

On Two Recent Defenses of The Simple Conditional Analysis of Disposition-Ascriptions

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I. Introduction

A wide variety of reductionist projects in philosophy appeals to dispositions to do the work. Dispositional analyzes can be found in the areas of inquiry on mental states (Ryle, 1949), meaning (Kripke, 1982; Quine 1960), colors (McGinn, 1983), values (Lewis, 1989), goodness (Smith, 1994), properties (Shoemaker, 1980), and so on. That the dispositional explanatory strategy is broadly adopted by reductionists is not hard to explain. A traditional view, which is rooted in empiricism (see Bricke, 1975) and continues to be shared by contemporary philosophers, such as Carnap (1936), Goodman (1955), Quine (1960), Mackie (1973), Prior (1985), and many others, analyzes a disposition-ascription "x has D" in terms of a simple counterfactual conditional "If x were p, x would q", which mentions only a pair of possible events. If this analysis were correct, dispositional properties would be themselves reduced to mere possibilities of events, and thus rendered ideal to figure in reductive accounts of other properties regarded as captivating and problematic.

Things are not so straightforward, however. Counterexamples to the simple conditional analysis have been offered by Martin (1994), Smith (1977), Johnston (1992), and Bird (1998), and are extensively considered as decisive in refuting the analysis in question. The nature of dispositions is consequently not as simple as the conditional analysis seems to suggest. Viewing a disposition as a robust property and not merely as possible events is an expected result. However, exactly how to characterize it has become a major challenge and focus of heated debates for contemporary metaphysicians (e.g., Armstrong, Martin, & Place, 1996; Mumford, 1998; etc.).

Against this realist trend, recently two philosophers stand out—Choi (2006) and Gundersen (2002)—in defending the simple conditional analysis of dispositions (see Fara, 2006). They make a glaring claim that various counterexamples fail to refute the simple conditional analysis. Their attempts to reduce disposition-ascriptions to conditionals, if successful, would lead to "the ontological consequence that there are no dispositions *qua* properties" (Mumford, 1998). Given the significance of this issue, the aim of this paper is to examine whether these two philosophers succeed in their attempts. I shall argue that they do not, and show that each founders on a similar ground. Below I will begin with a brief review of the counterexamples raised by Martin and Bird, to which Choi and Gundersen have aimed at responding.

II. Counterexamples to A Simple Conditional Analysis by Martin and Bird

According to a simple conditional analysis, a disposition-ascription is analyzed into a counterfactual conditional. Take fragility for example. A simple conditional analysis has it that DA iff CC:

- DA. Something x is fragile at time t.
- CC. If x were to be struck at t, then it would break.

Martin (1994) considers a pair of cases with an example to show that this bi-conditional analysis fails in both directions. To use a variant of Martin's (1994) electro-fink example, imagine that a sorcerer brings about an effect on a glass in the following two ways (this case is due to Lewis, 1997): i) as soon as a fragile glass is about to be struck, the sorcerer protects the glass from breaking by instantaneously casting a spell that renders the glass no longer fragile; ii) as soon as a non-fragile glass is about to be struck, the sorcerer renders it fragile and causes it to break when struck. In case i), DA is true, but CC is false. This means that CC is not necessary for DA. In case ii), DA is false while CC is true. This means that CC is not sufficient for DA. As a result, disposition-ascription is not logically equivalent to a conditional. Martin infers from this result that dispositions *qua* real properties cannot be reductively explained by conditionals.

Lewis (1997) takes Martin's (1994) refutation of SCA as decisive, but maintains that a conditional analysis can be remedied by refining it as follows:

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

where an x-complete cause is "a cause complete in so far as havings of properties intrinsic to x are concerned, though perhaps omitting some events extrinsic to x" (Lewis, 1997, p. 149). Lewis's proposal consists of two main ideas: 1) to have a disposition is to have *some intrinsic property* that serves as the causal basis of giving response r upon receiving stimulus s; 2) the clause of retaining the intrinsic property B during the time lag between t and t' can deal with Martin's counterexample.

It is worth noting that Lewis does not seem to apply RCA directly to deal with Martin's counterexample. Choi (2006, p. 370) brings our attention to Lewis's taking two different steps in coming up with an analysis of a disposition-ascription (1997, p. 142-146). The first step is to put an ordinary disposition-ascription such as DA into an "overly dispositional locution" by specifying the stimulus and the response of fragility as follows:

ODL. Something x is fragile at time t iff x has the disposition at t to give the response of breaking to the stimulus of being struck.

The second step is to apply RCA to ODL to yield the following analysis of fragility:

RCA*. Something x is fragile at time t iff, for *some intrinsic property* B that x has at t, for some time t' after t, if x were to be struck at time t and retain property B until t', x's being struck and x's having of B would jointly be an x-complete cause of x's giving response r. (c.f. Choi, 2006, p. 371)

Noting this two-step procedure inherent in Lewis's analysis is crucial to our subsequent discussion and evaluation of Choi's own position.

RCA* handles Martin's counterexample nicely. It correctly dictates that a glass would be attributed with fragility, *if it were to retain the intrinsic property* when struck. The analysis also justly predicts that a glass would not be ascribed fragility in the second case. This is because if the glass were to retain the intrinsic property between t and t' , that property would be causally irrelevant to breaking the glass; what causes the glass to break in this case is some extrinsic factor, i.e., the sorcerer.

Bird (1998) argues, however, that Lewis's analysis remains a failure, given the cases of antidotes. An antidote is defined by Bird as "something which, when applied before t' , has the effect of breaking the causal chain leading to r , so that r does not in fact occur" (1998: p. 228). An example of an antidote is a physical device that absorbs the shock waves of a glass when struck. Consequently, the glass retains its fragility at t' but does not break when dropped, thanks to the device. In this case, the *analysandum* on the left-hand-side of RCA* is met, but the *analysans* on the right-hand-side of RCA* is not fulfilled. This means that a conditional is not necessary for a disposition-ascription. Another counterexample that works in a converse order is offered by Lewis himself (1997, p. 145-146). A styrofoam S is not fragile. But as soon as the Hater of Styrofoam hears the distinctive sound made by S when struck comes and tears S apart by brute force. In this case, the *analysans* is true: it is clear that if S were to be struck and retained its intrinsic property B , the striking and B would jointly be an S -complete cause of S 's breaking. However, the *analysandum* is false: S is plainly not fragile. This is a case of mimickers. It shows that a conditional is not sufficient for a disposition-ascription. Lewis's RCA* thus has to be rejected by the two counterexamples (see Johnston, 1992, for making similar points).

III. Choi's Two-Step Approach

Choi's (2006) defense of the simple conditional analysis of disposition-ascriptions is taken through an indirect route. He first argues that Lewis's two step procedure can be suitably exploited to restore Lewis's own reformed conditional analysis from the antidotes and mimickers counterexamples. He then shows that the same approach can be adopted to develop a plausible simple conditional analysis which can equally defeat all the relevant counterexamples including Martin's fink cases. Consequently, Lewis's original motivation for advocating a reformed conditional analysis is invalidated. Moreover, given that the simple conditional analysis is ontologically more economic, with no commitment to construing a disposition as an intrinsic property, the simple version should be preferred to the reformed version. I shall argue that despite Choi's illuminating discussion and intriguing suggestion, the two step approach does not escape a basic problem which Martin raises for the simple conditional analysis.

To see how the two step approach works, first consider how Lewis himself deals with the Hater of Styrofoam case. Lewis maintains that S obviously does not qualify as a fragile object, because its breaking does not go through a *certain direct and standard process* (1997, p. 145). Lewis suggests that ODL be revised by adding this constraint to the specification of the manifestation of S , which is the first step of the analysis. The second step is to apply RCA, which is kept intact, to this revised form of ODL. The result will be a new analysis which dictates that S is not fragile, since S goes through an indirect and non-standard process of manifestation which renders the conditional on the right-hand-side of the bi-conditional analysis false.

Choi's innovating idea is to adopt a similar method to treat the presence of fragility-antidotes as a non-standard stimulus condition, which a plausible ODL had better exclude in its formulation. Generalizing these two counterexamples, the Styrofoam and antidote cases, Choi (2006, p. 373) proposes that the following two steps be taken. The first step is to revise ODL:

ODL'. Something x is fragile at time t iff x has the disposition at t to exhibit a *fragility-specific manifestation* in response to a *fragility-specific stimulus*,

where a fragility-specific stimulus includes x 's being struck in the absence of antidotes to fragility, and a fragility-specific manifestation includes x 's breaking through a certain direct and standard process. The second step is to apply RCA to ODL' to produce a new analysis of fragility:

RCA**. Something x is fragile at time t iff, for *some intrinsic property* B that x has at t , for some time t' after t , if x were to undergo a fragility-specific stimulus at time t and retain property B until t' , s and x 's having of B would jointly be an x -complete cause of x 's exhibiting a fragility-specific manifestation.

RCA** can thus well handle the Styrofoam and antidote counterexamples.

Choi (2006, p. 374) then makes a crucial claim that the same two-step strategy can be adopted to restore the simple conditional analysis of the following form:

SCA. Something x has the disposition at time t to give response r to stimulus s iff, if x were to undergo s at time t , it would give response r .

The procedure is to take the first step of adopting the revised ODL' instead of ODL, and then take the second step of applying SCA to ODL' to imply a new analysis of fragility:

SCA*. Something x is fragile at time t iff, if x were to undergo a fragility-specific stimulus at t , it would exhibit a fragility-specific manifestation.

SCA* can overcome the Styrofoam and antidote cases. For the Styrofoam S would not break when struck *in the absence of fragility-mimickers*, and hence would be correctly classified as non-fragile. The glass would break when struck *in the absence of fragility-antidotes*, and hence would be qualified as fragile. Choi also quite compellingly shows that SCA* can handle Martin's fink cases, if the specification of ODL' in the first step of the analysis suitably includes *the absence of finks* like the sorcerer (2006, p. 375-376). Given that SCA* can counteract all the counterexamples as well as RCA** does, without having to introduce an intrinsic property B as x 's causal basis in its formulation, Choi concludes that the simple conditional analysis is superior to Lewis's reformed conditional analysis, under the framework of the two step approach.

The problem that Choi's two step approach to restoring the simple conditional analysis faces seems to be this. The key to dealing with counterexamples in this analysis is to focus on the first step, by formulating an ordinary disposition-ascription into an overtly disposition locution in such a way that it excludes certain factors which might causally interfere with the typical manifesting process in response to a typical stimulus. For example, when specifying a fragility-specific stimulus, the analysis includes the absence of fragility-finks, fragility-antidotes, fragility-mimickers, and relevant others. For this formulation to work, however, it has to specify a full list of factors which are relevant to bringing about counterexamples to the

analysis. How to provide such a list is, as Choi himself acknowledges, “a nontrivial and indeed hard problem” (2006, p. 377). What seems to be worse is that it is hard to see how this task could be done without having to presuppose the very dispositional concept *fragility*, or even invoking the concept itself. Doesn’t the concept of fragility, when put into an overtly dispositional locution, simply become one “which nothing prevents it from being fragile”? This would be strikingly circular.

The difficulty involved here is, in my view, not different from the problem for proponents of the original simple conditional analysis who try to handle the fink cases by adding a *ceteris paribus* clause to the antecedent of the conditional. The trick is to enable us to treat the presence of finks as a condition where other things are not being equal, and thus allow us to legitimately exclude the fink counterexamples to the conditional analysis. As Martin (1994, p. 5-6) convincingly points out, however, the idea of introducing the *ceteris paribus* clause is to include the set of all the events which would *bring about the same effects* as finks, and this simply amounts to stating that *nothing happens to make it false that the disposition in question is in place*. This modified simple conditional analysis is blatantly circular. It seems to me that the simple conditional analysis in Choi’s two-step approach merely transfers the circularity problem from the level of a conditional (in the second step) to the level of formulating an overtly dispositional locution (in the first step), without making a genuine progress over the original version discussed by Martin.

IV. Gundersen’s Appeal to Standard Conditions in Subjunctive Conditionals

The basic objection to the simple conditional analysis SCA relies on an intuitive and gripping picture of the world, which is nicely expressed by Bird (2000, p. 229) as follows:

Some object might possess a disposition, and continue to have it, and also receive the appropriate stimulus, yet fail to yield the manifestation.

Bird’s explanation of this widespread phenomenon is also a natural one: antidotes (might) exist and interfere with the causal process leading to the manifestation of a disposition. Gundersen (2002) examines several ways of construing and defending Bird’s antidote counterexamples to SCA, and argues that none of them works. Below I shall focus on one of these lines of argument, and show why I think Gundersen does not make a compelling case for the defense of SCA.

Gundersen first points out that Bird’s antidote counterexamples can be given a modalized reading, as suggested by Bird’s own expressions:

The state of the world we are interested in is one described, albeit incompletely, in my illustrative story. It is one that includes among other things the context of the boron rods being lowered and the presence of the relevant stimulus for [the pile’s disposition to chain react]. I shall call this state *w*. It is sufficient for a counter-example to the conditional analysis to show that *w* is possible, where it is the case that in *w*, [F*x*] is true and *m* is false. It is agreed that in *w*, [F*x*] and [- *m* if the boron rods are lowered]. Since, as just remarked, *w* includes the context [of the boron rods being lowered], it follows that in *w*, [- *m*]. (Bird, 2000, p. 232; c.f. Gundersen, 2002, p. 400)

In Gundersen’s understanding, Bird regards a disposition as an intrinsic property, which renders the *analysandum* (a disposition-ascription) of SCA true in whatever context the disposition is (or might be) in, and is also simultaneously committed to an *ultra-contextualism*, according to which the *mere possibility* of a world state *w* renders the *analysans* (a subjunctive conditional) of SCA false.

Gundersen then maintains that an ultra-contextualism regarding subjunctive conditionals is untenable. The reason is that it amounts to the thesis that a super-causal link exists between stimulation and manifestation; put differently, it gives us an understanding of subjunctive conditional in terms of strict entailment where the consequent is true in every possible world in which the antecedent is true. Gundersen contends that this is a thesis too strong and unreasonable to be accepted, stating that “no one believes an object has a certain dispositional property if and only if the characteristic manifestation *must* be displayed whenever stimuli conditions obtain” (2002, p. 401). Gundersen claims that SCA is as good as it stands, and what needs to be discarded is the following modalized version of SCA:

SCAm. Necessarily, something *x* has the disposition at time *t* to give response *r* to stimulus *s* iff, if *x* were to undergo *s* at time *t*, it would give response *r*. (c.f. Gundersen, 2002, p. 401)

Gundersen thus seems to suggest that SCA holds, even given counterexamples such as those raised by Bird. This means that Gundersen must think that there are certain cases, cases that do not include counterexamples, in which a subjunctive conditional in SCA is rendered true. What then are those cases?

Gundersen has an answer to the above query. It goes as follows (2002, p. 402):

... subjunctive claims only require for their truth a causal link which typically associates them in standard, or better, sufficiently nearby environments.

We may continue to ask: What are those environments, which are deemed *standard*, or *sufficiently nearby*, in which subjunctive claims are rendered true? To this question, Gundersen admits that “that surely is a hard question”, but insists that subjunctive semantics depends on an implicit acknowledgement of such standard conditions” (2002, p. 402). Gundersen claims that the standard in question is objective, which serves as the ground for our making subjunctive claims. Nonetheless, Gundersen appears to leave such a standard unspecified.

This is highly unsatisfactory. In a simple conditional analysis, we rely on a subjunctive conditional to inform us whether a disposition-ascription is true. In the version recommended by Gundersen, it is a subjunctive conditional under standard conditions that fulfills this task. However, we are not provided with any explicit specification of what those standard conditions are or any method of how to identify them. We are then on no sound ground to determine whether a disposition-ascription is true or not. In other words, the simple conditional analysis faces a dilemma. On one horn, it lacks a clear specification of the standard conditions in question, and hence renders a subjunctive conditional of SCA vague and undetermined in its truth-value. On another horn, to specify it would risk presupposing the disposition under inquiry, and hence renders the analysis circular. Either horn of the dilemma seems to render Gundersen’s defense of the simple conditional analysis futile.

V. Conclusion

The simple conditional analysis of disposition-ascriptions is well motivated, given its implication for shedding light on the ontology of dispositions and for the prospects of reductionist projects in a wide variety of philosophical inquiries. However, some basic difficulties seem to persistently plague any attempts to advocate such an analysis. The difficulties in question have to do with how the analysis handles counterexamples to it. Either some phrase like the *ceteris paribus* clause has to be added to the antecedent of a conditional in the analysis, which is notoriously vague, or the phrase has to be specified clearly, which ends up unavoidably circular.

Choi and Gundersen seem to run into similar difficulties in each of their sophisticated defenses of the simple conditional analysis. Choi's two-step approach separates the task of formulating a disposition-ascription into an overtly dispositional locution from that of giving the dispositional locution a conditional analysis. The hope is to keep the conditional analysis intact, while let the formulation in the first step do the trick of dealing with counterexamples. It turns out that the formulation is either incomplete, or circular when further specified. This leaves the analysis as a whole deeply problematic. Gundersen, on the other hand, holds that counterexamples do not refute a subjunctive conditional, because there is an objective standard which determines when the causal link between manifestation and stimulus specified by the conditional obtains. Such a standard, however, is merely left unspecified. It remains a daunting challenge to give a substantial specification of the standard in question without rendering the analysis circular. In conclusion, it appears that the prospects of restoring the simple conditional analysis are dim.

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