changes the glass, renders it no longer fragile, and thereby aborts the process of breaking. So his finkishly fragile glass would not break if struck – but no thanks to any protective disposition of the glass itself. Thanks, instead, to a disposition of the sorcerer.

I have replied to the resister by wielding an assumption that dispositions are an intrinsic matter. (Except perhaps in so far as they depend on the laws

of nature. I myself would wish to insist on that exception, but this is a controversial matter that need not be considered now.) That is: if two things (actual or merely possible) are exact intrinsic duplicates (and if they are subject to the same laws of nature) then they are disposed alike. I have used this premise twice over. Suppose the sorcerer's protected glass and another, unprotected, glass off the same production line are intrinsic duplicates (and both subject to the actual laws of nature). Then they are disposed alike. Certainly the unprotected glass is disposed to break if struck; therefore so is the sorcerer's glass. Certainly the unprotected glass is not disposed to lose its fragility if struck; therefore neither is the sorcerer's glass.

I do not deny that the simple conditional analysis enjoys some plausibility. But so does the principle that dispositions are an intrinsic matter. The case of the sorcerer sets up a tug-of-war between conflicting attractions, and to me it seems clear that the simple conditional analysis has the weaker pull.

At least in such cases, Martin's refutation succeeds. I myself think it succeeds in other cases as well. But to refute an analysis, one counter-example is all we need.

Whither?

Once we scrap the simple conditional analysis, what should we say about dispositions? Martin's own response is radical: a theory of irreducible dispositionality. Properties are Janus-faced: each of them has, inseparably, a qualitative (or 'categorical') and a dispositional aspect. Since dispositionality is irreducible, it is not to be explained in terms of the causal and nomological roles of properties, but rather *vice versa*.⁵

Those who are disappointed with the usual menu of theories of lawhood and causation might do well to try out this new approach. But those of us whose inclinations are more Fabian than revolutionary, and who still back one or another of the usual approaches to lawhood and causation, may well suspect that Martin has over-reacted. If what we want is not a new theory of everything, but only a new analysis of dispositions that gets right what the simple conditional analysis got wrong, the thing to try first is a not-quite-so-simple conditional analysis. Rather than starting with irreducible dispositionality, as Martin does, we shall start with fairly widely shared ideas about properties, causation, lawhood and counterfactuals; and on this foundation we shall hope to build a reformed conditional analysis of dispositions.

⁵ See Martin, 'How It Is: Entities, Absences and Voids' pp. 62ff.; also his 'Power for Realists', in J. Bacon, K. Campbell and L. Reinhardt (eds), *Ontology, Causality and Mind* (Cambridge UP, 1993), and elsewhere.

II. A REFORMED CONDITIONAL ANALYSIS

Causal bases

Suppose that a certain glass is (non-finkishly) fragile; and it is struck; and so it breaks. The breaking presumably was caused; and caused jointly by the striking and by some property *B* of the glass. We call this property *B*, a property which would join with striking to cause breaking, a *causal basis* for the fragility of the glass.

Three comments. (a) Different fragile things may have different causal bases for their fragility. (b) Strictly speaking, it is the having of the property that does the causing: a particular event, or perhaps a state of affairs. To speak of the property itself as a cause is elliptical. (c) What causes what depends on the laws of nature. If lawhood is a contingent matter, as many but not all of us think it is, then it is also a contingent matter which properties can and which cannot serve as causal bases for fragility.

Prior, Pargetter and Jackson have argued convincingly for the thesis that all dispositions must have causal bases.⁶ Let us assume this. Or at any rate, let us agree to set aside baseless dispositions, if such there be. Our goal, for now, is a reformed conditional analysis of based dispositions – including finkish ones.

(Prior *et al.* argue from a simple conditional analysis of dispositions. But that flaw in their argument is not a serious one. Though wrong as an analysis, the simple conditional analysis remains true as a rough and ready generalization: fragile things that are struck do for the most part break, and those that are unstruck would for the most part break if they were struck. So, despite the possibility of finkish fragility, still for the most part we must posit causes for the breakings that fragile things do or would undergo.)

A finkish disposition is a disposition with a finkish base. The finkishly fragile glass has a property *B* that would join with striking to cause breaking; and yet the glass would not break if struck. Because if the glass were struck, straight away it would lose the property *B*. And it would lose *B* soon enough to abort the process of breaking.

⁶ E.W. Prior, R. Pargetter and F. Jackson, 'Three Theses about Dispositions', *American Philosophical Quarterly*, 19 (1982), pp. 251–3. Earlier discussions of dispositions and their causal bases include W.V. Quine, *Word and Object* (MIT Press, 1960), pp. 222–6; D.M. Armstrong, *A Materialist Theory of the Mind* (London: Routledge & Kegan Paul, 1968), pp. 85–8, and *Belief, Truth and Knowledge* (Cambridge UP, 1973), pp. 11–16; J.L. Mackie, *Truth, Probability, and Paradox* (Oxford UP, 1973), pp. 129–48, and 'Dispositions, Grounds, and Causes', *Synthese*, 34 (1977), pp. 361–70.

Then is it true to say, as I did, that B ‘would join with striking to cause breaking’? Yes and no. What I meant, when I said that, was that if the glass were struck and retained B , then B together with the striking would cause breaking. That much is true. And yet it is also true that if the glass were struck it would not retain B . Thus the possibility of finkishness rests on a logical peculiarity of counterfactuals: their ‘variable strictness’.⁷ It can happen that two counterfactuals

If it were that p , it would be that not- q
 If it were that p and q , it would be that r

are true together, and that the truth of the second is not merely vacuous truth. Because the first counterfactual is true, the supposition that p and q is more far-fetched, more ‘remote from actuality’, than the supposition just that p . But we are not forbidden to entertain a supposition merely because it is comparatively far-fetched. Variable strictness means that some entertainable suppositions are more far-fetched than others.

The finkish lack of a disposition works in a parallel way. The glass has no causal basis for fragility, therefore it is not fragile. Yet it would break if struck. Because, if it were struck, it would straight away gain some property B that would serve as a causal basis for fragility. And B would arrive in time (though maybe only just in time) to join with the striking to cause the glass to break.

(But will not the striking be over and done with by the time B arrives? Not necessarily. And even if it is, B could join with after-effects of the striking to cause the breaking. Then the striking would still be a cause of the breaking via a causal chain passing through the after-effects.)

Once we appreciate that finkishness pertains, in the first instance, to particular causal bases and to lacks of particular causal bases, we are in a position to describe a variety of finkishness that has so far escaped our notice. Suppose that B_1 and B_2 are two alternative causal bases for fragility. As it actually is, the glass has B_1 and lacks B_2 . But if it were struck, it would undergo a swap: straight away it would lose the property B_1 and gain the property B_2 . It finkishly has one basis for fragility and it finkishly lacks another. Yet it is not finkishly fragile, at least not in the sense of being a counter-example to the simple conditional analysis. It is fragile thanks to the basis B_1 . If struck, it would be fragile thanks instead to the substitute basis B_2 . If struck, therefore, it would break. But its breaking if struck would not be a manifestation of the fragility it has when not struck, because if it were struck it would come to be fragile in a different way.

⁷ R. Stalnaker, ‘A Theory of Conditionals’, in N. Rescher (ed.), *Studies in Logical Theory* (Oxford: Basil Blackwell, 1968); D. Lewis, *Counterfactuals* (Oxford: Basil Blackwell, 1973).

We need to add something to our characterization of finkish fragility, so as to distinguish it from the different situation just considered. As follows: the finkishly fragile glass has a property *B* that would join with striking to cause breaking, yet the glass would not break if struck. Because if it were struck, it would lose *B*, and it would not gain any substitute basis for fragility.

Towards an analysis: beginning

Once we have accepted the thesis that all dispositions must have causal bases, it is an easy step to conjoin the converse thesis and to say, for instance, that something is fragile if and only if it has some causal basis for fragility. That biconditional, generalized and spelt out, will be our reformed analysis of dispositions. In saying what it means for a property to be a causal basis for fragility, or whatever, we shall need a counterfactual conditional. But the conditional part of our reformed analysis will come at the end. Before that, we need a beginning and a middle.

The beginning of any analysis is an *analysandum*. Ours will be as follows:

Something *x* is disposed at time *t* to give response *r* to stimulus *s* iff ...

The noteworthy thing about our *analysandum* is what it is *not*. Our plan is to answer one question without getting entangled in another. The question we want to answer is ‘What is it to *have* such and such a disposition (as it might be, the disposition to break if struck)?’. The question we want to leave unsettled is ‘What *is* a disposition?’.

Once we accept that a disposition must have a causal basis, we might choose to say, as Armstrong has done, that the disposition *is* its causal basis. That choice has the advantage of delivering a straightforward account of the role of dispositions in causal explanation: the fragility of the glass, along with the striking, are the causes that jointly cause the breaking. On the other hand, that choice has the drawback that what we would offhand think was *one* disposition, fragility, turns out to be different properties in different possible cases – and, very likely, in different actual cases.⁸

Or we might instead choose to say, as Prior and her allies have done, that the disposition is the second-order property of having some suitable causal basis or other.⁹ That way, fragility is indeed a single property common to all fragile things, actual or merely possible. However, the drawback of this choice is that if fragility is the second-order property, it is far from clear how it plays a role in causal explanation. When the struck glass breaks, do we

⁸ Armstrong, *Belief, Truth and Knowledge* pp. 14–16.

⁹ ‘Three Theses about Dispositions’ pp. 253–6; E. Prior, *Dispositions* (Aberdeen UP, 1985), pp. 82–95.

want to say that the breaking is caused *both* by the second-order property which is the fragility *and* by whatever first-order property is the causal basis for the fragility in that particular case? It is not a case of overdetermination, after all! But neither should we want to say, as Prior *et al.* do, that fragility is causally impotent.

If forced to choose, I would side with Prior against Armstrong; and I would dodge the overdetermination-or-impotence issue by appeal to some fancy and contentious metaphysics. (Thus. Let us speak of the *relata* of the causal relation as ‘events’, whether or not that is altogether appropriate as a matter of ordinary language. Sometimes an event, in this sense, is a having of a certain property by a certain thing.¹⁰ Now we can say that just one event joins with the striking to cause the breaking, so there is no overdetermination. This one event is a having of the causal basis. But also, perhaps in a different sense, this same event is a having of the second-order property. Two different properties are had in the same single event. So the second-order property is not impotent.) This may work, but it is complicated and contentious and best avoided for as long as possible. Our choice of an *analysandum* is meant to allow us to remain neutral in the disagreement between Armstrong and Prior. When a glass is fragile, it has two properties. It has some first-order property which is a causal basis for fragility; it also has the second-order property of having some causal basis for fragility or other. We need not say which of these two properties of the glass is its fragility.¹¹

If we remain neutral in the disagreement between Armstrong and Prior, not only do we refuse to say which properties are dispositional; equally, we refuse to say which properties are *non*-dispositional, or ‘categorical’. So we would be unwise to speak, as many do, of ‘categorical bases’. Because if we then saw fit to go Armstrong’s way, and to identify the disposition itself with its causal basis (in a particular case), we would end up claiming to identify dispositional with non-dispositional properties, and claiming that dispositions are their own categorical bases! Rather than risk such confusion, we do better to eschew the alleged distinction between dispositional and ‘categorical’ properties altogether.

Our chosen *analysandum* has another advantage: generality. Suppose instead that we had taken some particular example of a dispositional concept: the concept of a poison, say, or the concept of fragility or the concept of a lethal virus. A dispositional concept is the concept of being disposed to give

¹⁰ For details, see my ‘Events’, in D. Lewis, *Philosophical Papers*, Vol. II (Oxford UP, 1986).

¹¹ S. Mumford, in ‘Conditionals, Functional Essences and Martin on Dispositions’, *The Philosophical Quarterly*, 46 (1996), pp. 86–92, gives a reply to Martin which agrees to a considerable extent with mine, but which is built upon an answer to the very question that I have taken care to bypass, namely, the question of what dispositions are.

such and such response to such and such stimulus. So the first problem we face in analysing any particular dispositional concept, before we can turn to the more general questions that our particular example was meant to illustrate, is the problem of specifying the stimulus and the response correctly.

We might offhand define a poison as a substance that is disposed to cause death if ingested. But that is rough: the specifications both of the response and of the stimulus stand in need of various corrections. To take just one of the latter corrections: we should really say 'if ingested without its antidote'. Yet the need for this correction to the analysis of 'poison' teaches no lesson about the analysis of dispositionality in general.

(Some, for instance Johnston,¹² might doubt the need for the correction. They say that a disposition may be masked by something that prevents the response even when both the stimulus and the causal basis are present; in this way, we get failures of the conditional analysis even when the causal basis is not finkish. One who is prepared to speak of masking might stay with the simple definition of a poison as a substance disposed to cause death if ingested, but might say as well that the disposition of poisons to kill is masked by antidotes. Perhaps we have no substantive issue here, but only a difference between styles of book-keeping. But if so, I think the masker's style is less advantageous than it may seem. For even if we say that the poison has the disposition spelt out in the simple definition, and we say as well that this disposition is masked by antidotes, do we not still want to say that the poison has the further disposition spelt out in the complicated corrected definition?)

Or, to take fragility: we have said so far, and we shall go on saying, when greater precision is not required, that being fragile means being disposed to break if struck. But what of this story (due, near enough, to Daniel Nolan)? When a styrofoam dish is struck, it makes a distinctive sound. When the Hater of Styrofoam hears this sound, he comes and tears the dish apart by brute force. So, when the Hater is within earshot, styrofoam dishes are disposed to end up broken if struck. However, there is a certain direct and standard process whereby fragile things most often (actually, nowadays, and hereabouts) break when struck, and the styrofoam dishes in the story are not at all disposed to undergo that process.¹³ Are they fragile? To say so would be at best a misleading truth, and at worst an outright falsehood; and I have no idea which. However, my purpose in raising this question was *not* to answer it, but rather to insist that it is merely the question of which response-specification is built into the particular dispositional concept of fragility. Once again, it affords no lesson about dispositionality in general.

¹² 'How to Speak of the Colors' p. 233.

¹³ Cf. A.D. Smith, 'Dispositional Properties', *Mind*, 86 (1977), p. 444.

To show this, I turn to a case that goes differently. A certain virus is disposed to cause those who become infected with it to end up dead before their time, but *not* to undergo the direct and standard process whereby lethal viruses mostly kill their victims. For this virus does not itself interfere with any of the processes that constitute life. Rather, it interferes with the victim's defences against *other* pathogens – whereupon those other pathogens, like the Hater of Styrofoam, do the dirty work. Do we call this a lethal virus? Of course we do. After all, my story of the virus is not just another philosophical fantasy! It is the true story of HIV, slightly simplified.

We should not think, therefore, that dispositional concepts generally have built-in response-specifications requiring a direct and standard process. The concept of fragility does. (Though whether it is built in as a matter of truth-conditions or as a matter of implicature remains unclear.) The concept of a lethal virus does not.

Towards an analysis: middle

We begin our *analyses* with a restricted existential quantifier over properties:

iff, for some suitable property B that x has at t ...

'Suitable', of course, is a mere place-holder. We want to restrict the quantification to properties that can serve as causal bases for a disposition.

We need to require that B is a property (a having of) which can cause something. But we shall provide for this later, in the conditional part of the analysis: we shall say counterfactually what B would cause. So it is unnecessary to add a requirement of causal potency at this point as well.

Some would deny that negative properties, such as the absence of force or fear or food, can do any causing. Should we then impose a restriction that properties suitable as causal bases for dispositions must be entirely positive (whatever that means)? No. For everyone agrees that negative properties make some sort of difference to what happens, and the difference they make is causal. Martin puts the point thus: 'Absences and voids are causally *relevant* but not causally *operative*'.¹⁴ I myself would draw no such distinction between 'causation' and 'causal relevance'. But if others can make good on this supposed distinction, let them by all means help themselves to it. Anyhow, call it what you will, what matters is that we must not omit the causal difference-making of negative properties from the causal roles of bases for dispositions. Therefore we want no restriction to positive properties.

¹⁴ 'How It Is: Entities, Absences and Voids' p. 64.

What we do need to require is that B is an intrinsic property of x . Earlier, we considered and accepted a principle that dispositions are an intrinsic matter. If causal bases could be extrinsic then it could happen, contrary to that principle, that two intrinsic duplicates (subject to the same laws of nature) were differently disposed, because of some difference in their extrinsic causal bases.

We illustrated the principle that dispositions are an intrinsic matter by the case of the sorcerer and his protected glass. But to illustrate the principle further, and to placate those who will not be convinced by fantastic examples, I offer the case of Willie. Willie is a dangerous man to mess with. Why so? Willie is a weakling and a pacifist. But Willie has a big brother – a very big brother – who is neither a weakling nor a pacifist. Willie has the extrinsic property of being protected by such a brother; and it is Willie's having this extrinsic property that would cause anyone who messed about with Willie to come to grief. If we allowed extrinsic properties to serve as causal bases of dispositions, we would have to say that Willie's *own* disposition makes him a dangerous man to mess about with. But we very much do not want to say that. We want to say instead that the disposition that protects Willie is a disposition of Willie's brother. And the reason why is that the disposition's causal basis is an intrinsic property of Willie's brother.

If we insist that dispositions must have intrinsic causal bases, we run a risk of surprises. It just might turn out, for example, that electrons are not after all disposed to repel one another. Because it just might turn out that negative charge, the causal basis of the repulsion, was an extrinsic property involving the state of the surrounding aether. How bad would that be? Not so bad, I think, that we ought to buy immunity from such surprises at the cost of saying the wrong thing about dangerous Willie.

Towards an analysis: end

Now at last we reach the conditional part of our reformed conditional analysis, the counterfactual which says that property B is a causal basis for x 's disposition to give response r to stimulus s . We shall proceed by successive approximations; asterisks will mark attempts due for subsequent rejection.

Even if B is finkish and would go away in response to s , the counterfactual supposition we want to consider is that s arrives and B nevertheless remains. How long? Long enough to finish the job of causing r , however long that job may take.

- * ... for some time t' after t , if x were to undergo stimulus s at time t and retain property B until t' , x would give response r .

The quantificational prefix and the antecedent are now in final form, but the consequent still will not do.

For all that the *analysans* in its present form tells us, x might finkishly lack fragility: it might be that x would break if struck, but no thanks to any disposition that x already had when unstruck. Yet our quantified counterfactual might come out true. B might be some property entirely unconnected with the breaking: x 's colour, say. Or B might be connected in the wrong way with the breaking: logically instead of causally. For instance, B might be the property of either being unstruck or breaking (provided we understand the first disjunct as well as the second in a way that makes it intrinsic). To exclude such inappropriate choices of B , we amend the consequent:

* ... s and x 's having of B would jointly cause x to give response r .

(In case we have chosen to circumvent the alleged impotence of the second-order property in the way considered earlier, we had better say that ' x 's having of B ' here is to be understood in the sense in which an event is a having of the causal basis, not the different sense in which that same event is a having of the second-order property.)

There is one more problem. (Martin pointed it out to me. At least, I think this is the problem he had in mind.) It involves what we might call a finkish partial lack of a causal basis. The glass has property B but it lacks property B' . B and B' together would constitute a causal basis for breaking if struck; that is, striking and having B and having B' would together cause breaking. B alone is not a causal basis: striking and having B would not suffice to cause breaking. But the lack of B' is a finkish lack. If the glass were struck, straight away it would gain B' ; and in addition it would retain B ; and so it would break. And B , together with the striking, would be a cause of the breaking. Not, indeed, the complete cause; but a part of the cause is still a cause, so our *analysans* in its present form is satisfied. And yet because of the lack of B' it seems false that the unstruck glass is fragile. In short, the problem of finkish lacks has reappeared within our conditional analysis of what it is to be a causal basis.

The solution is to make one final amendment to the consequent of our counterfactual. We have the notion of a complete cause of an effect. (Mill called it the 'whole cause'. I use a different term to mark that we need not be committed to Mill's own analysis.) We can introduce a restriction of that notion: a cause complete in so far as havings of properties intrinsic to x are concerned, though perhaps omitting some events extrinsic to x . For short, 'an x -complete cause'. In the example just considered, the striking plus x 's having of B would indeed be a cause of the breaking, but not an x -complete cause. So our amended consequent is:

... s and x 's having of B would jointly be an x -complete cause of x 's giving response r .

Putting all the bits together, our reformed conditional analysis runs as follows:

Something x is disposed at time t to give response r to stimulus s iff, for some intrinsic property B that x has at t , for some time t' after t , if x were to undergo stimulus s at time t and retain property B until t' , s and x 's having of B would jointly be an x -complete cause of x 's giving response r .

An unlovely mouthful! But I think there is reason to hope that it will do the job.

Being oppositely disposed

A surprising, but unobjectionable, consequence of our reformed conditional analysis is that the same thing, at the same time, may be disposed in two opposite ways: as it might be, to break if struck and also not to break if struck. Of course, one of the two opposite dispositions will have to be finkish. Further, it will have to be the kind of finkish disposition that involves a compound disposition rather than an extrinsic intervention. That may not be the best kind for convincing the resister, but I myself still think it is one possible kind of finkish disposition.

The finkishly fragile glass has intrinsic properties B and B^* . B is an x -complete causal basis for breaking if struck; B^* is an x -complete causal basis for losing B if struck, and also for not breaking if struck. Thanks to B , the glass is finkishly disposed to break if struck. Yet thanks to B^* it also is non-finkishly disposed not to break if struck.

An unsatisfactory reformulation

Given that dispositions must have causal bases, and given that causal bases must be intrinsic, we might hope to stay closer to the simple conditional analysis. How about this, for instance?

The glass is fragile iff, if it were struck and its intrinsic character were unchanged, it would break.

Martin has warned us that it will not help just to insert a '*ceteris paribus*' into the simple conditional analysis, because when the time comes to say explicitly what is to be held fixed, we shall want to say that it is the

dispositional character of the glass that is to be held fixed – and if we say that, our conditional analysis of dispositions becomes circular.¹⁵ But that was not what we said – rather we said that the intrinsic character was to be held fixed. So Martin’s warning does not apply. (Or not unless intrinsic character must somehow be analysed in terms of dispositions, which seems unlikely.)

Holding fixed the intrinsic character means holding fixed all the intrinsic causal bases (and all the lacks thereof) which underlie the dispositions (and lacks of dispositions) of the glass. That would solve the problem of finkishness.

But the solution does not work, because holding fixed the intrinsic character of the glass means holding fixed altogether too much. If the glass were struck and its intrinsic character were unchanged, it would indeed retain the intrinsic causal basis of its fragility. But also it would be not at all deformed, not at all compressed, not at all afflicted with vibrations or shock waves, etc. So it would *not* break.

What it would do is astonish a sufficiently knowledgeable observer. We can agree that the glass does have a disposition to astonish such an observer – an extremely finkish disposition, with the entire intrinsic character of the glass as its causal basis. That is not the only disposition the glass has for responding to being struck; and not the most noteworthy disposition. Yet it is this disposition, and not any opposite disposition, that our present proposal deigns to notice.¹⁶

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¹⁵ ‘Dispositions and Conditionals’ pp. 5–6.

¹⁶ Thanks are due to C.B. Martin, Allen Hazen, Daniel Nolan, Barry Taylor, and others; and to the Boyce Gibson Memorial Library and Ormond College.