

DISCUSSIONS

INTENTIONALITY AND THE PHYSICAL: A NEW THEORY OF DISPOSITION ASCRIPTION

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I. INTRODUCTION

This paper has three aims. First, it aims to stress the importance of the dispositional/categorical distinction in the light of the evident failure of the traditional formulation. Second, it considers one radical new alternative that is on offer, intentionality as the mark of the dispositional, and shows what is unacceptable about it. Finally, a suggestion is made of what would be a better theory that explains all that was appealing about the new alternative.

The debate has largely concentrated on the relationship between disposition ascriptions and conditionals. A traditional understanding is that disposition ascriptions entail or can be analysed by true conditional *if ... then* statements.¹ This was challenged by Mellor, who observed that all property ascriptions, even the paradigmatically categorical ones such as 'triangular', entailed conditionals.² Popper held a similar view, noting that 'being dissolved', as well as 'being soluble', was dispositional because it entailed the conditional that if the liquid is evaporated, then the solid can be recovered.³ The plot thickened when C.B. Martin launched another attack on the relationship between dispositions and conditionals which, although in obvious disagreement with the preceding criticism, had the same effect.⁴ He pointed out that disposition ascriptions can be true even when the associated conditional

¹ See, for instance, G. Ryle, *The Concept of Mind* (London: Hutchinson, 1949), p. 123; N. Goodman, *Fact, Fiction and Forecast*, 2nd edn (Indianapolis: Bobbs-Merrill, 1955), pp. 34ff.; W.V.O. Quine, *Word and Object* (MIT Press, 1960), p. 222.

² D.H. Mellor, 'In Defense of Dispositions', *Philosophical Review*, 83 (1974), p. 171.

³ K.R. Popper, *The Logic of Scientific Discovery* (London: Hutchinson, 1959), p. 424.

⁴ C.B. Martin, 'Dispositions and Conditionals', *The Philosophical Quarterly*, 44 (1994), pp. 1-8.

proposition is false and *vice versa*. This has the consequence that disposition ascriptions do not entail conditionals, and some have recognized that this undermines the dispositional/categorical distinction we have taken for granted.⁵ Clearly this whole approach to the distinction, in terms of a special relationship between disposition ascriptions and conditionals, faces a crisis. This is not to say that the case against the conditional analysis is proved, for a refined conditional analysis could still be offered, and I shall return briefly to this later. It is reasonable at this stage, however, to consider whether any alternative that explicates the dispositional/categorical distinction without conditionals is a viable contender.

II. AN ALTERNATIVE: INTENTIONALITY

An alternative has recently been offered. It is radical and challenging. It is the claim that the physical world, and not solely the mental, includes the phenomenon of intentionality. Certain properties, those usually understood as powers, potencies or dispositions, are said to be distinguished from categorical properties in virtue of being *directed* towards certain possible manifestations when a particular set of conditions is realized. This is the main contention in recent work by U.T. Place.⁶ It offers new ways of understanding dispositions, how the physical world works and the nature of causal interactions. The class of disposition ascriptions is now distinguished as being the class of ascriptions that pick out real dispositional properties, and the criterion for being a real dispositional property is being an intentional property, that is, a property that is directed towards certain possible events. This clearly and correctly separates dispositional properties from disposition ascriptions, attempting to distinguish the dispositional from the categorical at the level of properties. Thus while the earlier accounts have concentrated on ascriptions, and the question of whether or not they are conditional-entailing, on this new account there are distinct properties, directed ones, which are specifically dispositional. A property ascription is a dispositional one purely on the basis of whether it denotes one of these intentional properties, not because it entails a conditional.

If this view is correct, then not only is the traditional understanding of dispositions in need of reappraisal, so also is our traditional understanding of intentionality and its relation to the mental. Famously, Brentano in 1874 proposed intentionality as the mark of the mental.⁷ Place's view is that intentionality is, instead, the mark of the dispositional, and that dispositions can be both mental, such as believing that *p* is true, and physical, such as solubility. How we understand the characterizing features of the mental would thus be a topic requiring further consideration.

⁵ S.D. Mumford, 'Conditionals, Functional Essences and Martin on Dispositions', *The Philosophical Quarterly*, 46 (1996), pp. 86–92; D. Lewis, 'Finkish Dispositions', *The Philosophical Quarterly*, 47 (1997), pp. 143–58.

⁶ U.T. Place, 'Intentionality as the Mark of the Dispositional' (hereafter IMD), *Dialectica*, 50 (1996), pp. 91–120, and 'Dispositions as Intentional States' (DIS), in D.M. Armstrong, C.B. Martin and U.T. Place, *Dispositions: a Debate* (London: Routledge, 1996), pp. 19–32.

⁷ F. Brentano, *Psychology from an Empirical Standpoint* (London: Routledge, 1995), pp. 88–9.

I shall consider the steps that suggest the apparent credibility of intentionality in the physical world. I shall concede many of the arguments that lead to this conclusion. However, I shall argue that the conclusion itself is one that we ought to resist, and that we must therefore look for some alternative response to the problem raised. My view is that an understanding of certain physical properties as intentional or directed is altogether the wrong sort of image that we need for the physical world. There is a danger of animism or panpsychism – a suggestion of inanimate objects having *purposes* and performing *actions* – if we start endowing physical states of the world with directedness. This understanding of physical dispositional properties can be avoided. The claim is, therefore, that the attraction of the intentionality criterion of the dispositional is a metaphysical red herring, and we would do well to return to the traditional debate that concentrates on the relationship between ascriptions and conditionals. I suggest that a defensible criterion of the dispositional is in sight, and that everything in the physical world that Place accounts for in terms of intentionality can be accounted for in other terms. I shall provide a view of disposition ascription which explains the appearance of directedness, but does so without the remotest danger of animism. This alternative proposal also leaves the way open to rescue the notion of intentionality as a distinct mark of the mental.

First, I shall show how the concept of intentionality is conceivably extendable to the physical case (§§III–V). Then I shall argue that this move requires a mistaken understanding of the physical dispositional properties at the centre of the controversy (§VI), before going on to suggest an alternative view in its place (§VII).

III. CRITIQUE OF INTENTIONALITY AS THE MARK OF THE MENTAL

The origin of Place's novel approach is in Martin and Pfeifer's critique of intentionality as the mark of the mental.⁸ They argue that the traditional formulation of intentionality is such that it is applicable to physical causal dispositions just as much as it is applicable to mental states. They begin (pp. 532–4) by taking five traditional characteristics of intentionality. These are (a) intentional inexistence; (b) no truth import; (c) referential opacity; (d) directedness, which we shall see is one of the most significant characteristics; and (e) indeterminacy, in that I may think of a particular man without thinking of him as having a particular height, even though the man in question does indeed have a particular height. This last point is a revised version of the indeterminacy of intentionality claimed by Anscombe.⁹

Martin and Pfeifer's argument is that these five traditional characteristics apply equally to physical causal dispositions or their ascriptions. For example, a disposition is characterized in terms of that to which the disposition is directed. The

⁸ C.B. Martin and K. Pfeifer, 'Intentionality and the Non-Psychological', *Philosophy and Phenomenological Research*, 46 (1986), pp. 531–54.

⁹ G.E.M. Anscombe, 'The Intentionality of Sensation: a Grammatical Feature', in R.J. Butler (ed.), *Analytical Philosophy*, 2nd Series (Oxford: Blackwell, 1965), at p. 161.

disposition of malleability is directed towards changing of shape in conditions which may or may not exist. Hence an actual change of shape need not occur to something which is malleable, though such an event is that to which the disposition is directed. Dispositions thus have directedness, just as in the mental intentional ascription 'Jake fears lions'.

There are at least two possible responses we can make to these similarities. We can (i) accept that intentionality is actually the mark of the dispositional rather than the mark of the mental, or (ii) develop the traditional conception of intentionality in such a way that it does exclude the physical (dispositional). Martin and Pfeifer opt for choice (ii) and try to preserve intentionality as the mark of the mental. Ullin Place opts for choice (i).

IV. PLACE ON S-INTENSIONALITY AND T-INTENTIONALITY

Place takes the notion of directedness to be the relevant characteristic of intentionality, understood as a property of processes, events or states. This is because the other proposed characteristics considered by Martin and Pfeifer are either marks of intentionality, or *S-intensionality* as Place more perspicuously calls it, which is a property of linguistic expressions, or are themselves explained in terms of the basic notion of directedness (IMD p. 119).

Place takes the typifying marks of intentionality from the history of the development of the concept, and chides Martin and Pfeifer for plucking them out of thin air. He arrives at the following list: (a) inexistence (from Brentano); (b) permissible falsity of an embedded declarative sentence (the linguistification of intentionality, from Chisholm¹⁰); (c) indirect reference/referential opacity (from Frege¹¹); (d) directedness (re-emphasized by Searle¹²); and (e) indeterminacy (from Anscombe). However, of Place's list, (b) and (c) are marks of S-intensional locutions, and as Place notes most S-intensional locutions are so in virtue of their referential opacity, so mark (b) can be discarded, as it is explained by (c), which is thus sufficient (IMD p. 119). What we should separate as differing from the genuinely intentional, therefore, is the case of statements where there is failure of substitutivity *salva veritate*. This occurs, on Place's analysis, in the case of a quotation, where to make a substitution would be to misrepresent what has been said. What we are looking for as the distinguishing feature of intentionality is a property of a state or event, *T-intentionality* as Place calls it, rather than a property of a locution or statement.

The remaining marks (a), (d) and (e) are said (*ibid.*) to be applicable in virtue of one feature and are, therefore, merged into a single criterion for T-intentionality: the Brentano–Searle–Anscombe criterion that 'a state is T-intentional if it is directed towards an object which need not or does not yet exist and is, therefore, indeterminate'. Place then goes on (*ibid.*) to state his central thesis:

¹⁰ R. Chisholm, *Perceiving: a Philosophical Study* (Cornell UP, 1957), pp. 170–1.

¹¹ Frege, 'On Sense and Reference' (1892), in P.T. Geach and M. Black (eds), *Translations from the Philosophical Writings of Gottlob Frege* (Oxford: Blackwell, 1960), pp. 25–50.

¹² J.R. Searle, *Intentionality: an Essay on the Philosophy of Mind* (Cambridge UP, 1983), p. 1.

It also appears that every disposition, whether mental or 'physical', satisfies this criterion and that every state that satisfies it is a disposition. It follows that Intentionality as defined by this criterion is the mark not of the mental, but of the dispositional.

Do dispositional properties, mental or physical, meet the criterion of intentionality so defined, however, namely, that of being 'directed towards an object that need not or does not yet exist and is, therefore, indeterminate'?

V. THE DIRECTEDNESS OF PHYSICAL DISPOSITIONS

In comparison with the detailed examinations of the concept of intentionality and Martin and Pfeifer's treatment, surprisingly little is said by Place on why dispositions should be understood as directed states or properties, or on what exactly is the nature of directedness. Little, also, is to be found in other passages, e.g., in DIS, where Place treats the issue.

His view is illustrated first with an example, the directedness of the liability of glass to break. This disposition is directed in so far as the specification of the disposition ascribed must be characterized in terms of the event (which may or may not occur) towards which the disposition is directed, namely, the glass breaking (IMD p. 104). We are later told (p. 105) that this connection between a disposition and an intentional state is a conceptually necessary one, and that the directedness is explained in the following way:

a disposition is a state whereby the entity (substance), whose dispositional property it is, is orientated towards the coming about of a possible future state which does not now exist and may never do so, but which, if it does exist and thus becomes determinate, will constitute a manifestation of that disposition.

Nothing more specific than this notion of 'orientated towards' is added, however, nor is the notion of directedness much clarified in another paper where such clarification may be expected. There (DIS p. 26) Place characterizes dispositions in the following way:

modal (dispositional) properties ... extend beyond what is actually happening or actually the case at some moment in time to what would happen or would be the case, if certain contingencies should arise in the future, or to what would have happened or been the case if those contingencies had arisen in the past.

Later, the view of dispositions as 'modal' properties is repeated: 'Dispositional properties are modal properties, they consist in their possible future and past counterfactual manifestations'.¹³

The directedness of dispositions is thus directedness towards their possible manifestations. The notion of directedness apparently can explain what was attractive

¹³ Place, 'A Conceptualist Ontology', in Armstrong, Martin and Place, p. 60.

about the traditional account, of conditional entailment, without having any commitment to it. Place's view could be used, therefore, as a solution to the problems of the conditional analysis. Martin's electro-fink example suggests that no such analysis is possible, and that realism about dispositions *qua* properties is the most plausible position to adopt. An electro-fink is a device that can be attached to a wire and can instantaneously render a live wire dead or a dead wire live. The electro-fink is activated when the wire is about to be touched by a conductor. If we understand the wire's being live as a dispositional property of the wire, then the proposed analysis of the dispositional ascription, into the conditional 'if touched by a conductor, then current is passed', fails. This is because the conditional will be true when the wire is dead and false when the wire is live.

Surely, however, the understanding of dispositions must be explicated in terms of certain events which the possession of such a property causes, facilitates or enables, and which occur upon the realization of a set of antecedent conditions. It is this thought that could be seen as warranting Place's move beyond conditional entailment to intentionality as the mark of the dispositional. We cannot say that there is conditional entailment, but intentionality, understood as the directedness of a state towards a certain manifestation, may be precisely what we are looking for. Perhaps, then, a notion of intentionality does capture the required meaning we have in mind when we make a disposition ascription. We are ascribing a property which has a certain natural direction towards events of a particular kind rather than others. These events will occur when all the right conditions are in place, though we cannot hope ever to be able to give a precise specification of these conditions, and thus we cannot ever say that a manifestation event is *entailed* in the strong sense required by the conditional analysis.

VI. WHAT IS WRONG WITH PHYSICAL INTENTIONALITY?

I have outlined the case for allowing intentionality into the physical realm, but I shall now explain why we would be wrong to understand dispositions in this way, and hence wrong to extend intentionality beyond the mental domain. I shall not be providing a full definition of the physical, nor shall I consider the problems that could arise if minds were understood to be identical with certain physical organs. There are problems here, but they can be saved for another day. For my purposes below, I am concerned with the possibility of ascribing intentionality to *purely* physical things, which I am defining as objects and substances that do not have minds, such as tables and chairs, sheets of paper and thermostats, whether or not minds can be explained physically.

When Martin and Pfeifer originally noted the inability of the accepted notion of intentionality to distinguish between (physical) dispositions and the mental, they were concerned (p. 551) to avoid the conclusion that Place went on to draw, worrying that if they did not attempt to reinforce the traditional concept of intentionality, their position might be construed as an argument for panpsychism, where intentionality is the mark of the mental and is to be found in all dispositional properties,

entailing that they are all mental. Given that Place has made exactly the move Martin and Pfeifer urged us to avoid, I shall try to say something more specific about why they were right and their warnings against physical intentionality correct.

First, is it right to say that any purely physical process is directed in the way that intentionality implies? We would probably think that it is not right, if such directedness were to be understood as attributing animistic forces to nature, where natural processes involve the purely physical thing *acting* in the way things with minds can act. Animism, understood here as a purely physical thing striving towards some desired goal, is a position I take to be a non-starter.

Does a soluble substance in any way strive to be dissolved? Does a fragile object aim to be broken? There is little reason to think that a material object without a mind is capable of having *aims* and *strivings* for events of a certain kind, because to do so would be for it to act, and attributions of action we reserve for things with minds. This is more than just prejudice. There is a fairly solid basis on which we say only of things with minds that they are capable of performing such actions as striving towards goals. In part this follows from conceptual analyses of what such acts involve, where to strive for *p*, for instance, requires having a concept of *p*, desiring that *p*, having a plan for the attainment of *p*, comparing it with alternate plans, considering the possible execution of any stages within the plan, and so on. This involves some pretty sophisticated abilities, and physical objects without minds just do not seem to have these; so it seems inappropriate to attribute directed actions to them.

Perhaps our resistance to physical directedness resides in the following thought. Objects in the physical world, which do not have minds, do not act as they do through *choice*. They are buffeted about by the various causal interactions in which they partake. One kind of event in which they are involved is no more special than, and no different for them from, any other kind of event. There is no preferred or desired class of events to which a physical object strives or aims.

To avoid begging the question against Place, however, we must consider whether he can explicate intentionality in a non-animistic way that would be acceptable, given that he does not profess panpsychism. In his explanation of why we should construe physical dispositions as intentional states, however, he fails to describe a sense of directedness in terms that clearly avoid the suggested danger of animism, as in, for instance, the uninformative explanation quoted above, where a disposition is said to be 'orientated towards' a certain kind of possible event. If we have no idea of what a non-animistic directedness could consist in, non-animistic 'orientation towards' helps us little.

An arrow can indeed be directed towards a target without thereby having to have a mind. Similarly a falling rock can be directed towards a road below. Are these possible cases that Place could appeal to as examples of intentionality in the physical world? He would be unwise to do so. Such cases do not exhibit the typifying features of intentionality as the proposed mark of the mental or dispositional. There could be, for instance, no intentional inexistence, which Place specifically says is involved in his notion of directedness. A falling rock cannot be directed towards a road which does not exist, whereas there *can* be fear of an intruder who does not exist. Were

Place to weaken his account of directedness so that it no longer involved intentional inexistence, therefore, he could no longer claim that dispositional properties exhibit the same typifying features as were claimed for the mental.

The proposed new account of dispositions is thus implausible as it stands, and therefore fails to illuminate the initial problem of how we are to distinguish dispositional from non-dispositional ascriptions, or dispositions from non-dispositional properties. What remains to be explained is how we are to understand dispositions if we are to reject Place's proposal. Place had captured the thought that, although disposition ascriptions are not strictly conditional-entailing, the properties ascribed nevertheless do have an intimate connection with some events and not others. How do we explicate this intimate connection, while avoiding the double dangers of animism or panpsychism and of an unsustainable claim about conditional-entailment apparently discredited by Martin?

VII. A BETTER ALTERNATIVE: FUNCTIONS

The suggested solution to the debate centres on the notion of a property ascription that has a functional essence. This functionalism about dispositions can explain everything that is explained by intentionality about dispositions, but with none of the panpsychist pitfalls. It also leaves the way open to an explanation of what the connection is with conditionals, and is consistent with much, though perhaps not all, of what David Lewis has subsequently written on the debate. In 'Finkish Dispositions' Lewis opts for a revised conditional analysis; but the problem is one which I see as best explained by a functionalist theory.

On this view, disposition ascriptions are understood as ascriptions of functionally characterized states or instantiated properties of objects. The features explained by intentionality, which can be explained equally well by functionalism about dispositions, are (a) why certain types of possible event are more intimately connected with a particular disposition than other types of event; (b) why this intimate connection is born out of conceptual necessity; (c) why the meaning of disposition terms may ordinarily be thought explicable in terms of conditionals; and (d) why dispositions can nevertheless be possessed though the conditionals associated with their ascription are false. I take it that the answers to these questions are the gains of Place's account. He could have won them without the danger of animism had he adopted a functionalist theory instead.

The functionalist theory accepts that there are (at least) two different ways of talking about the instantiated properties of objects and substances. One way is in terms of shapes, dimensions and locations, as when we say that something is spherical or one metre long or in the locked chest. A traditional umbrella term for descriptions of this kind is 'categorical'. The other kind of talk describes or denotes properties or states according to the causal contribution they can make to the interactions of the things that possess them. This is disposition-talk, as when we say that something is poisonous, radioactive or soluble. Given that this version of functionalism allows that dispositions bring about their manifestations, it differs from

the functionalism defended by Elizabeth Prior.¹⁴ Disposition-talk, I take it, is a subclass of the much more general class of description, explanation and prediction: function-talk. All dispositional characterizations of properties are functional characterizations, but not *vice versa*. Some functions are not dispositional, for example, the function of flags as to add grandeur to an event, or the function of a premise in an argument. That dispositions are functional characterizations of states or properties amounts to the following two claims:

1. What it is that makes any property or state *d* of an object a dispositional property or state is that it is a conceptual truth that *d* causally mediates from stimulus events to manifestation events
2. What it is that makes a disposition *d* the type of disposition it is consists in the specific stimulus and manifestation events to which it bears the relation of causal mediation.

The functionalist theory of dispositions provides explanation of (a)–(d) above in the following way.

It explains (a) why certain types of possible events are more intimately connected to a disposition than others. A disposition is a state that is characterized in relation to two types of event which it causally mediates in appropriate conditions, the events which we identify as typical stimuli and typical manifestations. A disposition is classified according to the functional role it plays, so it is no mystery that there is an intimate connection between such events and the disposition.

The functionalist theory explains (b) why this intimate connection is born out of conceptual necessity. It is a conceptual truth that it is solubility that occupies the functional role of mediating between immersion in liquid and dissolving. If anyone thought that the property which occupied this functional role was elasticity, they would be guilty of a conceptual confusion. What they say is not just false; it is necessarily false.

The meaning of disposition terms (c) may ordinarily be thought explicable in terms of conditionals because a conditional or set of conditionals is a fairly natural and convenient way of gesturing at a functional role. This is so as long as the conditional is understood as a causal one which is stronger than material implication. That the meaning of disposition terms is explicable in such conditionals amounts to the existence of a conceptual connection between disposition ascriptions and their associated conditionals, and this provides an opportunity to reject Mellor's claim that there is no difference between the conditional entailments which come from the ascriptions of dispositional and categorical predicates. Linguistic competence alone suffices for us to know which conditional is associated with a disposition term. With categorical terms, however, the causal role played by the property ascribed can be known only within the context of a contingent and *a posteriori* physical theory, not from linguistic competence alone.

However, (d) dispositions can be possessed though their associated conditionals are false. Conditionals will be true only if certain background conditions are right

¹⁴ E. Prior, *Dispositions* (Aberdeen UP, 1985), ch. 7.

for the consequent manifestation, given the antecedent stimulus. A disposition may be possessed though the associated conditional is false, just as something can be said to have a functional role, of causing G if F , for instance, though it fails to cause G when F because of some interfering background condition. The point is that there are conditions, which I shall call 'ideal conditions' and which can be specified non-trivially in the form of a Ramsey sentence, in which that thing plays that functional role. It is against the context of such ideal conditions that we understand the attribution of a functional role. Martin's electro-fink puzzle is thus no threat to the functionalist theory; indeed the electro-fink is itself functionally characterized by Martin, a function that it may well fail to fulfil if it, in turn, is 'finked'. Dispositions are understood as real properties, as Martin wants; hence they continue to be there, they endure, even when their manifestation is inhibited. What it is in virtue of which they are real *dispositional* properties, though, is that they are specified in relation to a functional role which they occupy for the most part, in ideal conditions, in relation to specific types of stimulus and manifestation events, and by conceptual necessity.

The functionalist theory thus provides a criterion for what it is to be a disposition, and hence what it is for an ascription to be a disposition ascription. It provides a mark of the dispositional which explains all that Place's account explained, but does so without the dangers. At no point in the functionalist account do we have to appeal to properties being directed, having aims or striving towards their preferred realizations. Purely physical objects make no choices and the functionalist theory requires none.

VIII. PROGRAMME

This falls far short of a fully developed functionalist theory of dispositions, though already I have said more than Place did to explicate intentionality as the mark of the dispositional. What yet need to be developed are some answers to major questions concerning the kind of functionalism that we are committed to in our disposition-talk. We need to consider whether dispositions are first-order or second-order properties, and whether dispositions, functionally construed, can literally be understood as causes of their manifestations; we need to opt for a theory of dispositions either as identical with categorical properties functionally specified or as essentially functional, and thus possibly non-categorical, properties; and we need a more explicit account of the relation between disposition ascriptions and conditionals.¹⁵

There also needs to be a programme for reinforcing the concept of intentionality by adding some element that more clearly excludes the physical. Martin and Pfeifer noted this in the article which started the debate. They suggested that the involvement of representations in intentional states could be something that distinguished the mental from physical causal dispositions. Perhaps the possibility of having or making such representations is a necessary condition for the making of a choice,

¹⁵ See my *Dispositions* (Oxford UP, 1998).

which in turn could be understood as a necessary condition for being directed in the way that has been discussed. Whether this line can be developed in a systematic way to produce a better theory of intentionality, which more emphatically excludes the physical, remains to be seen.¹⁶

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¹⁶ I thank Eros Corazza for comments on an earlier draft, and C.B. Martin and Ullin Place for discussions and correspondence related to this material.