

[Article prepared for *Lessico Epistemologica* edited by Giacomo Gava. Translated by Gava into Italian. Translation is not available.]

DISPOSITIONS

Capacities and Tendencies

'Disposition' as a technical term in philosophical discussion first appeared and remains closely identified with the work of the British philosopher, Gilbert Ryle (1900-1976) who introduced it in his *The Concept of Mind* (London: Hutchinson, 1949). The concept, however, has been extensively discussed by philosophers under a variety of different titles since the days of Aristotle. Ryle's term 'dispositions' embraces two notions which have often been discussed separately, (a) the notion of a *capacity*, what someone or something *can* do, and (b) the notion of a *tendency*, what someone or something typically *tends* or is inclined to do. Philosophical discussions which have emphasised capacities include Aristotle's discussion of potentiality, Locke's 'powers', Husserl's actuality/possibility distinction and in our own day Nancy Cartwright's *Nature's Capacities and their Measurement* (Oxford: Clarendon Press, 1989). Those which have emphasised tendencies include Aquinas' *inclinationes* and *appetitus* and J.S. Mill's 'tendencies'. What is common to both capacities and tendencies is that the behaviour in terms of which they are defined, their *manifestations*, appear at best intermittently or can fail to appear at all without affecting the claim that the capacity or tendency for them to exist itself exists. The difference between the two seems to be that in the case of capacity the disposition is characterised by reference to its upper limit relative to some standard of excellence, while in the case of a tendency it is characterised with respect to a central tendency within the distribution of its manifestations.

There are four issues concerning dispositions which have been debated by philosophers:

- (a) the alleged hypothetical character of dispositional statements (statements ascribing a dispositional property to someone or something) and how this is to be reconciled with the categorical assertion that a disposition exists, even though it has never been manifested,
- (b) the relation between a disposition and its structural basis,
- (c) the relation between dispositional statements and causal laws,
- (d) the "intentional" character of a disposition whereby it is directed towards the actualization of a range of possible manifestations in the future.

(a) *Dispositional statements as concealed hypotheticals*

According to Ryle, a dispositional statement such as the statement 'This pane of glass is brittle' is equivalent to a conditional statement, in this case the statement 'If at any time this pane of glass were to be struck with sufficient force, it would break'. Since that claim was first made, it has been generally accepted that some such conditional statement is *entailed* by every statement ascribing a dispositional property to someone or something. What is disputed is the claim that that is all there is to it. It is argued that when we ascribe a dispositional property to someone or something we are talking, not just about what would happen in the future or would have happened in the past if certain conditions were to be or had been fulfilled, we are talking about a currently existing "categorical" state of the property-bearer whose existence makes the conditional true. This conclusion is specifically rejected by Ryle (*op. cit.*, p. 43) and, it would seem, by Wittgenstein (*The Blue and Brown Books*, Oxford: Blackwell, 1958, pp. 100-1) in his discussion of a language game in which dispositional terms are replaced by descriptions of how the individual would behave if certain conditions were to be fulfilled.

"Dispositions: A Debate"

In a more recent discussion of the issue, Armstrong, Martin and Place (T. Crane ed. *Dispositions: A Debate*, London: Routledge 1996) accept the conclusion, but disagree as to the nature of the currently existing "categorical" state. According to Armstrong, the dispositional state is identical with a categorical state of the microstructure of the property bearer. This identification involves him in rejecting the feature of a disposition whereby its existence supports inferences as to how the property bearer would and would not behave, if in

the future or in the counterfactual past certain conditions were to be or had been fulfilled. Such inferences are made true, according to Armstrong by the existence and operation of substantive Laws of Nature.

According to Martin's "Limit View" every property has two aspects what he calls a "qualitative" aspect and a dispositional aspect, using the term "qualitative" in place of the term "categorical" as used by others. But in contrast to Armstrong who unloads the projection of the dispositional towards the future onto the Laws of Nature, for Martin projection towards its possible future manifestations is what distinguishes the dispositional from the qualitative aspect of a property.

For Place categorical properties which he thinks reduce to spatial relations between entities (substances) are distinct from dispositional properties. He agrees that dispositional properties are categorical in the sense that they exist prior to and in the absence of any manifestation. But while he concedes that in every case there is a structure on which the existence of the disposition depends in a causal sense, the disposition itself consists entirely in its projection towards a range of possible future manifestations. Each disposition is construed as a substantive law (analogous to Armstrong's substantive Laws of Nature) of the nature of the property bearer (Cf. Cartwright's, *op. cit.*, view that the capacities of individual entities are the only reality underlying the laws formulated by scientists).

Martin's electro-fink argument

Martin ('Dispositions and conditionals' *Philosophical Quarterly*, 1994, 44, 1-8; Armstrong *et al. op. cit.* pp. 6 & 178-9) aims to refute Ryle's claim that dispositional statements are to be analyzed as concealed hypotheticals by postulating a device which he calls an "electro-fink" the effect of which, briefly stated, is to prevent the flow of current in an electrical circuit which is connected to a particular power source, whenever that power source becomes live. In such a case the statement 'The power source is live' cannot be analyzed as 'If a circuit is connected to this power source, a current will flow in the circuit', since *ex hypothesi* no such current will flow under that condition. Yet it is still true that the power source is live. It has that dispositional property, even though every manifestation of it is prevented by the device. Place ('Ryle's Behaviorism' In W. O'Donohue & R. Kitchener, eds., *Handbook of Behaviorism*, San Diego: Academic Press, 1998) argues that the causal conditional which underlies a dispositional statement is an "inference licence" of the form 'If *p* is true, *q* is true' which admits no qualification in the form of a *ceteris paribus* (other things being equal) clause. Causal conditionals, he claims (Place, U.T. 'On the nature of conditionals and their truthmakers', *Acta Analytica*, 1997, 18, 73-87) are *de re* conditionals which specify, in the antecedent, a condition under which a manifestation of the disposition specified by the consequent will exist or occur. Because of multiple causal factors, such conditionals are invariably subject to a *ceteris paribus* qualification which would rule out interference from factors such as an electro-fink.

(b) *The structural basis of dispositions*

All contemporary writers on dispositions agree that most, if not all, dispositions either consist in or depend on a state of the structure, usually the microstructure, of the property bearer. H.H. Price (*Thinking and Experience*, London: Hutchinson, 1953, p. 322) suggests that mental dispositions may not require such structural (he calls them "categorical") bases. C.B. Martin (personal communication) who discussed the matter with him in 1953 reports that Ryle held a similar view. Another possible exception to the rule which has been proposed in the case of the dispositional properties of the smallest sub-atomic particle known to science (the 'charm' of the quark) cf. Armstrong *et al.*, *op. cit.*, p. 114). In Armstrong, Martin & Place (*op. cit.*) there is disagreement between Armstrong and Martin who hold that the structural basis and the disposition are one and the same thing and Place who holds that they are what Hume calls "distinct existences" such that the structural basis stands as cause to the existence of the disposition as effect. All three agree in rejecting John Searle's (*Intentionality: An Essay in the Philosophy of Mind*, Cambridge: Cambridge University Press, 1983, pp. 265-270) claim that there is both a causal and an identity relation between structure and disposition.

(c) *Are dispositions causes of their manifestations?*

In contrast to Wittgenstein and Ryle who deny that the relation between a disposition and its manifestations is a causal relation ("reasons are not causes"), Armstrong, Martin and Place agree in thinking that dispositions

are intimately involved in every causal relation. However, they construe the relation somewhat differently. For Armstrong, causation is a physical interaction between material substances which proceeds according to the Laws of Nature. Since for him dispositions are material features of the microstructure of the property bearer, they are causes of their manifestations in the same way and in the same sense as the conjunction between substances that precipitates the effect. For Martin every causal relation is the simultaneous manifestation of the reciprocally related dispositions of the entities involved in the interaction (e.g. the solubility of the salt and the disposition of the water to dissolve it). For Place to say that two conjoined situations are causally related is to say that a causal counterfactual ('If the one had not existed or occurred the other would not have existed or occurred') is true. To say that is to subsume the conjunction under a causal law, and that causal law is constituted by the dispositional property or, as argued by Martin, the reciprocally related dispositional properties of the entity or entities involved in the interaction. The idea that dispositions constitute causal laws is suggested by Nelson Goodman's (*Fact, Fiction and Forecast*, 2nd Ed. Indianapolis: Bobbs-Merrill, 1965, p. 39) observation that a causal counterfactual can be sustained by a dispositional statement.

(d) *The intentionality of the dispositional*

The idea that a disposition is in some sense directed towards the actualization of a range of possible future manifestations goes back to Aristotle's description of the way potentiality ($\delta\upsilon\nu\alpha\mu\iota\tau\epsilon\varsigma$) is directed towards its actualization in *Metaphysics* Θ (1045^b35 ff.), a discussion which links back to what he says about final causes in nature in *Physics* 8 (198^b29 ff.) Galileo's critique of the Aristotelian entelechies (solids are attracted to the earth because of their earthly nature, liquids are attracted to the sea because of their watery nature, gases are attracted upwards because of their ethereal nature) has created a suspicion of this "teleological" aspect of dispositions amongst scientists. It is not always appreciated that what is wrong with the entelechies is not that they are dispositions which, like all dispositions, are orientated towards their possible future manifestations. It is simply that they are dispositions that have been incorrectly specified. As we have been taught by Galileo and Newton, they are special cases of the disposition of bodies to be attracted to one another as a function of their mass - itself a dispositional property, as Hugh Mellor ('In defence of dispositions' in *Matters of Metaphysics*, Cambridge: Cambridge University Press, 1991) points out.

The suggestion that there might be a link between the way a disposition is directed towards the actualization of its manifestations and Brentano's (*Psychologie vom empirischen Standpunkt*, Leipzig: Duncker & Humblot, 1874, Bk. 2, I, 5) concept of "direction towards an [inexistent] object" which he takes to be the defining characteristic of the mental which no physical object or property possesses was first made by John Burnheim ('Intentionality and materialism' unpublished paper presented to the Department of Philosophy, University of Sydney, c. 1968 - copy in the writer's possession). Burnheim argues that physical dispositions satisfy all of the "three salient things about intention" distinguished by Elizabeth Anscombe ('The intentionality of sensation', in R. J. Butler (ed) *Analytical Philosophy*, Oxford: Blackwell, 1965, p. 159):

1. "not any true description of what you do describes it as the action you intended"
(not any true description of an event which manifests a disposition describes it as such)
2. "the descriptions under which you intend what you do can be vague, indeterminate"
(the descriptions which characterize the *possible* manifestations of a disposition are vague, indeterminate, in a way any *actual* manifestation is not)
3. "descriptions under which you intend to do what you do may not come true"
(descriptions which characterize the possible manifestations of a disposition may not apply to any *actual* event)

C.B. Martin & K. Pfeifer ('Intentionality and the non-psychological' *Philosophy and Phenomenological Research*, 1986, 46, 531-554) argue

"that the most typical characterizations of intentionality . . . all fail to distinguish intentional mental states from non-intentional dispositional physical states."

In support of this claim they provide parallel examples of sentences ascribing mental and physical dispositions which, they claim, satisfy five such "typical characterisations of intentionality" culled from the

literature on the subject. Both Burnheim and Martin & Pfeifer take it for granted that intentionality is what distinguishes the mental from the physical and that, therefore, what they have shown is that these marks of intentionality are not what they purport to be. U.T. Place ('Intentionality as the mark of the dispositional' *Dialectica*, 1996, 50, 91-120) argues that, since intentionality is a technical term, it means what its "typical characterisation" make it mean. It follows that in so far as those characterizations are satisfied by physical dispositions, intentionality is the mark, not of the mental, but of the dispositional. However, he rejects Martin & Pfeifer's claim with respect to one of their five "typical characterizations", Frege's ('Über Sinn und Bedeutung' *Zeitschrift für Philosophie und philosophische Kritik*, 1892, 100, 25-50) "indirect reference" *alias* Quine's ('Reference and modality.' In *From a Logical Point of View*, Second Edition, Cambridge, MA: Harvard University Press, Chapter VIII, pp. 139-159) "referential opacity", which he takes to be the mark of a quotation.