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Unfinkable dispositions

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Abstract This paper develops two ideas with respect to dispositional properties: (1) Adapting a suggestion of Sungho Choi, it appears the conceptual distinction between dispositional and categorical properties can be drawn in terms of susceptibility to finks and antidotes. Dispositional, but not categorical properties, are not susceptible to *intrinsic* finks, nor are they remediable by intrinsic antidotes. (2) If correct, this suggests the possibility that some dispositions—those which lack any causal basis—may be insusceptible to any fink or antidote. Since finks and antidotes are a major obstacle to a conditional analysis of dispositions, these dispositions that are unfinkable may be successfully analysed by the conditional analysis of dispositions. This result is of importance for those who think that the fundamental properties might be dispositions which lack any distinct causal basis, because it suggests that these properties, if they exist, can be analysed by simple conditionals and that they will not be subject to *ceteris paribus* laws.

Keywords Dispositions · Finks · Conditional analysis · Ceteris paribus laws

Two ideas about dispositions have travelled together for a long time. The first is that dispositions can be analysed in terms of conditional sentences. The second is that dispositions can be distinguished from categorical properties by the distinctive relationship each type of property has to conditional sentences.

Over the last few decades, each of these ideas have been subjected to direct challenges: first by Mellor's (1974, p. 171) attack on the dispositional/categorical distinction, and second by Martin's (1994) counterexamples to the conditional analysis of dispositions.

Mellor pointed out that properties that are paradigmatically categorical appear to necessitate conditional sentences of essentially the same kind as those associated with

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dispositional properties. Thus no distinctive relationship between dispositions and conditionals can be maintained. For example, it might be argued that the instantiation of *being triangular* necessitates a subjunctive conditional sentence to the effect that, if the triangular object were to have its corners counted, the result would be three.

Martin's attack on the conditional analysis of dispositions is based on the observation that a sentence of the form: "if *x* were struck, it would break" can be true or false of an object in virtue of factors that we do not identify with the dispositions of that object. For example, an object may be flammable, but no sentence of the form, "if *x* were exposed to flame, it would ignite" be true of that object, because of my determination to douse the object in water as soon as it is exposed to a flame. My dousing the object in water actually removes the causal basis of the object's flammability before the causal process leading from exposure to flame to ignition can commence. That is not to say, however, that the object was not flammable beforehand.

A "fink" is Martin's memorable name for such interfering factors as my propensity to douse the flammable object in water. Generally, a fink is a factor that, conditional on the occurrence of the stimulus, removes the causal basis of a disposition before the disposition can manifest.

A second species of counter-case to the conditional analysis of dispositions is an antidote.[1] A poison has the disposition to cause death if ingested. But it may be that, regarding a poisonous substance *x*, the sentence "if *x* were ingested by *y*, *y* would die" is false, because *y* may have a ready supply of antidote. An antidote works not by removing the causal basis of the disposition, but rather by interfering with the subsequent causal process by which the disposition would otherwise manifest itself.

A brief word about causal bases

In the forgoing passages much mention was made of the causal basis of a disposition. This concept deserves further comment.

A causal basis is traditionally construed as a property—not necessarily intrinsic—which has two key roles. First, it is the basis of an object's having the disposition. This suggests some sort of dependence relation between a disposition and its basis. Second, a causal basis is thought to play some important causal role in the manifestation of the disposition. Prima facie, it does not seem impossible for these two roles to come apart. Indeed, I suggest that we explicitly pull these roles apart, and so I distinguish between the supervenience BASE of a disposition and the causal BASIS.

I shall say that the causal BASIS of a disposition-instance is just the actual properties which are instantiated by the disposition-bearer which are causally relevant to its dispositional behaviour, while distinguishing the supervenience BASE as a *set* of properties which form a minimal supervenience base for fragility in all of its many and varied instances. Not every fragile thing instantiates every property in the set. But an object's being fragile is determined by which properties in the set are instantiated by that object: those properties which it does instantiate, and which are causally relevant to manifesting fragility, form the causal basis of that object's fragility.

For example, properties such as: having a thin and brittle outer layer; having delicate internal mechanisms; and so on are all members of the supervenience *base* of fragility. But a fragile thing need only instantiate an appropriate subset of these

[1] Bird (1998); Choi (2003). Johnston (1992) discusses similar cases, referring to the phenomenon as "masking".

properties. The subset which it does instantiate, and which is causally relevant to its shattering when struck, forms the causal *basis* of fragility for that *particular* object.

Finally, must base properties themselves be categorical or otherwise non-dispositional? Perhaps not (Mellor, 1974, p. 174). At a minimum, for a disposition to have an interesting supervenience base, the base must include properties which are distinct from the disposition in question. Whether the base properties must meet further constraints is a controversy I shall avoid entering.

1 Ideal conditions and intrinsic finks

Despite these impressively negative results for the overall project of linking dispositions to conditional sentences, efforts continue to reforge the connection. Recently, Choi (2005) has suggested that, while finks and antidotes are indeed problems for a simple conditional analysis of dispositions, it might be possible to maintain a distinction between dispositional and categorical properties in terms of entailment relations between ascriptions of these properties and conditional sentences.

The sort of conditional sentence that Choi suggests is entailed by the ascription of a dispositional property is one qualified by an "ideal conditions" clause.[2]

(1) If x were under ideal conditions, then x would manifest response R if exposed to stimulus S.

The crucial question becomes: can the ideal conditions be spelt out in a way that gives a plausible and determinate distinction between the sort of conditionals that are entailed by ascriptions of dispositions, yet not entailed by ascriptions of categorical properties? I suggest they can be, as follows.

Ideal Conditions. x is under ideal conditions if and only if (1) x is not in the presence of any *extrinsic* finks or in the presence of any *extrinsic* antidotes and (2) x is subject to the actual laws of nature.[3]

Obviously, what is given by (1) and Ideal Conditions does not constitute a satisfying *analysis*. It amounts to little more than saying that something has a disposition just in case it satisfies the simple conditional analysis, *except for countercases*. We have little independent grasp on what antidotes and finks are, except as things that render the conditional analysis false. Moreover, dispositions and finks—it might be argued—are themselves dispositional concepts. They are dispositions to interfere with the process of manifestation, or dispositions to remove the causal basis of a disposition. Despite this circularity, however, for drawing the conceptual distinction between dispositional and categorical properties this approach has some promise. And as will be evident in later sections, the approach is suggestive of interesting consequences.

This necessary condition for conditions to be ideal appears to distinguish successfully between dispositional and categorical properties. The reason for this is that categorical properties, but not dispositional properties, appear to be compatible with the existence of *intrinsic finks*. Consider Choi's "trickily triangular" object T (p. 498).

[2] The general strategy of defending a conditional analysis in this fashion is attributed by Choi to Mumford (1998).

[3] While Choi does not try to analyse ideal conditions as explicitly as I do, his account seems to delineate something very similar: absence of "extrinsic sundries" and that the laws of nature remain unchanged (p. 497).

This object is both triangular and made of a strange substance such that, upon having its corners counted, it very quickly becomes rectangular. Thus, the conditional sentence, "If *T*'s corners were counted, the result would be three" is false. Moreover, conditions are, by the above definition, ideal. There is nothing extrinsic to the object acting as a fink with respect to the corner-counting conditional. Rather, the finkishness comes from the intrinsic properties of *T* itself. Despite this strange behaviour, it seems intuitively plausible that *T* is truly triangular. Its being made of a tricky substance does not cast its triangularity into doubt.

Compare this with a paradigmatically dispositional property, such as fragility. Consider Lewis's (1997) suggested fink for fragility: a sorcerer who intends to cast a spell on a glass very quickly, as soon as it is struck, turning it into rubber, or making some other change to its constitution such that it does not respond to the stimulus by shattering. Lewis's fink is extrinsic, and as such poses no threat to the fragility of the glass. Is it possible, however, for a counterpart of this glass to be both fragile and to have an *intrinsic* fink of this sort? For instance, instead of a sorcerer intending to act in the future, he might have cast a protective enchantment on the glass in advance of any striking. The glass thus has a microstructure similar to that of a typical glass, but it also has additional intrinsic properties such that when struck it will cause itself to become rubbery and will not break.[4] It is far from clear that this glass is fragile. Rather, it appears to possess a rather odd form of non-fragility.

If these intuitions are correct, and if the lesson of Choi's intuitive examples can be generalised, the link between dispositional properties and conditional sentences is slightly more robust than that between categorical properties and conditional sentences. Suppose we start from a situation where a thing has a property—dispositional or categorical—and a stereotypical associated conditional sentence is true of it. You can add an *extrinsic* fink to the situation, thus rendering the conditional sentence false, but the object will still have the original property, be it dispositional or categorical. If you add an *intrinsic* fink-like (or antidote-like) property to the disposition-bearer, however, the object will cease to have the dispositional property. If, on the other hand, the property with which we began is categorical, it is possible for the object to retain said property while also instantiating the intrinsic fink or antidote.

Categorical properties, then, may be intrinsically finked. Dispositional properties may be extrinsically, but not intrinsically finked. They may not be intrinsically finked, because any such alleged fink would entail that the disposition is absent, *simpliciter*.

It should be stressed that this claim is intended as a mere conceptual truth. That is to say, we ought not think of dispositions as being "vanquished" by a fink in some physical contest, whereas the categorical property valiantly fights it off. Rather, we are simply aiming to describe the conditions under which we apply the terms 'dispositional' or 'categorical' to a property.

This merely conceptual claim, however, is of interest even to speculative metaphysicians. It is particularly of interest given that some have claimed there exist fundamental properties that are dispositional, and that lack supervenience bases distinct from themselves. As will be shown in the final section, this theory can be shown to have quite striking implications if this conceptual claim about the relative finkability of dispositional and categorical properties can be sustained.[5]

[4] This is analogous to Choi's "trickily sturdy" object.

[5] Another illustration of the interest of this conceptual claim is that Cohen and Handfield (in press) use this means of distinguishing between dispositional and categorical properties to argue that Smith's

2 Extrinsic dispositions

The suggested method above for distinguishing between dispositional and categorical properties is simply a prima facie plausible claim, backed by intuitions about a few concrete cases.

Choi goes beyond conjecturing that this sort of account will support the dispositional–categorical distinction, and attempts to provide an account of what guides us in making disposition-judgments that would support the suggested distinction. Choi's suggestion is that we are guided by two heuristics in ascribing a disposition D to some object x (pp. 499–500).

Conditional test If x were to undergo the characteristic stimulus of D would it exhibit the characteristic manifestation of D?

Nomic duplicate test Is it 'clear enough' that a possible duplicate of x subject to the same laws of nature as x possesses D?

These tests are not offered as an analysis of disposition-ascriptions, but as important sources of our judgments regarding dispositions. These tests are thought to support the analysis of the dispositional–categorical distinction given above, because where something has an extrinsic fink or antidote, it will very likely have a possible intrinsic duplicate, subject to the same laws of nature, where it is 'clear enough' that the duplicate possesses D. But now consider an object z that is alleged to have disposition D, but also to have an intrinsic fink to D. Duplicates are alike in all of their intrinsic properties. So *all* of the duplicates of z will also have the intrinsic fink to the alleged disposition D, and there will be no duplicate of z (subject to the same laws) where the 'clear enough' condition is satisfied. Moreover, in the actual case, z will not satisfy the conditional test, due to the presence of the fink-like intrinsic property. So z satisfies neither test, and there will be little inclination to hold it to possess D.

(Although Choi does not discuss antidotes, much the same reasoning would apply. If an object has an intrinsic 'antidote' to its alleged disposition, then the intuition that the object possesses the disposition will surely waver. Moreover, using the nomic duplicate test, *no* such duplicate of the intrinsically antidoted object will obviously possess the disposition. Hence dispositions appear to be incompatible both with intrinsic finks and with intrinsic antidotes.)

Apart from the empirical question of whether Choi's tests are psychologically adequate descriptions of our habits, there is a problem with using these tests in application to the full range of dispositions. This argument assumes that all dispositions are intrinsic. That assumption is—as Choi concedes (p. 500, n. 12)—false. Fara (2001) and McKitrick (2003b) have offered some compelling examples of extrinsic dispositions, such as *vulnerability* and a property roughly akin to *weight*.[6] Plausibly, intrinsic duplicates subject to the same laws of nature can differ in their weight, because they are subject to different gravitational fields. Similarly, intrinsic duplicates can differ in vulnerability, due to the presence or absence of external devices to protect them.

Footnote 5 continued
(1997, 2003) dispositional account of moral responsibility fails, and that if any such account is to succeed it will need to be re-articulated in terms of categorical properties.

[6] McKitrick takes care to define 'weight', for her purposes, as follows (McKitrick, 2003b, p. 160): x has weight n pounds iff x has the disposition to depress a properly constructed scale so as to elicit a reading n pounds in x's gravitational field. Even if one doubts that weight proper is a disposition, this artificially defined property clearly is dispositional.

(To stress the relation between extrinsic circumstances and a disposition: even an intrinsic disposition may require propitious extrinsic circumstances in order for it to manifest. But the absence of propitious circumstances does not remove the disposition, if it is intrinsic. For an extrinsic disposition, however, at least some of the extrinsic circumstances of the disposition-bearer are *constitutive* of the disposition.)

Even though Choi's heuristics do not readily apply to extrinsic dispositions, the intuition that dispositional properties are not compatible with intrinsic finks seems at least as strong for extrinsic dispositions. Consider an example. A soldier who is allegedly vulnerable, because he wears no armour, is enchanted by a sorcerer, such that, if attacked, he will very quickly grow scales before any blow is landed. Thus, he possesses an intrinsic property that is fink-like—the enchantment. Alternatively, suppose he consumes some very powerful growth hormones which ensure that, if successfully attacked, he will heal with enormous rapidity (an intrinsic property which acts like an antidote). Consequently, if attacked, he will heal so quickly from any wounds that his health and life will not be endangered. It seems obviously correct to say that, once the enchantment has been cast, or once the growth hormone has been ingested, the soldier is no longer vulnerable.

Beyond this sort of appeal to intuitive examples, however, can any theoretical account be afforded for the claimed relationship between dispositions and potential finks, given that Choi's explication in terms of the nomic duplicate test will vindicate that claim only for intrinsic dispositions?

I suggest that a constitutive part of our concept of dispositionality is a judgment regarding the supervenience base of the property that is being regarded as dispositional. To ascribe dispositionality to a property involves some commitment—perhaps not fully determinate—to what the relevant set of supervenience base properties is for that property.

This relates to judgments regarding finks and antidotes, because these are essentially interfering conditions that are *external* to the base of a disposition. That is, they are properties that are not members of the set of base properties for the disposition.

A neat explanation of the distinction suggested by Ideal Conditions then, is that for all dispositional properties D, the supervenience base of D includes *all possible intrinsic properties*. (Or if there is some other conceptual restriction on the sorts of object which can instantiate D, such that only members of kind K can instantiate D, then I conjecture that the base of D is the set of all possible intrinsic properties for members of kind K.[7]) If this is right, any intrinsic change to the bearer is a change in the pattern of instantiation in the base of the disposition. That may or may not mean the object still has the disposition. If the change introduces something fink-like to the intrinsic properties of the object, then it has lost the disposition. Because it now has a total complement of supervenience base properties, that is—*ceteris paribus*—associated with *not* manifesting the right response when exposed to the right stimulus.

Therefore the possibility of a 'fink' that is intrinsic is simply a confusion. Any such state of affairs is merely a meddling with the causal basis of the disposition such that the object no longer possesses the relevant disposition.

Consider a particular object, then, to which we intend to ascribe an *intrinsic* disposition. On the above proposal, our thought has roughly this content, then: "This object x has an overall intrinsic state such that, if conditions were ideal, its being in that state

[7] Or a smaller set which is a supervenience base for all of the possible intrinsic properties for kind K. What Langton and Lewis (1998) call the "basic intrinsic" properties.

would cause it to *M* if exposed to stimulus *S*".[8] If we were to *add* an intrinsic 'fink' to an object such as *x*, the causal basis would be contaminated to the point where the disposition is lost. That is, it is no longer true of the object that it has an *overall intrinsic state* of the appropriate sort. The presence of the 'fink' is not compatible with the presence of an intrinsic causal basis, and thus the disposition is not compatible with an intrinsic fink.

In the case of an extrinsic disposition, our judgments regarding the supervenience base of the disposition are less readily localised, but in most cases it is still clear enough that the intrinsic state of an object contributes to the having of the relevant disposition. To take the example of weight, the judgment appears to be roughly of the form: "*x* has an overall intrinsic state *and* is in a given gravitational field, such that if it were put on a scale it would..."

Like an intrinsic disposition, weight appears unfinkable by an intrinsic property, for the overall intrinsic state of an object is part of the causal basis for that object's having a given weight. If an object were to instantiate any putative intrinsic fink, it would fail to have an overall intrinsic state of the right sort: it would simply have a different weight.[9] In addition to this incompatibility with intrinsic finks, weight properties are presumably incompatible with finks that are intrinsic properties of the gravitational field. Again, any such 'fink' would simply constitute a change in the causal basis for weight, and hence a change in the object's weight, simpliciter.

It is possible for there to be *other* extrinsic factors, however, that are straightforward finks or antidotes to the object's weight. For instance, a small child might constantly accompany an object, with the intention of meddling with the scales as soon as anyone attempts to weigh the object. The presence of the child serves as an antidote to the disposition, rendering the relevant conditional false. There is no difficulty in supposing, however, that the presence of the child leaves the weight of the object unchanged. This is because the child is manifestly external to the base of the object's weight.

The crucial point, then, is that to be a true fink or antidote—an interfering factor that falsifies the associated conditional, but does not vitiate the dispositional property itself—a property must be external to the supervenience base: it must not be a member of the set of properties on which having the disposition supervenes. All dispositions, whether intrinsic or extrinsic, include the overall intrinsic state of an object in the supervenience base of the disposition. So all finks and antidotes must be extrinsic. Or conversely, all dispositions are *intrinsically unfinkable*.

However, some dispositions are themselves extrinsic, and this is because they include some extrinsic properties in the supervenience base. So for these properties, not any extrinsic property that interferes with the manifestation of disposition is a

[8] Of course, it would be completely naïve to suggest that this will be a successful analysis. I am merely trying to make explicit the role that an ascription of a supervenience base to the disposition-bearer plays in ascribing a disposition.

[9] Actually, this might be disputed for weight proper. Imagine an object which has a built-in jet engine and a detector that switches the engine on when it is being weighed. As a result, whenever weighed, the scale deflects in a fashion that does not accurately reflect the rest mass of the object and the gravitational field. Nonetheless, one might think that the object's weight is not affected by this scale-deceiving behaviour. In that case, it appears that the jet engine is a fink for weight, and it is intrinsic.

However, this is merely evidence for weight proper being categorical, rather than dispositional, since the base of this property does not include the entire intrinsic state of the bearer. For McKitrick's artificially defined weight property, I maintain, its 'weight' would be changed by enabling the jet engine and detector.

fink or an antidote. The crucial question is whether the extrinsic property is internal or external to the supervenience base. The presence of an interfering child is external to the base of weight. A change in the gravitational field is a internal to the base of weight. So the former, but not the latter, is a genuine fink.

In contrast, to regard a property as categorical appears to involve a commitment to a more heavily circumscribed base for that property. *Being triangular* may well involve having certain shape properties such that, if the object's corners were to be counted under certain ideal conditions, the result would be three. But it does not involve having an *overall intrinsic state* such that this is so. The basis for a categorical property such as shape is always confined to the geometrical properties of the object. Properties such as being made from the "tricky substance" which can cause a change in shape are not internal to the base of this property, even though those properties may be intrinsic to the bearer.

Therefore categorical properties—to the extent that they can give rise to true conditional sentences in a disposition-like fashion—are susceptible not only to extrinsic but also intrinsic finks.

3 Bare dispositions and laws of nature

Some have suggested that there might be "bare" dispositions: properties that are dispositional but that lack any causal basis distinct from themselves.[10] How are these properties to be reconciled with the above?

One possibility—call it the GLOBAL HYPOTHESIS—is to suppose that bare dispositions do have supervenience bases, but that they represent a degenerate case: their base includes every possible property, including extrinsic properties. Thus an ascription of a disposition that is bare to an object x involves the judgment that 'the state of the entire world is such that, were x exposed to the characteristic stimulus S, it would yield the characteristic manifestation M'.

If there were any such global dispositions, it appears to follow that they would be "unfinkable". By that I mean just that, for any circumstance which you could arrange so as to render the associated conditional false, it would also make it the case that the object no longer bears the disposition. This is for the simple reason that any change whatsoever in the world that is a putative fink would also be a change internal to the supervenience base of the disposition—because the base is "global" in its range.

Moreover, the simple conditional analysis would presumably succeed for such bare dispositions, because any putative counterexample in the fink/antidote mold would simply be grounds to suggest that the disposition is not present at all.[11]

McKitrick's example of *vulnerability* appears to exemplify this. For all attempted finks and antidotes to this property that I have considered, I am inclined to believe simply that the disposition has been lost. Perhaps vulnerability just *is* the property of being such that, if one were attacked, one would be gravely wounded, or something to that effect.[12]

[10] See especially McKitrick (2003a) and references therein.

[11] This assumes that there are no other varieties of counterexample to the simple conditional analysis. That is perhaps overly optimistic, but a complication I will not concern myself with here.

[12] Of course, for my purposes nothing rests on whether or not there are in fact any predicates in English which refer to properties that are unfinkable in the way I have described. Although it is

Finally, for those who embrace some form of dispositional essentialism—the view that the fundamental natural properties are essentially dispositional[13]—the global hypothesis appears to have interesting implications for the laws of nature. Dispositional essentialists appear to advocate the claim that the fundamental properties are bare dispositions—certainly they cannot be dispositions that supervene on other more basic properties, for then they would not be fundamental, nor would they be 'bare'. Hence the global hypothesis is one account of what these fundamental, bare dispositional properties might be.

As dispositional essentialists have noted, it appears to be a consequence of their view that there will be causal laws which are necessary truths. In the simplest case, for a disposition D to give manifestation M under stimulus conditions S, the corresponding law would simply be a generalisation about everything which instantiates D:

$$\forall x((Dx\&Sx) \rightarrow Mx).$$

But this simple case assumes that dispositions can be analysed in terms of the simple conditional analysis. And the existence of finks and antidotes has shown that to be a naïve hope.

As Bird (2005) has argued, however, the possibility of finks and antidotes does not rule out the possibility of *ceteris paribus* laws governing the phenomena in question. In much the same way that an 'ideal conditions' clause might be hoped to rule out finks and antidotes in an analysis of dispositions, perhaps a *ceteris paribus* clause rules them out in the corresponding laws.

If the global hypothesis correctly describes the nature of the fundamental properties, however, then for the fundamental properties there are no finks or antidotes. Therefore, the laws of nature ought to be exceptionless regularities, rather than merely true, *ceteris paribus*. This is a striking result, and one which might bring dispositional essentialism into conflict with the results of empirical science. It might also be a welcome result for dispositionalists, because it would make the task of analysing the fundamental properties much easier.[14]

4 Bare dispositions and intrinsicality

Can we be confident that the global hypothesis is correct? Certainly not. But it strikes me as an interesting and plausible way of interpreting views such as dispositional essentialism.

One possibly alarming feature of the global hypothesis, however, is that it explicitly renders such properties extrinsic, because they include extrinsic properties in the base

Footnote 12 continued
perhaps of interest to determine whether or not there are any such concepts in our ordinary dispositional vocabulary, simply because it demonstrates a striking heterogeneity in our disposition-talk.

[13] See, e.g. Ellis (2001), Mumford (2004) and Bird (2005).

[14] Bird (2004) canvasses a similar result, but is more sanguine about it. Moreover, his argument—at least with respect to the possibility of finks—turns on the claim that "in the case of a fundamental property which by definition has no causal basis, it becomes mysterious why there should be a time gap between stimulus and manifestation and why the persistence of the disposition itself should be necessary" (p. 263). Bird is obviously right that the phenomenon of finkishness requires an interval between stimulus and manifestation and the persistence of the disposition for some period during this interval. His claims about the mysteriousness of this, however, strike me as more doubtful than the conceptual claims advanced here.

of such properties. This is probably unattractive to some dispositional essentialists, since the fundamental properties are typically thought to be intrinsic, *par excellence*.

Instead of the global hypothesis, one could maintain that the basis is *identical* to the disposition itself. Call this the IDENTITY HYPOTHESIS.[15]

I see no immediate objection to the identity hypothesis, and it is perhaps the preferable version of bare dispositionalism. I do not intend to adjudicate these points here, however. I do wish briefly to argue that the identity hypothesis does not make it straightforward to establish the *intrinsicality* of bare, fundamental dispositions.

First, note that on 'standard' accounts of dispositions, an object has a disposition in virtue of (1) instantiating a causal basis for that disposition and (2) being subject to laws of nature such that the causal basis is lawfully related to the manifestation under the stimulus conditions. For those who take the laws of nature to be contingent, this second element is essential, and has the consequence that a dispositional property is always *extrinsic*. This is because objects which are intrinsically identical—according to the contingentist about laws—could exist in worlds with different laws. So the property of *being subject to a given law* is extrinsic. Dispositional properties, being grounded in extrinsic properties of this sort, are therefore extrinsic also. Talk of "intrinsic dispositions" is usually just shorthand for "intrinsic *relative to the laws*".

For those who advocate *fundamental* bare dispositions, however, matters are less straightforward. Most take it to be a consequence of their view that the laws of nature are metaphysically necessary (Bird, 2005; Ellis, 2001). Therefore, it is not possible that objects which are intrinsically similar could exist in worlds with different laws: the laws are the same in all possible worlds. Therefore, it might appear that dispositional essentialists can indeed maintain that the fundamental properties are both dispositional and intrinsic.

However, consider an electron *e*, which is claimed to have such an intrinsic, bare, disposition *P*. The disposition is to emit a photon at some later time. Attempts to define intrinsicality frequently appeal to the idea that the instantiation of an intrinsic property should be possible, independently of the existence of other objects, including earlier and later temporal stages of the object bearing the property (Lewis, 1983; Langton & Lewis, 1998). But an electron that is *P must*—according to the dispositional essentialist—be accompanied by a later photon. So it seems initially doubtful that the property of being in that energy state is intrinsic.

One might think: Finks to the rescue! The electron might be in the presence of a fink (or antidote) to the emission of the photon, hence it is *not* necessary that an electron with property *P* be accompanied by the photon.

But where lies this hoped for fink? If it is extrinsic to the electron, then the electron is still accompanied by some distinct event or object. So again, the state of the electron appears to be necessarily connected to the existence of something distinct, and thus *P* does not appear to be intrinsic.

[15] McKitrick's (2003a) defence of the possibility of bare dispositions seems to lie in this camp. Although McKitrick is *not* overtly hostile to the possibility that bare dispositions are extrinsic: she appears to leave the matter open.

I think the identity hypothesis, conjoined with the claim that the fundamental properties are intrinsic, might be the best interpretation of C. B. Martin and John Heil's views about properties (Heil, 2003; Martin, 1997; Martin & Heil, 1999). Martin and Heil claim that the natural properties are both dispositional and qualitative, where by qualitative they mean something like 'categorical' and 'intrinsic'. Hence Martin and Heil would likely object to the way the global hypothesis treats fundamental dispositions as extrinsic.

Could the electron's state be finked by other *intrinsic* properties of the electron? Not if the property *P* is *dispositional*, for as has been argued, dispositions cannot be intrinsically finked.

So the electron's property *P* is allegedly intrinsic, but must be accompanied, either by a manifestation—the emitted photon—or by a finking or antidoting circumstance, which must be extrinsic. But in what sense, then, is *P* an intrinsic property, if it must be accompanied by such external factors as these?

Therefore, the identity hypothesis does not immediately vindicate the claim that the fundamental properties are both dispositional and intrinsic. To support this claim, dispositional essentialists must give us a new account of what it is for a property to be intrinsic, or they must abandon the idea that the fundamental properties are dispositional.[16]

5 Conclusions

In conclusion:

1. Choi's dispositional–categorical distinction can be extended to extrinsic properties and neatly drawn in terms of susceptibility to finks and antidotes. Categorical properties can be intrinsically finked or antidoted. Dispositions cannot.
2. Some, but not all, extrinsic dispositions appear to be both unfinkable and not remediable by antidotes. The simple conditional analysis of dispositions may therefore succeed for such properties. The properties for which this might work are those which do not have (minimal) supervenience bases at all.
3. Dispositional essentialists are committed to the claim that the fundamental properties are dispositions that lack distinct supervenience bases. Therefore, on one plausible way of explicating this claim—the global hypothesis—they are committed to the fundamental laws of nature being exceptionless regularities, unqualified by *ceteris paribus* clauses.[17]

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[16] I take it that views like Sydney Shoemaker's account of properties are not touched by this argument, since Shoemaker explicitly eschews the label "dispositional" to characterise the nature of properties (Shoemaker, 1980, pp. 210–211), and characterises them instead in terms of the contributions they make to the causal powers of their possessors.

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