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# INTRINSIC FINKS AND DISPOSITIONAL/CATEGORICAL DISTINCTION

**Abstract:** The central theme of this paper is the dispositional/categorical distinction that has been one of the top agendas in contemporary metaphysics. I will first refine Choi's semantic account of dispositions and then develop from it what I think the correct formulation of the dispositional/categorical distinction in terms of counterfactual conditionals. It will be argued that my formulation does not have the shortcomings that have plagued previously proposed ones. Then I will turn my attention to one of its consequences, the thesis that dispositional properties are not susceptible to intrinsic finks. This thesis was previously advanced by Choi and has ever since stirred up a big controversy, endorsed by some philosophers like Handfield, Bird, and Cohen but rejected by others like Clarke and Fara. Against this background, I will remedy Choi's defense of the impossibility of intrinsically finkable dispositions and then refute Clarke's apparently powerful criticisms of it. And so the upshot is that it is much more reasonable to hold on to the thesis that dispositions are intrinsically unfinkable. This will have the effect of putting the dispositional/categorical distinction on firmer and more secure ground.

The recent philosophical dialogue concerning the dispositional/categorical distinction takes an interesting turn as it centres around the conceptual possibility of intrinsic finks. Traditionally, the dispositional/categorical distinction is drawn by saying that dispositional ascriptions entail non-trivial counterfactual conditionals whilst categorical ascriptions do not. The newest defense of it, though, is based on the idea that dispositional properties are intrinsically unfinkable but categorical properties are intrinsically finkable in the sense explained below, which is first put forward by Sungho Choi (2005) and later refined by Toby Handfield (2008). This defense has the potential to substantially advance our understanding of the venerable but

still philosophically vexing dispositional/categorical distinction, or so I believe.

The idea that categorical properties are intrinsically finkable but dispositional properties are not, which I deem intriguing in its own right, is not only importantly relevant to the issue of the dispositional/categorical distinction but also to other issues such as Kripke-Wittgenstein rule-following puzzle and the principle of alternate possibilities. For instance, Handfield and Bird (2008) turn down Martin and Heil's (1998) dispositional solution to Kripke's skeptical challenge by alluding to the fact that dispositions cannot be finked by intrinsic properties. On the other hand, Cohen and Handfield (2007), based on the fact that there can be no intrinsic finks to dispositions, argues that Michael Smith (2003) fails to defend the principle of alternate possibilities from Frankfurt's objection. This underscores the philosophical significance of the issue of whether dispositions can be finked by intrinsic properties or not.

Choi's thesis that dispositional properties are intrinsically unfinkable, however, has been heavily and instructively criticized by some philosophers like Randolph Clarke (2008; forthcoming). I agree with Clarke that Choi's supporting arguments for the impossibility of intrinsically finkable dispositions are not fully satisfactory. I maintain, though, that Choi's central idea is correct, to which extent it is possible to make better sense of it and construct better arguments for it. Choi's difficulty chiefly arose from the fact that, when he first put it forward in (Choi 2005), he had to go without a plausible semantic account of dispositional ascriptions and inevitably appeal to the unsophisticated intuition about dispositional ascriptions whenever necessary. In fact, I maintain, in order to appreciate the main thrust of Clarke's criticisms, we are best advised to come to terms with the question of how to understand dispositional ascriptions conceptually.

Recently, however, Choi has proposed his own semantic account of dispositional ascriptions and defended it from a variety of actual or possible criticisms. I believe that this account of dispositional ascriptions will prove highly instrumental in defusing Clarke's challenging criticisms of Choi's thesis that categorical properties but not dispositional properties are intrinsically finkable. Besides, Choi's semantic account of dispositional ascriptions can be used as a stepping stone for working out a more defensible formulation of the

dispositional/categorical distinction in terms of counterfactual conditionals, which will set the background for understanding Choi's thesis in a general perspective. It will thus provide the resources for enriching and upgrading the debate regarding the dispositional/categorical distinction.

## **1. Dispositional ascriptions and counterfactual conditionals**

Most philosophers of dispositions are in general agreement about the fact that counterfactual conditionals are at issue in the talk of dispositional properties. When I say that the glass on my desk is fragile, to a first and rough approximation, I understand that it would break if struck under appropriate conditions. But philosophers are in stark disagreement as to whether or not we can give precise form to this cursory and unrefined intuition with the aim of developing it into a philosophically respectable account of dispositions, what is called the conditional analysis of dispositions. Some philosophers like Charlie Martin (1994, 8) express grave doubt about the prospect of the conditional analysis of dispositions, saying that counterfactual conditionals are merely 'clumsy and inexact linguistic gestures to dispositions'. Indeed, at a first glance, Martin's position gains ground with the result that there is a growing feeling of skepticism about the conditional analysis of dispositions (Bird 2007, Chapter 2).<sup>1</sup> Against this background, Choi (2008) proposes that the simple conditional analysis of dispositions, which many philosophers do not hesitate to proclaim to be no longer a viable option, is in fact an adequate semantic account of dispositions; and he defends it at close quarters from objections that call into question a variety of its aspects.

To see more details, let us start with the simple conditional account of dispositions

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<sup>1</sup> For a recent development of the conditional analysis of dispositions, see also (Manley and Wasserman 2008) and (Choi 2008; forthcoming).

formulated by means of the following proposition:

SCA. Something  $x$  has the disposition at time  $t$  to exhibit manifestation  $m$  in response to being situated in stimulating circumstance  $c$  iff, if  $x$  were to be situated in  $c$  at  $t$ , it would exhibit  $m$ .

SCA is intended to furnish a conceptual analysis of canonical dispositions, those dispositions which are explicitly couched in the overtly dispositional locution – the disposition to exhibit a manifestation in response to being situated in a stimulating circumstance. For example, SCA analyzes ‘ $x$  is disposed to dissolve in response to being put in water’ into the counterfactual conditional that if  $x$  were put in water it would dissolve. To work out an analysis of conventional dispositions like water-solubility and inflammability, we need define them in the overtly dispositional locution by specifying their stimulating circumstances and manifestations.<sup>2</sup> Choi (2008, 815-817) suggests that ‘ $x$  has a conventional disposition  $D$  at time  $t$ ’ be defined into ‘ $x$  has the disposition at  $t$  to exhibit the  $D$ -manifestation in response to the  $D$ -stimulus under the ordinary conditions for  $D$ ’. This joins with SCA to entail the following analysis of conventional dispositions:

CONV. Something  $x$  has a conventional disposition  $D$  at time  $t$  iff, if  $x$  were to undergo the  $D$ -stimulus at  $t$  under the ordinary conditions for  $D$ , then  $x$  would exhibit the  $D$ -manifestation.

Definitions of technical terms are in order. CONV is intended to come to grips with conventional dispositions that may be tentatively thought of as dispositions like fragility, water-solubility, and elasticity that correspond to simple predicates in English. It is not an easy

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<sup>2</sup> This is what is called Lewis’s two-step approach to dispositions. See (Lewis 1997) and (Choi 2003).

matter to give a precise characterization of conventional dispositions, independently of CONV. But the tentative characterization will be good enough for the present purpose. Meanwhile, the expressions, '*D*-stimulus' and '*D*-manifestation', occurring in CONV denote the characteristic stimulus and manifestation of a conventional disposition *D*, respectively. Given a conventional disposition, there is a pair of characteristic stimulus and manifestation.<sup>3</sup> The characteristic stimulus and manifestation of fragility are the event of being struck and the event of breaking, respectively. Therefore, fragility-stimulus and fragility-manifestation are the event of being struck and the event of breaking, respectively. That said, CONV provides the following analysis of fragility: *x* is fragile at time *t* iff it would break if struck at *t* under the ordinary conditions for fragility.

It is the notion of ordinary conditions that most cries out for clarification in CONV. Choi hopes to understand the ordinary conditions for a disposition *D* to be extrinsic conditions to the putative bearer of *D* that are ordinary to those who possess the corresponding dispositional concept. Thus understood, the ordinary conditions for fragility are extrinsic conditions that are ordinary to the possessors of the dispositional concept of fragility, most folks. But they do not possess the dispositional concept of superconductivity as they do not know how to use it in drawing inferences or classifying objects. It is possessed by a small number of physical scientists who deal with the phenomenon of superconductivity. Thereby, the ordinary conditions for superconductivity are extrinsic conditions that are ordinary to those physical scientists.

In an attempt to prop up CONV combined with his characterization of ordinary conditions as

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<sup>3</sup> Here I confine my attention to singly manifested dispositions, dispositions associated with unique pairs of characteristic stimulus and manifestation. As a result, the conclusion I will come to concerns the issue of how to demarcate singly manifested dispositions, as opposed to dispositions in general, from categorical properties. I maintain that this conclusion is non-trivial, indeed philosophically contentious and significant. In this sense, the restriction to singly manifested dispositions does not dampen the significance of the subsequent discussion. Further, I do not think that it will be a tall order to extend it to multiply manifested dispositions.

being ordinary to the possessors of the corresponding dispositional concept, Choi has argued that it has no trouble in dealing with sticky cases like Martin's fink cases. To see this, let us consider a variant of one of Martin's (1994) fink cases where a glass is struck but does not break because, quick as a flash, a sorcerer responds to the striking by casting a spell that renders it no longer fragile. In this case, the fragile glass would not break if struck. But this spells no trouble for CONV. Note that, under the ordinary conditions to most folks, there are no strange things like the sorcerer which would remove the fragility of the glass if it were struck. This means that the glass would break if struck under such conditions, which entails that, according to CONV, the glass is fragile.

What if it is supposed that the sorcerer is omnipresent such that she is not ruled out from the ordinary conditions for fragility? In this case, if the glass were struck under the ordinary conditions for fragility, it would not break, which means that the glass is not fragile according to CONV. Choi (2008, 818-820), however, has given compelling reasons for thinking that, on the supposition at issue, the glass is better deemed as non-fragile. CONV is thus successful in dealing with Martin's fink case, which serves as a motivating argument for it. Along with this argument, Choi has made a number of points in favour of CONV – more generally, SCA. I maintain, indeed, that it is basically on the right track for a better understanding of dispositional properties despite the fact that there are still a few things to be improved about it. With this in mind, I will assume CONV – more generally, SCA – for the sake of the subsequent discussion.

One thing I wish to improve about CONV in the present context has to do with the notion of ordinary conditions. I take it that although Choi's own clarification of it is broadly correct, it is in need of further clarification. One might ask 'In what sense are the so-called ordinary conditions for superconductivity are ordinary to the physical scientists?' After all, what Choi means by the 'ordinary' conditions for superconductivity, say, the condition of extremely low temperature is not ordinary to the scientists in their lives. The condition of extremely low temperature is ordinary to them only for certain times at work. I take this observation as a

legitimate call for further clarification of the notion of ordinary conditions.<sup>4</sup> I suggest that Choi's characterization of ordinary conditions can be naturally elaborated by saying that the ordinary conditions for a disposition *D* are extrinsic conditions that obtain in the vast majority of cases that the possessors of the dispositional concept of *D* encounter where the *D*-stimulus leads to the *D*-manifestation. On this suggestion, the ordinary conditions for *D* are ordinary to the possessors of the concept of *D* in the sense that they obtain in *most* cases that the possessors of the concept of *D* come across where the *D*-stimulus leads to the *D*-manifestation.

This elaboration answers the question of in what sense the ordinary conditions for superconductivity are ordinary to the physical scientists. First, let *Ms* and *Mm* be the characteristic stimulus of superconductivity and the characteristic manifestation of superconductivity. Let us say that *Ms* is the event of getting connected to an electric source and *Mm* is the event of transmitting electric current with negligible resistance. On my suggestion, the ordinary conditions for superconductivity obtain in the vast *majority* of cases that the scientists encounter where *Mm* follows *Ms*, in which sense they are ordinary to those scientists. The ordinary conditions for superconductivity may not be ordinary to the scientists in their lives. What is ordinary among those cases where *Mm* follows *Ms* may be extraordinary in general since it is very rare that *Mm* follows *Ms*. But when we confine our attention to those cases where the scientists observe that *Mm* follows *Ms*, the ordinary conditions for superconductivity are ordinary to the scientists in the sense that they obtain in the vast majority of those cases. This elucidates the sense in which the ordinary conditions for superconductivity are ordinary to the scientists. What is more, my elaboration makes no difference to Choi's justification for CONV. For instance, the sorcerer in Martin's fink case does not operate in the massive majority of cases that we encounter where striking leads to breaking. Therefore, on my suggestion, the sorcerer would be ruled out from the ordinary conditions for fragility, which entails that CONV is not afflicted with Martin's fink case at all.

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<sup>4</sup> This observation was brought to my attention by Barry Lee.

Hence Martin's fink case can still be used to boost CONV on my suggestion regarding the notion of ordinary conditions. More generally, I believe, the articulation of the notion of ordinary conditions suggested here makes no difference to Choi's motivating arguments for CONV, in which sense it is congenial to Choi's intention.

As I said before, I will assume SCA – and CONV – in what follows. It is worth mentioning that SCA *per se* does not make for the dispositional/categorical distinction. For, SCA does not rule out the possibility that categorical properties like triangularity and one meter length are analyzed in the same manner as dispositional properties. That is, SCA is compatible with the possibility that  $x$ 's being triangular at  $t$  is analyzed by means of the counterfactual conditional that if  $x$  were to undergo the triangularity-stimulus at  $t$  under the ordinary conditions for triangularity, then  $x$  would exhibit the triangularity-manifestation. This being the case, SCA alone does not offer a criterion for differentiating dispositional properties from categorical properties. I believe, nonetheless, it will throw an interesting light on the existing debate about the dispositional/categorical distinction, in particular about the idea that dispositions are intrinsically unfinkable.

## **2. The dispositional/categorical distinction**

To set the stage for my subsequent discussion, it will be useful to delineate the basic contour of the current debate surrounding the dispositional/categorical distinction. Traditionally, the dispositional/categorical distinction rests upon the claim that dispositional ascriptions entail non-trivial counterfactual conditionals whilst categorical ascriptions do not. For instance, assuming that water-solubility is a dispositional property, 'x is water-soluble' entails something like the following counterfactual conditional: 'if x were put in water it would dissolve'. Conversely, it is said that categorical ascriptions such as 'x is one meter long' do not entail any such non-trivial counterfactual conditionals.

In an effort to sophisticate this claim in the face of some apparent counterexamples like Martin's fink case described in the last section, Stephen Mumford (1998) proposes to drive a wedge between dispositional and categorical properties not in terms of simple counterfactual conditionals but in terms of counterfactual conditionals involving what he calls ideal conditions. His proposal is, for example, that 'x is water-soluble' entails the counterfactual conditional 'if the ideal conditions obtain, x were put in water it would dissolve'; but categorical ascriptions like 'x is one meter long' entail no such counterfactual conditionals.

Choi (2008, 829-830) correctly points out that Mumford's account should be considered as an account of conventional dispositions, not an account of dispositions in general. It is not intended to accommodate unconventional dispositions like *the disposition to break in response to being struck* and *the disposition to dissolve in response to being submerged into water* that do not involve implicit reference to standard extrinsic conditions. Mumford should be thus understood to claim that 'x has a *conventional disposition D*' entails the counterfactual conditional that if the ideal conditions obtain, then if x were to undergo the *D*-stimulus, then it would exhibit the *D*-manifestation but 'x has a categorical property' entails no such counterfactual conditional.

With CONV at his disposal, however, Choi (2008, 831-839) suggests a number of ways to improve Mumford's proposal. Choi points out that Mumford's counterfactual conditionals are better formulated in terms of counterfactual conditionals with conjunctive antecedents rather than nested counterfactual conditionals – for example, 'If x were put in water in the ideal conditions it would dissolve' is preferable to 'If the ideal conditions obtain, if x were put in water it would dissolve'; and that the concept of ideal conditions should be replaced by the concept of ordinary conditions; and finally that Mumford's counterfactual conditionals are better taken to be equivalent to dispositional ascriptions.

These suggestions are jointly conducive to the following proposition:

- (1) A property *P* is a conventional disposition iff there are two event types, *P*-stimulus and *P*-manifestation, such that x has *P* at *t* iff, if x were to undergo the *P*-stimulus at *t* under the

ordinary conditions for  $P$  then it would exhibit the  $P$ -manifestation.

Here note that the counterfactual conditional occurring in (1) is exactly the same as the one occurring in the analysans of CONV. Therefore, we may restate (1) by saying that  $P$  is a conventional disposition iff there are two event types,  $P$ -stimulus and  $P$ -manifestation, such that  $x$  has  $P$  at  $t$  iff  $x$  satisfies the analysans of CONV for  $P$ . On this construal, fragility is a conventional disposition because the following biconditional is true:  $x$  is fragile at time  $t$  iff it would break if struck at  $t$  under the ordinary conditions for fragility.

Obviously, (1) does not distinguish dispositional properties in general from categorical properties: it discriminates conventional dispositional properties from other kinds of property. But it is an easy step to generalize (1) to make a criterion for distinguishing dispositional properties in general from categorical properties. The basic idea is that, given that SCA encompasses not only conventional dispositions but also unconventional dispositions, we will be able to make such a criterion by employing the counterfactual conditional occurring in the analysans of SCA in the same manner as the counterfactual conditional occurring in the analysans of CONV is employed in (1):

(2) A property  $P$  is dispositional iff there are two event types,  $P$ -specific stimulating circumstance and manifestation, such that  $x$  has  $P$  at  $t$  iff, if  $x$  were situated in the  $P$ -specific stimulating circumstance at  $t$ , then  $x$  would exhibit the  $P$ -specific manifestation.

It is evident that (2) demarcates not merely conventional dispositions but also dispositions in general from categorical properties. For example, the disposition to dissolve in response to being put in water – call it  $Dw$  –, which is not a conventional disposition, is dispositional according to (2). As we have seen, SCA tells us that  $x$  has  $Dw$  at  $t$  iff, if  $x$  were put in water at  $t$  it would dissolve. Assuming that the  $Dw$ -specific stimulating circumstance is one where  $x$  is put in water and the  $Dw$ -specific manifestation is the event of dissolving, therefore,  $x$  has  $Dw$  at  $t$  iff, if  $x$  were situated in the  $Dw$ -specific stimulating circumstance at  $t$ , then  $x$  would exhibit the  $Dw$ -specific manifestation. As a consequence, given (2),  $Dw$  is a dispositional property, which is a desirable result.

(2) has no difficulty in handling conventional dispositions, either. On CONV,  $x$  has a conventional disposition  $D$  at time  $t$  iff, if  $x$  were to undergo the  $D$ -stimulus at  $t$  under the ordinary conditions for  $D$ , then  $x$  would exhibit the  $D$ -manifestation. Let us suppose the  $D$ -specific stimulating circumstance to be a circumstance where  $x$  undergoes the  $D$ -stimulus under the ordinary conditions for  $D$  and the  $D$ -specific manifestation to be the  $D$ -manifestation. We then have the result that  $x$  has a conventional disposition  $D$  at  $t$  iff, if  $x$  were situated in the  $D$ -specific stimulating circumstance at  $t$ , then  $x$  would exhibit the  $D$ -specific manifestation. This shows that  $D$  is qualified to be dispositional by (2). Arguably, however, this is not the case for what are known as categorical properties. It may be plausibly claimed that triangularity is not a dispositional property since there are no two event types,  $T_s$  and  $T_m$ , such that  $x$  is triangular at  $t$  iff, if  $x$  were situated in  $T_s$  at  $t$ , then  $x$  would exhibit  $T_m$ .

To make a long story short, by (2), properties intuitively considered as dispositional come out dispositional and properties intuitively considered as categorical come out categorical. Indeed, I propose (2) as a natural and highly defensible formulation of our intuition behind the dispositional/categorical distinction. If so, it will be fascinating to evaluate it in the light of the considerations that come to the fore in the ongoing debates regarding the dispositional/categorical distinction.

Hugh Mellor (1974), however, has leveled an important objection to the dispositional/categorical distinction which any defenders of the distinction must address. To avoid unnecessary complexities, let us slightly modify Mellor's objection like this: 'x is triangular' is equivalent to the non-trivial counterfactual conditional 'If x's corners were correctly counted under the ordinary conditions for triangularity the result would be three' although the property of triangularity is one of the most likely categorical properties.<sup>5</sup> It is

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<sup>5</sup> The counterfactual conditional considered by Mellor himself is 'If x's corners were correctly counted the result would be three'. But we can set up an analogous case to Martin's fink case that shows that this counterfactual conditional is not entailed by 'x is triangular': an object  $x$  is triangular but if its corners were about to be counted a sorcerer would step in and change its shape so that the result of

evident that Mellor's objection implies that triangularity comes out dispositional by (2): when we suppose the triangularity-specific stimulating circumstance to be one where  $x$ 's corners are correctly counted under the ordinary conditions for triangularity and the triangularity-specific manifestation to be the event of giving the result of three,  $x$  is triangular at  $t$  iff, if  $x$  were situated in the triangularity-specific stimulating circumstance at  $t$ , then  $x$  would exhibit the triangularity-specific manifestation.

By way of rebutting Mellor's objection, however, Choi (2005, 498-499) invites us to imagine a tricky triangle  $Tt$  which has exactly the same intrinsic properties as an ordinary triangle except that it has an intrinsic property that would cause it to become rectangular if its corners were correctly counted under the ordinary conditions for triangularity. When its corners are not counted,  $Tt$  is triangular. It has three angles. But as soon as its corners are counted, straight away it changes its shape. So, it becomes rectangular. Note that the ordinary conditions for triangularity are exclusively pertinent to  $Tt$ 's extrinsic properties. That being the case, if  $Tt$ 's corners were correctly counted under the ordinary conditions for triangularity, straight away  $Tt$  would become rectangular in virtue of one of its own intrinsic properties. Therefore,  $Tt$  does not satisfy Mellor's counterfactual conditional that if  $x$ 's corners were correctly counted under the ordinary conditions for triangularity the result would be three. But it is intuitively evident that  $Tt$  is triangular. As such, ' $Tt$  is triangular' is not equivalent to Mellor's counterfactual conditional. Choi's thought experiment, as a consequence, tells us that Mellor's objection to (2) fails.

But is it impossible to envision an analogous case for dispositional properties? Choi (2005,

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counting would not be three. Note that I have added the qualifying phrase 'under the ordinary conditions for triangularity' to Mellor's counterfactual conditional. Since the sorcerer is ruled out from the ordinary conditions for triangularity, the case at issue does not engender difficulty for the idea that 'if  $x$ 's corners were correctly counted under the ordinary conditions for triangularity the result would be three' is equivalent to ' $x$  is triangular'. I thus believe that the addition of the qualifying phrase has the effect of making Mellor's observation more defensible than otherwise.

499) considers an object *St* that only differs from a fragile glass in that the first, not the second, has an intrinsic property that would cause it to lose *M* if it were struck under the ordinary conditions for fragility, where *M* is the type of microstructure *St* has in common with the fragile glass.<sup>6</sup> Let's say *M* is a certain type of molecular bonding structure. *St* does not satisfy the counterfactual conditional that it would break if struck under the ordinary conditions for fragility. But is *St* not supposed to have almost all intrinsic properties in common with a fragile glass, most importantly, the microstructure *M*? This might lead one to think that *St* is fragile, which entails that even the ascription of fragility is not equivalent to the corresponding counterfactual conditional that it would break if struck under the ordinary conditions for fragility. What follows from this is that fragility, one of the most likely dispositional properties, is not a dispositional property according to (2).

Choi (2005, 599-602) contends though that this is not the correct way of looking at the matter, saying that what is more reasonable to say in the case of *St* is that *St* is not fragile, and rightly so. Below we will discuss Choi's arguments for this contention in great details. Assuming that Choi's contention is well-taken, *St* is not a counterexample to the claim that the ascription of fragility is equivalent to 'x would break if struck under the ordinary conditions for fragility'. Hence, (2) is not in trouble with *St*.

Toby Handfield (2008) gives a different and insightful angle to Choi's thought experiment in terms of the possibility of intrinsically finkable dispositions. It will be useful to define a few technical terms for the sake of presentation. Suppose that we can meaningfully speak of the characteristic stimulus and manifestation of a (dispositional or categorical) property *P*. For instance, the characteristic stimulus and manifestation of the property of being poisonous is the event of being ingested and the event of killing, respectively. It might be thought, similarly, that the characteristic stimulus and manifestation of triangularity are the event of its corners's being correctly counted and the event of eliciting the outcome of three. A property *P* is said to

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<sup>6</sup> It will become clear in Section 5 why I put in place the qualifying phrase 'under the ordinary conditions for fragility'.

be finkable when it is possible that a bearer of  $P$  would not exhibit its characteristic manifestation upon being subject to its characteristic stimulus  $S$  because if  $x$  were to undergo  $S$  then one of its properties  $Q$ , be it intrinsic or extrinsic, would join with  $S$  to remove  $P$ .<sup>7</sup> When the property  $Q$  is an intrinsic property of  $x$ , we can say that  $P$  is intrinsically finkable and  $Q$  is an intrinsic fink to  $P$ . With these technical terms, Handfield suggests that the core idea of Choi's thought experiment is that dispositional properties are intrinsically unfinkable but categorical properties are intrinsically finkable.

There is no doubt that at least some dispositional properties are extrinsically finkable<sup>8</sup>. In fact, Martin's fink case can be understood to show that fragility is extrinsically finkable. The glass is obviously fragile; but if it were struck it would not exhibit the characteristic manifestation of fragility since its fragility would be instantly removed by the sorcerer. It is to be observed that the presence of the sorcerer is not one of the glass's intrinsic properties. That is, the sorcerer is extrinsic to the glass, in which sense this case exemplifies that fragility may be extrinsically finked. We can easily get a similar result for categorical properties, namely, that categorical properties may be extrinsically finked.

There is a glaring contrast between dispositional and categorical properties, however, when we look at intrinsic finks, which is illustrated by Choi's thought experiment. The object  $Tt$  is triangular but it also has an intrinsic property that would cause  $Tt$  to lose its triangularity if its

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<sup>7</sup> My use of the term 'fink' is different from the one hinted by Martin (1994, 2-3) himself. When Martin's use of the term 'electro-fink' is naturally generalized, we obtain the following definition. When  $x$  is supposed not to have disposition  $D$ , a fink is a factor that, should the characteristic stimulus of  $D$  obtain, would instantly make it the case that  $x$  has  $D$ ; and when  $y$  is supposed to have disposition  $D$ , a reverse fink is a factor that, should the characteristic stimulus of disposition  $D$  obtain, would instantly make it the case that  $x$  does not have  $D$ . It is clear that this is reverse to my definition of 'fink'. For some odd reasons, these days it is common to use the term 'fink' in accordance with my definition. See (Clarke 2007, 1) and (Handfield 2008, 298).

<sup>8</sup> I agree with Handfield (2008) that not all dispositions are extrinsically finkable. See also ft 14.

corners were counted under the ordinary conditions for triangularity. This intrinsic property serves as an intrinsic fink to triangularity, which demonstrates that triangularity is intrinsically finkable. The case of *St*, however, shows that we cannot devise an analogous case for dispositional properties, which permits the conclusion that fragility is not intrinsically finkable. In short, the lesson Handfield draws from Choi's thought experiment is that there is a striking difference between dispositional and categorical properties with respect to the possibility of being intrinsically finked.

It is remarkable that we can say almost the same thing about the possibility of what may be called intrinsic reverse fink. Let us say that a property *P* is reverse-finkable when it is possible that a non-bearer of *P* would exhibit its characteristic manifestation upon being subject to its characteristic stimulus *S* because if *x* were to undergo *S* then one of its properties *Q*, be it intrinsic or extrinsic, would join with *S* to cause *x* to acquire *P*. When *Q* is an intrinsic property of *x*, then *P* is said to be intrinsically reverse-finkable. Strictly speaking, there is no obvious logical relationship between the thesis that categorical properties, but not dispositional properties, are intrinsically finkable, on the one hand, and the thesis that categorical properties, but not dispositional properties, are intrinsically reverse-finkable, on the other. Very probably, I believe though, they come and go together. On the position that triangularity is intrinsically finkable, it is sensible to hold further that it is intrinsically reverse-finkable as well. Similarly, given that it is held that fragility is intrinsically unfinkable, it is a natural move to hold further that fragility is also intrinsically reverse-unfinkable. In fact, I maintain that the philosophers like Choi and Handfield who claim that categorical properties are intrinsically finkable but dispositional properties are not will be willing to go further to make a stronger claim that categorical properties are both intrinsically finkable and reverse-finkable but dispositional properties are neither intrinsically finkable nor intrinsically reverse-finkable.

It is evident that, given that the ordinary conditions for a conventional disposition *D* are restricted to extrinsic properties, CONV entails that *D* is neither intrinsically finkable nor intrinsically unfinkable. Indeed I maintain that it is a natural, if not logical, consequence of (2) that dispositional properties in general are neither intrinsically finkable nor intrinsic unfinkable.

On this view, the possibility that a categorical property  $P$  is intrinsically finked or reverse finked falsifies that 'x has  $P$ ' is equivalent to the corresponding non-trivial counterfactual conditional. Meanwhile, the idea that 'x has a dispositional property  $P$ ' is equivalent to the corresponding non-trivial counterfactual conditional is not in similar trouble since  $P$  is neither intrinsically finkable nor intrinsically reverse finkable. The success of (2) thus at least in part hinges upon the issue of the possibility of intrinsic finks or reverse finks. Once this is seen, it will be highly instructive to peruse arguments pro and con the possibility of intrinsic finks and reverse finks, which will be the main task for the rest of this paper. One aspect of significance of this investigation thus lies in the fact that it may possibly facilitate our endeavour to evaluate (2) with the aim of finding a much-sought-after criterion for the dispositional/categorical distinction.<sup>9</sup>

### 3. Choi's conditional and nomic duplicate tests

Choi has been severely assailed by some philosophers like Randolph Clark (2008) who takes issue with, among other things, the thesis that dispositional properties are intrinsically unfinkable. He adamantly insists that, just like categorical properties, dispositional properties are intrinsically finkable in the sense that, even for a dispositional property  $P$ , it is possible that  $x$  has  $P$  but it would not exhibit the characteristic manifestation of  $P$  upon being subject to the characteristic stimulus of  $P$  because it also has an intrinsic property that would cause it to lose  $P$  if it were subject to the characteristic stimulus of  $P$ . On Clarke's position, for example, the object  $St$  described in the last section is indeed fragile but it would not break if struck since its fragility is finked by one of its intrinsic properties.

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<sup>9</sup> Of course, this is not the only aspect of its significance. As I said in the beginning of this paper, it bears on the issues of Kripke's skeptical argument and the principle of alternate possibilities, as can be seen from (Handfield and Bird 2008), (Cohen and Handfield 2008), and (Fara 2008).

What does Choi say in support of the idea that dispositions are unsusceptible to intrinsic finks? Let us return to the case of *St* that is meant to establish that dispositions are intrinsically unfinkable. The pivotal step is to deny that *St* is fragile on the ground that *St* has an intrinsic property that would cause it to lose *M* if it were struck under the ordinary conditions for fragility. Once this is seen, it is important to closely examine Choi's argument in favour of the claim that *St* is not fragile. Choi's argument flows from what he calls the conditional and nomic duplicate tests for dispositional ascriptions (Choi 2005, 499-500). They are meant to capture two principles that guide our intuitive judgments concerning dispositional ascriptions. The conditional test is that we are inclined to believe that *x* has a disposition *D* whenever it is a true counterfactual conditional that if *x* were to undergo the characteristic stimulus of *D* it would exhibit the characteristic manifestation of *D*; and that we are inclined to believe that *x* does not have a disposition *D* whenever it is a false counterfactual conditional that if *x* were to undergo the characteristic stimulus of *D* it would exhibit the characteristic manifestation of *D*.<sup>10</sup> And the nomic duplicate test, which overrides the conditional test in case of conflict between the two tests, is that, for most ordinary dispositions, when it is clear enough to us that a nomic duplicate of *x*, namely, a perfect duplicate of *x* subject to the same laws of nature as *x*, has *D*, we are inclined to believe that *x* has *D*; and that when it is clear enough to us that a nomic duplicate of *x* does not have *D*, we are inclined to believe that *x* does not have *D*.

Choi contends that the two tests jointly recommend that *St*, which is supposed to differ from a fragile glass only over the intrinsic property that would cause it to lose the microstructure *M* if it were struck, is not fragile. Plainly there is no nomic duplicate of *St* that is clearly fragile. So, the nomic duplicate test does not recommend that *St* is fragile. But the conditional test rules

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<sup>10</sup> It is to be noticed that the counterfactual conditional under consideration does not include the qualifying phrase 'under the ordinary conditions for *D*'. That is, it is 'if *x* were to undergo the characteristic stimulus of *D* it would exhibit the characteristic manifestation of *D*', as opposed to 'if *x* were to undergo the characteristic stimulus of *D* under the ordinary conditions for *D* it would exhibit the characteristic manifestation of *D*'. This observation is importantly relevant to the subsequent discussion.

that  $St$  is not fragile, as can be seen from the fact that if  $St$  were struck, straight way it would lose the microstructure  $M$  as a result of the operation of one of intrinsic properties; and thereby it would not break. As a consequence, the conditional and nomic duplicate tests jointly advise that  $St$  is not fragile. This is Choi's supporting argument that  $St$  is not fragile.

But the two tests are defective on more than one count. First of all, I agree with Handfield (2008, 301-2) that the two tests are not general enough to deal with extrinsic dispositions as the nomic duplicate test is predicated upon the assumption that the disposition at issue is a nomically intrinsic disposition. Therefore they, even if successful, do not help us make correct judgments regarding the ascriptions of extrinsic dispositions. But as Choi (2005, 500 fn 11) himself acknowledges, McKittrick has convincingly demonstrated that not all dispositions are nomically intrinsic dispositions. This is the first defect of Choi's two tests. Secondly, the outcome of the nomic duplicate test depends upon whether or not it is intuitively clear that a nomic duplicate of  $x$  has the disposition  $D$ . But there is an ineluctable ambiguity in the question of whether something is intuitively clear or not. What is intuitively clear to someone may not be intuitively clear to someone else. This indicates that we cannot derive conclusive rulings about dispositional ascriptions from the two tests.

What is worse, there is a devastating objection to the tests which is due to Clarke (2008, 4) who claims that the two tests are misleading in some cases. Let's imagine that a nomic duplicate  $St^*$  of the object  $St$  is watched by a wizard who would instantly eliminate the  $M$ -removing intrinsic property if it is about to be struck. It is evident that Choi wishes to say that  $St^*$  is not fragile: after all, the difference between  $St^*$  and  $St$  does not seem to be relevant to whether they are fragile or not. Choi's two tests, though, jointly advise that  $St^*$  is fragile. If struck,  $St^*$  would retain its microstructure thanks to the interference by the wizard and hence it would break. If so, the conditional test says that  $St^*$  is fragile. Meanwhile, there is no clear-cut case where a nomic duplicate of  $St^*$  is not fragile. If so, the nomic duplicate test does not recommend that  $St^*$  is not fragile. That said, the two tests jointly advise that  $St^*$  is fragile, which is clearly not what Choi wants to say about  $St^*$ .

On the broadly accepted assumption that fragility is a nomically intrinsic disposition, this

predicament can be put in terms of contradiction. As already expounded, the two tests rule that *St* is not fragile. It has come to light, though, that *St\** is fragile according to the two tests. However, since *St* and *St\** are supposed to be nomic duplicates of each other, they must have all nomically intrinsic dispositions in common. This brings us to the conclusion that, on the assumption that fragility is a nomically intrinsic disposition, either both of *S* and *S\** are fragile or neither of them are fragile. But this is contradicted by the ruling of the two tests. This being the case, the conditional and nomic duplicate tests result in a contradiction. This is enough to convince us that there is something wrong with Choi's conditional and nomic duplicate tests. As stated above, Choi's justification for the claim that intrinsic finks are impossible for dispositions is grounded in the conditional and nomic duplicate tests. From this I come to the conclusion that Choi's justification is unsuccessful.

In view of Handfield's and Clarke's objections, I take it, the conditional and nomic duplicate tests are a bad idea. Recall that they are proposed as guidance for our commonsensical judgments regarding dispositional ascriptions. This guidance is expected to work as an expedient and improvised stopgap for an adequate semantic account of dispositional ascriptions. Given that SCA, an account of dispositional ascriptions defended by Choi, is now ready to hand, it is perfectly fine to leave behind the two tests, even more so because they have proved flawed. Further, once SCA is assumed to guide dispositional judgments, I will argue below, all the problems with the conditional and nomic duplicate tests are easily resolved.

Since we will mostly deal with conventional dispositions in the subsequent discussion, for the sake of convenience, let us confine our attention to CONV. CONV tells that *St* is not fragile since *St* would not break if struck under the ordinary conditions for fragility. This means that CONV suits Choi's purpose of ascertaining that *St* is not fragile, offering a solid argument for the thought that fragility cannot be intrinsically finked. What is more, once CONV is taken on board, all the problems with the conditional and nomic duplicate tests can be evaded. First, there is no question that CONV encompasses not only intrinsic dispositions but also extrinsic dispositions. For instance, it gives the following analysis of weight that is generally thought of

as an extrinsic disposition:  $x$  has the weight of  $n$  pounds iff, if it were to be put on a properly constructed scale under the ordinary conditions for weight it would elicit a scale reading of  $n$  pounds. Therefore, Handfield's charge against the conditional and nomic duplicate tests is not applicable to CONV. Secondly, it is clear that CONV is not afflicted with ambiguity of the sort that afflicts the nomic duplicate test. CONV surely has ambiguity of the sort all counterfactual conditionals have but no ambiguity of the unruly sort that can be found in the question of whether something is intuitively clear or not.

Finally, once we put CONV in place of the conditional and nomic duplicate tests we can deflect Clarke's objection that the joint recommendation of the conditional and nomic duplicate tests for the case of  $St^*$  is that it is fragile but this recommendation is not in accordance with Choi's intention. What would happen if  $St^*$  were struck under the ordinary conditions for fragility? Note first that the ordinary conditions for fragility exclude the wizard who would eliminate the  $M$ -removing intrinsic property if  $St^*$  is about to be struck: no such wizard can be found under extrinsic conditions that obtain in most cases that we come across where striking causes breaking. This being the case, if  $St^*$  were struck under the ordinary conditions for fragility, it would be struck in the absence of the wizard; thereby it would keep the  $M$ -removing intrinsic property which would cause  $St^*$  to lose  $M$ ; as a consequence,  $St^*$  would not break. If so, CONV rules that  $St^*$  is not fragile, which is exactly what Choi wishes to say about  $St^*$ . Having said that, I suggest, by assuming CONV as guidance for dispositional judgments, we can fend off Clarke's case of  $St^*$ .

What is more, with reference to CONV we can tell what is right and what is wrong about the conditional and nomic duplicate tests. In most cases we ascribe a disposition  $D$  to  $x$ ,  $x$  is situated under the ordinary conditions for  $D$ , in which cases, the outcome of the conditional test coincides with the outcome of CONV. This is why the conditional test is successful in guiding dispositional judgments in most cases of dispositional ascription. It is not always the case, however, that  $x$  is situated under the ordinary conditions for  $D$ , in which case the conditional test goes wrong. This is glaringly illustrated by Martin's fink example where a glass is fragile but would not break if struck owing to the sorcerer's protective interference. The

conditional test recommends that the glass is not fragile, while CONV rules that it is fragile. This reveals what goes wrong about the conditional test.

The same can be said about the nomic duplicate test. I take it that the nomic duplicate test is correct insofar as it says that, assuming that *D* is a nomically intrinsic disposition and that there exists a nomic duplicate *y* of *x* such that it is intuitively clear that *y* has *D*, we are inclined to think that *x* has *D*, too. The rub is how to determine whether or not it is intuitively clear that *y* has *D*. In this regard, Choi (2005, 501) says:

But we are familiar with ascribing fragility to objects that would break if struck under ordinary circumstances. Therefore *it is clear to us* that an object is fragile only if it would break under ordinary circumstances. (Here I do not mean to make the controversial claim that an object is fragile only if it would break under ordinary circumstances. What I mean is that *it is clear to us* that an object is fragile only if it would break under ordinary circumstances, which I think is much more acceptable.)

To put it in my terms, Choi's claim is that, only if *x* would break if struck under the ordinary conditions for fragility, *x* can be deemed as a clear-cut instance of fragility.

With CONV on board, we can explain why the nomic duplicate test is correct when it is correct. To see this, suppose that it is intuitively clear in Choi's sense that a nomic duplicate *y* of *x* is fragile, from which it follows that *y* would break if struck under the ordinary conditions for fragility. On this supposition, though, CONV entails that *y* is fragile. Assuming further that fragility is a nomically intrinsic disposition, therefore, it follows that *x*, which is one of *y*'s nomic duplicates, is fragile as well. In short, on the assumption that fragility is a nomically intrinsic disposition and that there is a nomic duplicate *y* of *x* such that *y*'s being fragile is intuitively clear enough in Choi's sense, we are warranted in inferring that *x* is fragile as well. In this sense, CONV enables us to see what is right about the nomic duplicate test.<sup>11</sup>

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<sup>11</sup> We can get the same result for a case where it is intuitively clear in Choi's sense that a nomic duplicate *y* of *x* is not fragile.

The nomic duplicate test along with the conditional test, however, is not always successful in delivering correct rulings. In the first place, there is nothing problematic about those cases where the nomic duplicate test, which has upper hand over the conditional test, issues a univocal recommendation about whether or not  $x$  has a disposition  $D$ , which has been confirmed in the last paragraph. The difficulty with the conditional and nomic duplicate tests arises from the cases where the nomic duplicate test yields no unequivocal recommendation about whether  $x$  has a disposition  $D$  or not. Choi seems to hold that in these cases the conditional test always gives correct rulings. But this is not true, which is illustrated by Clarke's example of  $St^*$ . It is to be noted that  $St^*$  would exhibit the characteristic manifestation of fragility owing to the extraordinary condition of being accompanied by the wizard who would eliminate the  $M$ -removing intrinsic disposition if struck. The conditional test therefore yields a misleading recommendation for  $St^*$ , that it is fragile. But this recommendation is not overturned by the nomic duplicate test with the result that the joint recommendation of the two tests is wrong: there are no clear-cut cases where a nomic duplicate of  $St^*$  is not fragile. The nomic duplicate test, thus, is not always operative in rectifying the deficiency of the conditional test. This is why the two tests go wrong when they go wrong.

To recap, it is to be admitted that the conditional and nomic duplicate tests, which Choi proposes as instructing dispositional judgments, are not always trustworthy. With this in mind, I have proposed CONV as a guiding principle that takes the place of the conditional and nomic duplicate tests and argued that CONV can be used to underpin the claim that an object that is alleged to have an intrinsic fink to a disposition  $D$  in fact does not have  $D$  to begin with. Further, it has come to light that CONV is not afflicted with the problems that plague the conditional and nomic duplicate tests. Finally, it gives an account of what is right and what is wrong about the two tests. Choi's justification for the thesis that dispositions are intrinsically unfinkable thus has been remedied by means of CONV.

One cautionary remark is in order. Until now I have assume CONV as given. But the case of  $St$  may well be viewed as a counterexample to CONV: it might be thought that  $St$  is fragile but it does not satisfy the analysans of CONV for fragility. Indeed all cases that are alleged to involve

intrinsic finks to dispositions might be presented as counterexamples to CONV. It might be charged, then, that I beg the question against critics of CONV when I use CONV to ascertain that *St* is not fragile. I concede that this charge would have a point should CONV be on shaky ground, especially should CONV owe all of its justification to cases like the case of *St* that are alleged to involve intrinsic finks to dispositions. But this is not true. Quite oppositely, I agree with Choi (2008, 839) that we have overwhelming evidence for CONV independent of those cases. Then we would better accept CONV as given and use it to verify that *St* is not fragile. This is even more so given that we have no clear intuition regarding whether *St* is fragile or not, independently of CONV. What is more, in the upcoming sections I will set out additional grounds for thinking that *St* is not fragile, which does not rely upon CONV. So, I hold that although I employ CONV to justify the claim that *St* is not fragile, this is not a blatant fallacy.

#### **4. Examples: John, aluminum, lactose, and brick**

In the last section I have fixed Choi's supporting argument for the thesis that dispositions are insusceptible to intrinsic finks by substituting CONV for the two tests that are intended to guide intuitive judgments concerning dispositional ascriptions but have proved faulty. But more work is to be done to quell any doubt about the thesis. To be specific, I will have to debunk many different types of reasoning leading to the possibility of intrinsic finks to dispositions, especially those performed by Clarke, to which the sections to come will be devoted. Clarke constructs quite a few assiduous and trenchant arguments in an attempt to demonstrate that dispositions can be intrinsically finked. And I take it we can learn a lot of lessons about the nature of dispositions from appraising Clarke's arguments carefully.

First of all, Clarke (2008, 2) attempts to convince us by contending that the following description makes perfect sense. John is physically strong, being able to lift heavy things without aids. But he obtains a strange intrinsic property *P<sub>j</sub>* that would sap his physical strength should he touch heavy things. Despite the introduction of *P<sub>j</sub>*, in this case, John can be said to

continue to be physically strong. The introduction of  $P_j$  makes it the case that he loses his physical strength when his hands touch a heavy thing, not that he is not physically strong from the beginning. Thus understood, John's strange intrinsic property  $P_j$  functions as an intrinsic fink to the dispositional property of physical strength. Clarke insists that this description of John is meaningful, which corroborates the possibility of finking dispositions intrinsically.

It is remarkable that if Clarke's description of John is correct, then it will have dreadful repercussions on the line of thought I have been developing so far. In the first place, obviously, it serves as a counterexample to CONV that was assumed in the last section: John, a physically strong person, does not satisfy the analysis of CHOI for physical strength. What is worse, Clarke's description of John poses a serious threat to my proposal regarding the dispositional/categorical distinction, namely, (2), as can be seen from the fact that (2) owes much of its justification to CONV.

But I do not share Clarke's intuition. The true description of John, I take it, is: 'John has a certain type of body constitution which is typical of physically strong people. But he also has a strange intrinsic property  $P_j$  which would change his body constitution should his hands touch a heavy thing, as a result of which he would fail to lift the heavy thing. John is not physically strong. For, after all, he would not be able to lift a heavy thing unless he is aided by something like gloves which are not necessarily available to him.' Under this description of John, what is the case is not that John has the dispositional property of physical strength but does not manifest it due to an intrinsic fink but that John does not have the dispositional property of physical strength to begin with. It is evident that, under my description of John, Clarke's case of John does not corroborate the possibility of intrinsically finkable dispositions. Further, it presents no challenge to CONV since CONV is not in trouble with the fact that John does not satisfy its analysis for physical strength: John is not physically strong after all. I maintain that my description of John makes as good sense as Clarke's description. To say the least, Clarke has given no forceful reason to favour his description over my description.

It is worth mentioning that Clarke (2008, 2) also discusses the example of shy but prescient chameleon that might be taken to suit Clarke's purpose better:

Being green, it [the chameleon] has a disposition to appear green to standard viewers in standard circumstances. (Perhaps being green just is having this disposition, or perhaps in virtue of being green a thing has this disposition; either view suffices for the example.) But because of its shyness and its prescience, both intrinsic properties of the chameleon, it knows if it is about to be placed in viewing conditions, and immediately blushes bright red. It thus loses its disposition to appear green in just the circumstances which commonly trigger a manifestation of that disposition.

Is this case of chameleon more effective in bearing out the possibility of finking dispositions intrinsically than the case of John? I think not. Keep in mind that the chameleon's disposition under discussion is its disposition to appear green to standard viewers in standard circumstances, not the property of being green. Further, it is not at all obvious that it is disposed to appear green to standard viewers in standard circumstances – on the supposition that in virtue of its intrinsic properties the chameleon is disposed to brush bright red if placed in viewing conditions. After all, even if it were to be situated under standard circumstances it would never appear green to standard viewers without fortuitous interferences. So, I take it, when we bring our attention to the chameleon's disposition to appear green to standard viewers in standard circumstances the case of chameleon is unsuccessful in demonstrating that dispositions are intrinsically finkable.

What if we focus on the property of being green which is considered as a property in virtue of which, in many cases, something is disposed to appear green to standard viewers in standard circumstances? Let us say that the chameleon's being green is identified with its skin's having a certain surface property. As such, it sounds more sensible to say that the chameleon is indeed green despite its shyness and prescience, which seems to indicate that the case of chameleon is a real case of intrinsic fink to disposition. On this construal, however, it may be plausibly argued that the property of being green is not a dispositional property. Identified with a surface property of the chameleon, the property of being green manifests itself actually or occurrently without an external stimulus, in which sense it does not imply power or potentiality. Once this is recognized, it is not unreasonable at all to suppose that the property

of being green is a categorical property.<sup>12</sup> If so, the case of chameleon exemplifies that a categorical property, not a dispositional property, is intrinsically finked. Even Choi, however, does not contest the thesis that categorical properties can be intrinsically finked.

In summary, the case of the chameleon, as it stands, spells no trouble for the position that dispositional properties cannot be intrinsically finked. Quite oppositely, I claim, there are a great deal of everyday examples that are favourable to Choi's thesis that dispositions are intrinsically unfinkable. Before proceeding, I wish to point out that, in the present context, there is no need to distinguish between dispositional finks and antidotes, where a dispositional antidote is a factor that would prevent the manifestation of a disposition not by eliminating it but by foiling the process from the stimulus.<sup>13</sup> Clarke, affirming the possibility of intrinsically finkable dispositions, is thus committed to the claim that dispositions may be co-instantiated with their intrinsic antidotes: it is possible that a bearer of a disposition *D* does not manifest *D* conditional upon being subject to the characteristic stimulus of *D* because one of its own intrinsic properties, acting as a dispositional antidote to *D*, prevents it. I maintain, though, that we can make strong case against the possibility of intrinsic antidotes to dispositions when we take account of realistic cases carefully.

Is aluminum disposed to rust? I think no folk would say that it is. The very reason why aircrafts, which are constantly exposed to rain, sleet, snow, and so on, do not easily rust is that most of their skin is made of aluminum. It seems, though, that aluminum has a type of microstructure in virtue of which things are disposed to rust. Rust is basically a process of oxidation where metal reacts with oxygen in the presence of water or air moisture. Aluminum is one of the metals that are highly prone to undergo oxidation by rapidly reacting with oxygen. But it does not rust when exposed to air moisture. Why? Because if a piece of

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<sup>12</sup> For the issue of how to understand categorical properties as opposed to dispositional properties, see (Mumford 1998, 20-22 ) and (Choi 2005, 502)

<sup>13</sup> Dispositional antidotes – also known as maskers – have been discussed by Bird (1998) and Johnston (1992).

aluminum were exposed to air moisture the initial oxidation would yield a thick and dense skin of aluminum oxide, a material that would actually protect the aluminum from further oxidation. Without such a material, the process of oxidation would go on, which will eventually bring about rusting. This is exactly what happens in most things that are disposed to rust, say, unalloyed iron.

I take it, however, it is a natural move for those who allow for the possibility of intrinsic antidotes to dispositions to say that a piece of aluminum is indeed disposed to rust. To see this, let us imagine a piece of unalloyed iron that is protected by a sorcerer who would bring into existence a thick and dense skin of iron oxide instantly if it were exposed to air moisture. Its only relevant difference from the aluminum is that the layer of iron oxide is formed by a process that is not intrinsic but extrinsic to it, the process of the sorcerer's interference. There is no doubt that this iron is disposed to rust. But it does not manifest this disposition because of the operation of an extrinsic antidote, the sorcerer.

The first observation to make is that it seems that the aluminum possesses the microstructural property which is responsible for the iron's disposition to rust, the atomic structure in virtue of which it has a low ionization potential, and, as a result of this, it is very reactive to oxygen. It is to be observed, secondly, that the causal role that the sorcerer plays in impeding the rusting of the iron is precisely the same as the causal role that the aluminum's intrinsic property – call it *Pa* – in virtue of which it is disposed to yield a thick and dense surface layer of oxidation plays in impeding the rusting of the aluminum. They both create a surface layer that hinders further oxidation in the respective material. These two observations lend support to the view that, like the sorcerer, *Pa* functions as an antidote to the disposition to rust. To be sure, though, the sorcerer is an extrinsic property of the iron, whilst *Pa* is an intrinsic property of the aluminum. But this is not to be a significant factor for those like Clarke who are happy to approve of the possibility of intrinsic finks or antidotes to dispositions. So I think it is natural for Clarke to suggest that *Pa* is an intrinsic antidote to the aluminum's disposition to rust. In short, Clarke, who embraces the possibility of intrinsic finks or antidotes to dispositions, is left with the view that, like the iron, the aluminum too is disposed to rust;

yet, unlike the iron, the aluminum does not rust because one of its intrinsic properties *Pa* serves as an antidote which would prevent rusting if it were exposed to water. I believe that this is the description of the aluminum Clarke will probably offer. And, if it is correct, then it will vindicate the claim that dispositions are susceptible to intrinsic finks or antidotes.

But I do not accept it. As I said before, I insist, we have the unshakable conviction that the aluminum is not disposed to rust. A philosophical account of dispositions must do justice to our intuitive understanding of them such that we have to approve of this conviction that the aluminum is not disposed to rust unless we are under forceful theoretical pressure to overturn it. I will argue below, however, that there is no such theoretical pressure. *A fortiori*, this conviction conforms to the ruling given by the account of dispositions assumed here, CONV: CONV rules that the aluminum is not disposed to rust (in response to being exposed to air moisture under the relevant ordinary conditions) since it would not rust if exposed to air moisture under the relevant ordinary conditions. In fact, I take it, the central consideration we take in treating aluminum and iron differently with respect to the phenomenon of rusting is that they would behave differently if exposed to air moisture under the relevant ordinary conditions. Once it is accepted that the aluminum is not disposed to rust, it is to be denied that the indicated intrinsic property of the aluminum, *Pa*, serves as an intrinsic antidote to the disposition to rust. I thus claim that the description of the aluminum in the spirit of Clarke does not stand to reason.

Once we start to look for realistic cases like aluminum that are troublesome for Clarke, they are abundant. Let us take Handfield and Bird's (2008, 291) example of lactose. Lactose is contained in milk and causes discomfort to lactose intolerant people who are not able to produce the enzyme lactase naturally that metabolizes it. Joon is lactose intolerant meaning that he is disposed to suffer discomfort if he ingests lactose contained in milk. Suppose that Joon drinks milk together with a capsule of lactase enzyme. In this case the lactose contained in the milk will be metabolized by the lactase enzyme he consumes with the milk, with the result that he averts discomfort. This situation can be reasonably described by saying that Joon has the disposition of being lactase intolerant but this disposition does not manifest by the

interference of an extrinsic antidote, the capsule of lactase enzyme he consumes with the milk. Joon is contrasted with Jim whose digestive system is supposed to be precisely the same as Joon's except that he naturally gives out the enzyme lactase and so is able to metabolize the ingested lactose without taking any artificial medication. Let  $Pd$  be an intrinsic property of Jim in virtue of which the enzyme lactase is naturally produced in his body. Here it is important to note that  $Pd$  plays exactly the same causal role of metabolizing lactose in Jim's body as the capsule of enzyme lactase taken by Joon does in Joon's body. Once this is noticed, it seems sensible to propose that, like Joon, Jim too is lactose intolerant but his lactose intolerance does not manifest by the operation of an antidote,  $Pd$ . Surely, Joon metabolizes lactose by a process that is extrinsic to Joon's body but Jim does by a process that is intrinsic to Jim's body. For Clarke who allows for the possibility of intrinsic finks or antidotes to dispositions, however, this makes no substantial difference. In view of this consideration, it is a natural move for Clarke to suggest that, like Joon, Jim is lactose intolerant but he does not manifest it by the interference of an intrinsic antidote,  $Pd$ . I, however, concur with Handfield and Bird who insist that Jim is not lactose intolerant. The very reason why we feel a strong pull to think that Jim is not lactose intolerant is that, in Jim's digestive system, the lactase enzyme is produced by a process that is intrinsic to the system. From this Handfield and Bird (2008, 291) come to the conclusion that 'as regards both fink and antidote cases if  $S$  contains an intrinsic fink or antidote to some disposition  $D$ , then  $S$  does not possess  $D$ ', and rightly so. Handfield and Bird's case of lactose intolerance, once again, is problematic by Clarke's light.

A flying bird is not disposed to fall down. But it has the weight of  $n$  pounds in virtue of which things are disposed to fall down. Does this mean that the flying bird is disposed to fall down but it does not fall down thanks to an intrinsic antidote, that is, its wings? No. There is no doubt that the bird is not disposed to fall down. This implies that what must be said about it is that it is not disposed to fall down despite the fact that it has the weight of  $n$  pounds which seems to be responsible for the disposition to fall down in things. This being the case, the bird's ability to fly is not an intrinsic antidote to the disposition to fall down since it is not disposed to fall down to begin with. This result, though, is not what Clarke is pressed to say

about a flying bird.<sup>14</sup>

Until now I have thoroughly examined quite a few realistic cases where *x* has a property seemingly sufficient for the possession of a disposition but does not manifest it because of the immediate operation of another intrinsic property of it. They are some of the most likely cases that Clarke would say instantiate an intrinsic fink or antidote to a disposition. But I have argued that this is at odds with our normal way of thinking and that there is no rational motive to think otherwise. I thus claim that not only the artificial examples devised by Clarke himself do not force his position but also a great deal of realistic examples, in fact, force the opposite position.<sup>15</sup>

In personal communication and his recent paper, Clarke retorts that his position does not commit him to a uniform verdict about the cases discussed so far. While he holds onto the possibility of intrinsic finks or antidotes to dispositions, he maintains that he is not under pressure to say that aluminum is disposed to rust or Jim is lactose intolerant or the flying bird

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<sup>14</sup> The factor that would prevent the bird from falling down should it be released from a height is not entirely intrinsic to the bird. The prevention is caused jointly by the working of the wings and the presence of air flow underneath the wings. But the air flow is extrinsic to the bird. If so, even the opponents of intrinsic antidotes to dispositions might have to say that the flying bird is indeed disposed to fall down but this disposition is masked by the presence of air flow underneath the wings. This is so especially when they maintain that it is always possible to mask dispositions extrinsically. As I said before, however, it is hard to deny that the flying bird is not disposed to fall down. The case of the flying bird thus poses a problem not only for the proponents of intrinsic antidotes to dispositions but also for some opponents of them. I believe that this case brings into focus the fact that not only all intrinsic finks to dispositions are impossible but also some extrinsic finks to dispositions are impossible. Unfortunately, this issue, which is discussed by Handfield (2008), is beyond the scope of this paper. I thank Randolph Clarke for pressing this point.

<sup>15</sup> It is remarkable that, in his most recent paper 'Opposing Powers', Clarke puts forward some new cases that appear to instantiate intrinsic finks or antidotes. But I insist that they fail to serve Clarke's goal. To make the length of this paper manageable, unfortunately, arguing for this shall be reserved for another occasion.

is disposed to fall down. On his view, there are some cases where  $x$  instantiates a disposition along with an intrinsic fink or antidote. One of them is the case of John where, according to Clarke's description, John is physically strong but his physical strength is finked by one of his intrinsic properties. However, there are others like the case of aluminum where the disposition goes away when we posit an intrinsic property that would prevent its characteristic manifestation should its characteristic stimulus obtain.

But this response has no force unless a clear distinction can be drawn between the two types of case. And I am skeptical of the existence of such a distinction. For, once it is accepted that it is possible to fink or mask dispositions by intrinsic properties, it is not reasonable to say that when we suppose that an object  $x$ , which is initially supposed to have a disposition  $D$ , also has an intrinsic property that plays exactly the same causal role as a dispositional fink or antidote, that is, the role of blocking the manifestation of  $D$ , it loses  $D$ . What is reasonable to say is that, even in that case,  $x$  retains  $D$ ; and that its failure to manifest  $D$  is to be explained by saying that the intrinsic property acts as an intrinsic fink or antidote to  $D$ . In fact, Clarke (forthcoming) concedes that he does not know how to draw a line between cases where dispositions can be co-instantiated alongside intrinsic finks or antidotes and cases where dispositions cannot be co-instantiated alongside intrinsic finks or antidotes. That said, I conclude that Clarke's hand-waving response to the realistic cases I have been through are not quite successful.

Michael Fara (2008), who, like Clarke, opposes the thesis that dispositions are not intrinsically finkable, suggests that the important question is not whether a fink or antidote is intrinsic or not to a putative bearer of a disposition but whether it is permanent or not. By way of substantiating this suggestion, he argues that dispositions can be finked or masked by temporary properties, be they intrinsic or not; and that they can be finked or masked by permanent properties, be they intrinsic or not. For instance, he discusses an example where he is disposed to get a stomachache from eating the lemons but this disposition fails to manifest by the operation of the milk he consumes along with the lemons. The milk, once consumed, is intrinsic to Fara's body. Nonetheless, Fara maintains, it acts as an antidote to the disposition to get a stomachache from eating the lemons, citing the fact that the milk is not a permanent but

temporary property of his body. From this Fara comes to the conclusion that the disposition to get a stomachache can be masked by intrinsic properties as long as they are temporary properties.

First, I wish to point out that Fara has not fully fulfilled the onus to clarify the notion of permanency at work here. In an attempt to clarify it, admittedly, Fara indicates that his notion of permanency differs from the ordinary temporal notion of permanency: the gravel covering a driveway is not a permanent feature of the driveway in Fara's sense of permanency although it is in the ordinary sense of permanency. Despite Fara's effort, however, he has not provided a positive characterization of the notion of permanency, which is necessary to evaluate Fara's proposal properly.

Whatever the precise notion of permanency may be, however, I do not find Fara's proposal attractive. In the first place, Handfield and Bird (2008, 292) have provided a careful and adequate analysis of Fara's example mentioned above, according to which it does not verify that dispositions can be masked by intrinsic but temporary properties. I find Handfield and Bird's analysis compelling although I will not recount it here.

What is more, I wish to put forward one thought experiment that I think reveals a further weakness of Fara's position. Fara says 'It does seem wrong to think that an object could possess a disposition or ability that would be masked by the simultaneous possession of a long-standing, permanent, intrinsic property of that object. It would be absurd, for example, to say that a brick is disposed to roll downhill, but that this disposition is permanently masked by the brick's rectangular shape.' He thus denies the possibility that the manifestation of a disposition is permanently blocked by an intrinsic property of its bearer. Let us now modify the example such that the brick has an ever-changing shape that alternates between sphericity and cubicity. To be precise, suppose that it was spherical yesterday; but it changes its shape and becomes cubic today; and it will change its shape again and become spherical tomorrow. On this supposition, I believe, it is beyond question that the shape of the brick is not one of its permanent properties, no matter what Fara says to clarify the precise notion of permanency. The shape of the brick is thus one of its temporary intrinsic properties. If so, Fara's proposal

entails that, today, the brick is in fact disposed to roll downhill but this disposition is masked by its cubic shape. I think though that it is absurd to say so. Recall that Fara acknowledges that it is absurd to say that a permanently cubic brick is disposed to roll downhill but this disposition is masked by its cubic shape. But I take it no difference at all with respect to whether or not  $x$  is disposed to roll downhill is made by the fact that one of them is permanently cubic but the other is cubic only today. Therefore, it is not sensible to hold that one of them is disposed to roll downhill but the other is not. I thus maintain that, whatever the exact notion of permanency may be, Fara's proposal is not agreeable. In short, Fara fails to demonstrate that an intrinsic antidote to a disposition is possible when it is a temporary property.

In light of this I conclude that, all things considered, the opponents like Clarke and Fara of the thesis that dispositions are insusceptible to intrinsic finks or antidotes have offered no convincing counterexamples to it; and that, on the contrary, a careful inspection on a number of realistic examples reveal that our intuition goes along with the thesis in question. The upshot is, therefore, that the opponents have no choice but to accept that dispositions do not permit intrinsic finks or antidotes unless there are forceful theoretical reasons to turn it down.

## **5. Intrinsic and extrinsic finks**

In the last section I discussed what our intuition tells us about concrete examples that Clarke and Fara might wish to say exemplify an intrinsic fink or antidote to a disposition. It has turned out that the intuition takes sides with the thesis that dispositions are not intrinsically finkable. The intuition does not always reign supreme, though. It does not especially when we have acquired powerful theoretical ground for going against it. In fact, Clarke attempts to provide such theoretical ground that could potentially overturn it. One such attempt is to invoke what Clarke (2008, 5) calls 'constitution test', which is claimed to force the possibility of intrinsically finkable dispositions. I hold, however, that it does not serve Clarke's purpose of upholding the possibility of intrinsically finkable dispositions. To make this paper manageable, unfortunately,

I must discuss it elsewhere.

In addition to the constitution test, Clarke presents a variety of theoretical critiques of Choi's thesis that dispositions are intrinsically unfinkable. In this section, I will examine some of Clarke's most prominent critiques of Choi's thesis, to be specific, three intriguing lines of reasoning of the fundamentally same type leading to the possibility of finking dispositions intrinsically that can be isolated in (Clarke 2008). They all bring into focus the symmetry of intrinsic and extrinsic finks to dispositions.

Let us first get to grips with the simplest one among those lines of reasoning. One might go about grounding the impossibility of finking fragility intrinsically by noticing that, in a case alleged to display an intrinsic fink to fragility, say, in the case of  $St$ ,  $x$  would be caused to lose the microstructural property  $M$  by one of  $x$ 's own intrinsic properties as opposed to one of  $x$ 's extrinsic properties. But Clarke (2008, 5) points out that we can envisage a case of extrinsic fink where  $x$  would be caused to lose a given disposition by one of its intrinsic properties: the wizard stands ready to remove the microstructural property  $M$  of a glass  $G$  since he loves its exquisite design, in which case the wizard is an extrinsic fink to  $G$ 's fragility although there is a good sense in which  $G$  would lose its fragility due to its own intrinsic property, namely, its design. If so, those who attempt to base the impossibility of intrinsically finkable dispositions on the fact that  $x$  would be caused to lose the microstructural property  $M$  by one of  $x$ 's own intrinsic properties are pressed to say that, just like intrinsically finkable dispositions, extrinsically finkable dispositions are conceptually impossible. But it is evident that dispositions are extrinsically finkable, which means that the attempt to establish the impossibility of intrinsically finkable dispositions fails. And so Clarke (2008, 5) says 'There seems to be no principled way of accepting finks while ruling out intrinsic finks'.

Here I concur with Clarke that we cannot plausibly ground the non-fragility of  $St$  on the fact that  $St$  would be caused to lose  $M$  instantly by one of its intrinsic properties (as opposed to one of its extrinsic properties) should it be struck. But the parallelism between intrinsic and extrinsic finks noticed by Clarke does not license us to claim that there is no principled way of accepting finks while ruling out intrinsic finks. There is a striking disparity between the case of

*G* and the case of *St*. *G* would break if struck under the ordinary conditions for fragility where nothing like the wizard is operative. CONV thus rules that *G* is fragile, which makes it the case that *G*'s fragility is extrinsically finked by the wizard. The same does not apply to *St*, though. Unlike *G*, *St* would not break if struck under the ordinary conditions for fragility, which entails that *St* does not come out fragile by CONV. And so, it is not the case that *St*'s fragility is finked by one of its intrinsic properties since it is not fragile in the first place. The fact I bring to bear on the impossibility of finking fragility intrinsically is not that *St* would be caused to lose *M* instantly by one of its intrinsic properties (as opposed to one of its extrinsic properties) should it be struck but that it would lose *M* instantly if struck under the ordinary conditions for fragility. This is not open to Clarke's criticism based on the parallelism between the case of *St* and the case of *G*.

Clarke's (2008, 5) second argument that highlights the analogy between intrinsic and extrinsic finks goes this way:

One could say about the strong man that he does not have a power to lift-heavy-objects, but only a power to lift-heavy-objects-while-wearing-gloves. But equally, one could say that the glass [which is guarded by the wizard] does not have a disposition to break-when-struck, but only a disposition to break-when-struck-in-the-absence-of-a-wizard.

There is no need to make this move in the first case if it is unnecessary in the second.

This is a highly condensed argument that is in need of careful reconstruction. It is obvious that Clarke's argument is intended to support the possibility of intrinsically finkable dispositions by having recourse to the symmetrical consideration between intrinsic and extrinsic finks. But it is not entirely clear exactly how to make sense of it.

The best sense I can make of it is that, in this passage, Clarke slams an attempt to underpin the claim that John is not physically strong by suggesting that a pragmatic explanation can be given for our erroneous inclination to think that he is strong despite its falsity. More specifically, one might perform the following reasoning:

Given that John has a strange intrinsic property *P<sub>j</sub>*, he is not disposed to lift-heavy-things.

And, the dispositional property of physical strength is identical to the disposition to lift-heavy-things. Hence it follows that John is not physically strong. It is to be admitted, though, that there is some degree of temptation to believe that John is physically strong. However, we can explain away this misleading temptation by citing the fact that, although John is not disposed to lift-heavy-things, he is disposed to lift-heavy-things-while-wearing-gloves. There is little doubt that John is disposed to lift-heavy-things-while-wearing-gloves. When the dispositional property of physical strength is mistakenly identified with the disposition to lift-heavy-things-while-wearing-gloves, therefore, this entails that John is physically strong. This is why we are tempted to think that John is physically strong. But this temptation is unfounded since the dispositional property of physical strength, which is identical to the disposition to lift-heavy-things, is distinct from the disposition to lift-heavy-things-while-wearing-gloves.

This reasoning, if correct, would establish that John is not physically strong; and it would also give us an error theory about why there is a misleading tendency to believe that John is physically strong despite its falsity. It will therefore lend support to the position that the dispositional property of physical strength is not finkable by his intrinsic properties.

Up against this reasoning, Clarke points out that the same line of reasoning can be carried out with respect to extrinsic finks, leading to the preposterous conclusion that dispositions are extrinsically unfinkable. That is, once one carries out the first reasoning regarding John, she is pressurized to carry out the following reasoning:

Given that the glass *G* is guarded by the wizard it is not disposed to break-when-struck. This means that *G* is not fragile since fragility is to be identified with the disposition to break-when-struck. On this view, there is no extrinsic fink to fragility because *G* is not fragile, to begin with. Surely, there is a certain degree of inclination to think that *G* is fragile. But we can provide an error theory regarding why we are pulled into thinking so by citing the fact that the glass has the disposition to break-when-struck-in-the-absence-of-a-wizard. We are so pulled because we mistakenly identify fragility with the disposition to break-when-struck-in-the-absence-of-a-wizard. But fragility is identical to

the disposition to break-when-struck, not the disposition to break-when-struck-in-the-absence-of-a-wizard. Therefore, from the fact that the glass has the disposition to break-when-struck-in-the-absence-of-a-wizard, it does not follow that it is fragile.

This second reasoning, if correct, would bring us to the conclusion that the glass *G* is not fragile; and it would also give an error theory about why we are inclined to think that *G* is fragile. Clarke seems to claim that this reasoning is in parallelism with the first reasoning about John described in the previous paragraph.

I will provide a detailed analysis of this second reasoning shortly. But such an analysis is not required to realize that the second reasoning is fundamentally invalid. *Inter alia*, it is undeniable that the glass *G* is fragile. If so, we need no error theory about our inclination to think that *G* is fragile, for *G*'s being fragile suffices to explain it. In view of this, it is easy to tell that the second reasoning regarding the glass *G* is misconducted. As already stated, however, Clarke assumes that if one performs the first reasoning about John, she is pressed to perform the second reasoning about *G*. Then it follows, Clarke maintains, that the first reasoning about John too has been misconducted. On Clarke's view, John is indeed physically strong. *A fortiori*, this suffices to explain our inclination to think that John is physically strong. Once again, therefore, no error theory is needed. This is why, I think, Clarke says 'There is no need to make this move in the first case if it is unnecessary in the second'. Exploiting the analogy between intrinsic and extrinsic finks, Clarke thus remonstrates one attempt to bear out the claim that John is not physically strong. This is my rational reconstruction of Clarke's argument presented in the passage quoted above.

Clarke's argument so reconstructed, however, is a *non sequitur*. Let us first go over the case of the glass *G*. The first step for analyzing it is to make clear what Clarke means by such dispositions as the disposition to break-when-struck or the disposition to break-when-struck-in-the-absence-of-a-wizard. Clarke is not explicit about it. But we can plausibly take the disposition to break-when-struck to be the disposition whose stimulating circumstance is one where *x* is struck and its manifestation is the event of breaking. So understood, it is just what I mean by the locution 'the disposition to break in response to being struck'. The same goes for

the disposition to break-when-struck-in-the-absence-of-a-wizard: it is just what I mean by the locution 'the disposition to break in response to being struck in the absence of a wizard'. Taken this way, it is wrong to identify fragility with the disposition to break-when-struck. For, as already noted, I agree with Choi (2008; forthcoming) who proposes that fragility must be defined as the disposition to break in response to being struck under the ordinary conditions for fragility where the wizard is absent, which should be distinguished from the disposition to break in response to being struck. With this clarification at our disposal, we can now see exactly what is wrong with the second reasoning about the glass *G*.

I said before that I would assume SCA as an adequate semantic account of dispositions. In the following, therefore, I will invoke SCA to decide what dispositions the glass *G* has. SCA rules that the glass *G*, which is guarded by the wizard, is not disposed to break in response to being struck. From this, however, it does not follow that *x* is not fragile. For, fragility is not identical to the disposition to break in response to being struck. We have seen that fragility is to be identified with the disposition to break in response to being struck under the ordinary conditions for fragility where the wizard is absent. Note that if *G* were struck in the absence of the wizard, it would break. According to SCA, this entails that *G* is disposed to break in response to being struck under the ordinary conditions for fragility where the wizard is absent, which is to say that *G* is fragile. To summarize in Clarke's words, *G* is not disposed to break-when-struck; still, however, it is fragile because it is disposed to break-when-struck-in-the-absence-of-a-wizard.

This brings to light where the second reasoning goes wrong. Its central step is to assume that fragility is identical to the disposition to break in response to being struck, not the disposition to break in response to being struck under the ordinary conditions for fragility where there is no wizard. But this assumption gets the wrong end of the stick: fragility is identical to the disposition to break in response to being struck under the ordinary conditions for fragility where there is no wizard, not the disposition to break in response to being struck. Since there is no disagreement about the glass *G*'s being disposed to break in response to being struck under the ordinary conditions for fragility where there is no wizard, it follows that *G* is fragile.

Then we can safely say that *G* is fragile but it does not manifest its fragility owing to the operation of an extrinsic fink, the wizard. If so, no error theory about our temptation to say that *G* is fragile is in need, for there is no error to be explained away.

In short, the second reasoning about the glass *G* has proved faulty. As I said before, Clarke claims that the first reasoning and second reasoning stand or fall together. Hence he will say that the first reasoning about John is faulty, too. But I disagree. I will argue below that there is a striking difference between the first reasoning and the second reasoning, which makes it the case that they do not stand or fall together. Admittedly, not every detail of the first reasoning is correct: there is one small fly in the ointment. I insist though that the first reasoning about John is broadly right.

For one thing, given that John is supposed to have the strange intrinsic property *P<sub>j</sub>*, SCA rules that John is not disposed to lift heavy things in response to his touching them in an attempt to lift them. But this result does not license us to infer that John is not physically strong since the dispositional property of physical strength is not to be identified with the disposition to lift heavy things in response to one's touching them in an attempt to lift them. Here it is important to realize that the property of physical strength is a conventional disposition. With this in mind, I propose that it is to be defined as the disposition to lift heavy things in response to one's touching them in an attempt to lift them under the ordinary conditions for physical strength. Note that the ordinary conditions for physical strength include that one does not wear gloves. I have characterized the ordinary conditions for a disposition *D* as extrinsic conditions that obtain in the vast majority of cases that the possessors of the dispositional concept of *D* encounter where the *D*-stimulus leads to the *D*-manifestation. And, people do not wear gloves in the massive preponderance of cases that we come across where they lift heavy things. This being the case, if John touches heavy things under the ordinary conditions for physical strength, he will touch them without gloves on. But if John were to touch heavy things without gloves on in an attempt to lift them, he would not succeed in his attempt since one of his own intrinsic properties *P<sub>j</sub>* would interfere to change his body constitution. SCA thus rules that John is not disposed to lift heavy things in response to his touching them in an attempt to lift them

under the ordinary conditions for physical strength. From this I come to the conclusion that John is not physically strong.

To my mind, this verdict on John does not go against our intuition. I presume, though, that, for some, the opposite intuition prevails, which I cannot simply dismiss. Here comes the demand for an error theory. I need to construct a pragmatic explanation of why some are mistakenly inclined to think that John is physically strong. It might be suggested that this can be done by referring to the disposition to lift heavy things while wearing gloves. Why do some of us feel the pull to believe that John is physically strong? The suggestion is that they incorrectly identify physical strength with the disposition to lift heavy things while wearing gloves; yet, it is hardly disputable that John is indeed disposed to lift heavy things while wearing gloves; from this they are led to the thought that John is physically strong. I think that there is a lot to be improved about this suggestion and so I do not find it entirely satisfactory. Nonetheless, however, it takes us at least some way to explaining why some of us tend to believe that John is physically strong.

Further, the suggestion at issue makes clear that this tendency is unfounded. For, the dispositional property of physical strength is not identical to the disposition to lift heavy things while wearing gloves. I said earlier that it is to be identified with the disposition to lift heavy things under the ordinary conditions for physical strength where one does not wear gloves, which entails that, according to SCA, John is not physically strong. It is thus wrong to believe that John is physically strong. As a result, we have an error theory explaining away the erroneous tendency towards believing that John is physically strong. And so I conclude that, unlike the case of *G*, an error theory may be useful in the case of John.

To summarize in Clarke's words, John is not disposed to lift-heavy-things-while-not-wearing-gloves, which entails that he is not physically strong. Meanwhile, John is indeed disposed to lift-heavy-things-while-wearing-gloves, which explains the erroneous inclination to think that John is physically strong. This lends itself to the thought that the first reasoning about John is generally on the right track. As I said earlier, there is a small bug, though. In the first reasoning about John, his not being physical strength is derived from his not being disposed to lift-heavy-

things; and this move is justified by the assumption that physical strength is identical to the disposition to lift-heavy-things. By 'the disposition to lift-heavy-things', I take it, Clarke means the disposition to lift heavy things in response to one's touching them in an attempt to lift them. On this construal, however, the assumption is false. I claimed earlier that physical strength is to be defined as the disposition to lift heavy things in response to one's touching them in an attempt to lift them under the ordinary conditions for physical strength, not as the disposition to lift heavy things in response to one's touching them in an attempt to lift them. On my view, therefore, John's not being physically strong is not derivable from his not being disposed to lift heavy things in response to one's touching them in an attempt to lift them. Fortunately, however, this does not ravage the entire reasoning, for John is indeed not physically strong despite the fact that it is not derivable that way. Note that John is not disposed to lift heavy things under the ordinary conditions for physical strength where he does not wear gloves. Given that physical strength is identical to the disposition to lift heavy things under the ordinary conditions for physical strength, this means that John is not physically strong. The conclusion this brings us to is that, although the first reasoning about John uses an invalid justification for John's not being physically strong, this does not ruin it completely because John is indeed not physically strong.

It will be illuminating to make clear what makes this difference between the case of *G* and the case of John. Since the ordinary conditions for fragility include the absence of a wizard, SCA rules that *G* is disposed to break under the ordinary conditions for fragility. As a consequence, *G* is fragile, which renders unnecessary an error theory of the inclination to think that *G* is fragile. Meanwhile, the ordinary conditions for physical strength include the absence of gloves, and hence SCA rules that John is not disposed to lift heavy things under the ordinary conditions for physical strength. As a consequence, John is physically strong, which creates the demand for an error theory of the incorrect intuition that John is physically strong. From this I conclude that there is a critical difference between the case of *G* and the case of John. If so, it is false that one's performing the first reasoning about the case of John commits her to performing the second reasoning about the case of *G*, which invalidates Clarke's second

argument for the possibility of finking dispositions intrinsically that rests on the symmetrical consideration between intrinsic and extrinsic finks.

Thus far I debunked Clarke's two arguments for the thesis that, just like categorical properties, dispositional properties are intrinsically finkable. Let me now discuss Clarke's third argument that, like the first two arguments, exploits the analogy between intrinsic and extrinsic finks. Clarke (2008, 5-6) says:

One might think that even if dispositions can be finkish, they will be manifested given their respective stimuli, provided the circumstances are ideal (cf. Mumford, p. 88). (The presence of a fink might be taken to render the circumstances other than ideal.) But if one allows that the circumstances of a given disposition can include other properties with which the disposition is co-instantiated, the thought does not rule out intrinsic finks.

In this passage Clarke takes issue with the view I have advanced so far or something close by. But I have laid out my view in terms of ordinary conditions for a disposition, whilst Clarke refers to Mumford's theory of ideal conditions or circumstances. On this matter, I agree with Choi (2008, 833-834) who insists that, for many reasons, the notion of ordinary conditions is preferable to the notion of ideal conditions. In what follows, thus, I will reconstrue Clarke's point as referring to the notion of ordinary conditions rather than the notion of ideal conditions.

I have strived to bear out the impossibility of finking dispositions intrinsically by picking up on the observation that, in what are typically described as cases of extrinsic finks, the disposition *D* would manifest if *x* were subjected to the characteristic stimulus of *D* under the ordinary conditions for *D*; but that this is not true in what are typically described as cases of intrinsic finks. The glass would not break if struck under the current conditions where it is guarded by the wizard. But it would break if struck under the ordinary conditions for fragility where it is not guarded by the wizard. This, along with CONV, is the main ground for my contention that the glass is fragile despite the presence of an extrinsic fink, i.e., the wizard. But Clarke counters

by claiming that we can make the same move for the case of John, or so I interpret. Admittedly, if John were to attempt to lift a heavy thing under the current conditions where he has the strange intrinsic property  $P_j$ , he would fail. But if John were to attempt to lift a heavy thing under the 'ordinary' conditions where he does not have  $P_j$ , he would not fail. Therefore, it seems that, according to CONV, John is physically strong. John's physical strength, though, does not manifest because it is finked by  $P_j$ . This is what I think a natural interpretation of Clarke's passage quoted above, which I present as Clarke's third argument that takes advantage of the parallelism between intrinsic and extrinsic finks.

Choi's characterization of ordinary conditions for a conventional disposition  $D$ , which I have employed here, requires that they be extrinsic to the putative bearer of  $D$ .<sup>16</sup> For example, when we speak of  $x$ 's being fragile, the ordinary conditions for fragility are confined to  $x$ 's extrinsic properties. But the requirement at issue will be rejected by Clarke who wishes to rule out from the ordinary conditions for  $D$   $x$ 's intrinsic properties that, on his view, act as intrinsic finks or antidotes to  $D$ . On my interpretation, for instance, Clarke suggests that the ordinary conditions for physical strength include that John does not have the intrinsic property  $P_j$ . But Clarke's suggestion is acceptable only if we can provide a tenable account of ordinary conditions that satisfies his need. But I will argue in what follows that, on the most natural accounts of ordinary conditions for  $D$  by Clarke's light, the counterfactual conditional associated with the ascription of  $D$  comes out trivially true. This will be conducive to the conclusion that no account of ordinary conditions that serves Clarke's goal is readily forthcoming. Like the preceding two arguments, thus, Clarke's third argument fails to do what it is intended to do.

The pivotal question is how to specify the notion of ordinary conditions for a conventional disposition  $D$  from Clarke's perspective in a way that does not render trivial the resulting counterfactual conditional 'x would exhibit the characteristic manifestation of  $D$  if x were

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<sup>16</sup> By saying that his ideal conditions are background conditions, Mumford (1998, 88) also hints that they are pertinent to  $x$ 's extrinsic properties only.

subjected to the characteristic stimulus of  $D$  under the ordinary conditions for  $D'$ . As I said before, Clarke's intention is to rule out from the ordinary conditions for  $D$   $x$ 's intrinsic properties that, on his view, act as intrinsic finks or antidotes to  $D$ . Given that the very possibility of intrinsic finks or antidotes to dispositions is in dispute, however, this intention must be phrased in neutral terms that are acceptable to both friends and foes of intrinsically finkable dispositions.

One idea for Clarke is that  $P_j$  must be ruled out from the ordinary conditions for physical strength since  $P_j$  is not ordinary among physically strong people – to put it another way, since it is not typical of physically strong people. This idea can be formulated by saying that, under the 'ordinary' conditions for physical strength, John would have those and only those properties, be they intrinsic or extrinsic, that most physically strong people have. Unfortunately, however, this idea is a non-starter. For, it is the dispositional property of physical strength that is one of the properties that most physically strong people have. For every object  $x$ , thus,  $x$  would be physically strong under such ordinary conditions, in which case it is trivially true that if  $x$  were to attempt to lift a heavy thing under the ordinary conditions for physical strength,  $x$  would succeed. Once this is seen, there is no hope for the idea under consideration.

Recall that in an effort to articulate Choi's specification of the notion of ordinary conditions, I proposed in Section 1 that the ordinary conditions for a conventional disposition  $D$  are extrinsic conditions that obtain in the massive preponderance of cases that the possessors of the dispositional concept of  $D$  encounter where the  $D$ -stimulus leads to the  $D$ -manifestation. It is to be noted that the intrinsic property  $P_j$  is not instantiated in most cases that we come across where people lift heavy things. From this it might be suggested that, when the requirement that the ordinary conditions be extrinsic is dropped from my proposal, we obtain an account of ordinary conditions that suits Clarke's purpose: the ordinary conditions for a conventional disposition  $D$  are conditions, be they intrinsic or extrinsic, that obtain in the massive preponderance of cases that the possessors of the dispositional concept of  $D$  encounter where the  $D$ -stimulus leads to the  $D$ -manifestation. So construed, John would not

have  $P_j$  under the ordinary conditions for physical strength, which entails that John would lift heavy things should he attempt under the ordinary conditions for physical strength.

I take it, though, that once again the problem of trivialization hangs around. It is to be noticed that, as a matter of fact, one of the conditions that hold in the massive preponderance of cases that we encounter where people lift heavy things is that they are physically strong. In most cases where we observe people lifting heavy things, they are physically strong. Assuming that the ordinary conditions for physical strength include that  $x$  is physically strong, however, it is trivially true that  $x$  would lift heavy things should  $x$  attempt under the ordinary conditions for physical strength. This pernicious result jeopardizes the whole idea of associating dispositional ascriptions with counterfactual conditionals.

We can obviate this bad consequence by requiring that the ordinary conditions for  $D$  be confined to  $x$ 's extrinsic properties. With this requirement in place,  $x$  is not invariably physically strong under the ordinary conditions for physical strength. This means that it is not trivially true that  $x$  would lift heavy things should  $x$  attempt under the ordinary conditions for physical strength. Hence the tenability of my proposal regarding how to specify the notion of ordinary conditions heavily rests upon the requirement that the ordinary conditions for  $D$  be extrinsic to the putative bearer of  $D$ . That said, the idea of dropping it from my proposal does not help Clarke.

Admittedly Clarke might choose to put forward an entirely different type of account of ordinary conditions from the accounts I have considered so far. I deeply doubt, though, that there is any viable alternative account of ordinary conditions that suits Clarke's purpose. As I said earlier, Clarke wishes to rule out from the ordinary conditions for  $D$   $x$ 's intrinsic properties that, on his view, act as intrinsic finks or antidotes to  $D$ . On Clarke's position, for instance, it is plausible to suppose that a square brick is indeed disposed to roll downhill but it does not manifest this disposition because its rectangular shape functions as an intrinsic antidote.<sup>17</sup> If

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<sup>17</sup> By 'x is disposed to roll downhill' I mean to attribute to  $x$  a conventional disposition whose specification must include reference to the relevant ordinary conditions.

so, Clarke will wish to rule out its rectangular shape from the ordinary conditions for the disposition in question. In fact, any possible intrinsic properties that would prevent the brick's rolling downhill can be viewed as intrinsic finks or antidotes. Therefore, on Clarke's view, they must be excluded from the ordinary conditions for the disposition to roll downhill. More generally, Clarke is pressed to say that any possible intrinsic properties that would prevent the manifestation of *D* must be ruled out from the ordinary conditions for *D*. But this move will make the associated counterfactual conditional trivially true.

To see this, let us consider an arbitrary object that is not disposed to roll downhill. It would not roll downhill if released on a tilted slope. But some of its intrinsic properties like its mass, geometrical shape, and surface property that would be responsible for its not rolling downhill may be thought of as intrinsic finks or antidotes as they would inhibit the manifestation of the disposition to roll downhill. Then Clarke is forced to say that they must be banned from the ordinary conditions for the disposition at issue, which brings us to the conclusion that if it were released on a tilted slope under the relevant ordinary conditions it would have no intrinsic properties at all that would prevent its rolling downhill; thereby it would roll downhill. The upshot is that the counterfactual conditional associated with 'x is disposed to roll downhill' is satisfied by an arbitrary object that is supposed not to be disposed to roll downhill. This lends plausibility to the thought that if Clarke is to provide an account of ordinary conditions that fits the bill, he ends up rendering trivially true the counterfactual conditionals associated with dispositional ascriptions. Thus Clarke's suggestion that the ordinary conditions for *D* are pertinent to *x*'s intrinsic properties as well as *x*'s extrinsic properties wreaks havoc with the widely held idea of associating dispositional ascriptions with counterfactual conditionals. This paves a solid ground for the conclusion that we ought to jettison Clarke's suggestion and restrict the ordinary conditions for *D* to *x*'s extrinsic properties.

Once such a restriction is in place, we can head off Clarke's objection to Choi. According to CONV, the glass guarded by the wizard comes out fragile, which makes it the case that the glass's fragility is extrinsically finked by the presence of the wizard. Conversely, John does not come out physically strong by CONV, and hence it is not the case that John's physical strength

is finked by his strange intrinsic property  $P_j$ . Once this is seen, we can draw a principled line between cases that involve extrinsic finks on the one hand and cases that are claimed to involve intrinsic finks but do not actually involve them on the other hand by referring to relevant counterfactual conditionals, which quashes Clarke's third tactic for backing the possibility of finking dispositions intrinsically that rests upon the parallelism between intrinsic and extrinsic finks.

## 6. A concluding remark

It will be instructive to recap what I have done thus far. The goal of this paper is to give a better formulation of the dispositional/categorical distinction in terms of counterfactual conditionals and defend from Clarke's and Fara's penetrating criticisms one of its consequences, that is, Choi's thesis that dispositions are unsusceptible to intrinsic finks. To this end, I first refined Choi's account of dispositions, on the basis of which I drove a wedge between dispositional and categorical properties in terms of counterfactual conditionals. In addition, Choi's account of dispositions played a fundamental role in my defense of Choi's thesis. First, with Choi's account of dispositions at my disposal, I was able to give a better reason for believing that an object that is claimed to have a disposition  $D$  and an intrinsic fink to  $D$ , in fact, has neither of them. Second, from the viewpoint of Choi's account of dispositions, I was able to tell where Choi's conditional and nomic duplicate tests went right and went wrong. Next, I took on Clarke's objections to Choi's thesis that dispositions cannot be intrinsically finked. For one thing, I argued not only that Clarke's claim that there are artificial cases involving an intrinsically finkable disposition is wrong but also that, quite oppositely, realistic cases are in keeping with the thesis that dispositions are not intrinsically finkable. For another, I undermined Clarke's theoretical grounds for rejecting Choi's thesis that stems from the symmetrical consideration between intrinsic and extrinsic properties.

I have thus ameliorated the dispositional/categorical distinction in terms of counterfactual

conditionals, remedied Choi's arguments for one of its consequences, namely, Choi's thesis that dispositions cannot be intrinsically finked, and defended Choi's thesis from challenging criticisms. This will place the dispositional/categorical distinction, as formulated by means of (2), on a firmer and more secure footing than thought before. Still, however, there are a few more things to be done to properly wind up my defense of Choi's thesis. In particular, I need to discuss what is wrong with Clarke's argument that his constitution test necessitates the possibility of intrinsically finkable dispositions, which will be a task for another paper.

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