

CORRESPONDENCE

TO THE EDITOR OF THE *Journal of Philosophical Studies*.

THE CASE FOR EMERGENT EVOLUTION.

SIR,

When attending Professor Lloyd Morgan's lectures last year, some questions occurred to me which have been recalled by his article under the above heading in the January number of the *Journal*, and, in spite of his kindness in dealing with them at the time, I think that some further discussion may be of interest.

I shall in this letter confine myself to "emergents in respect only of their spatio-temporal qualities," and leave on one side the emergence of the secondary qualities, what Mill expresses by saying, "We cannot but introduce, as one element of the explanation, the proposition that some antecedent or other produces the sensation of white" (*System of Logic*, Book III, Ch. xiv, § 2). This question is most interesting and important, but the two can, at least to some extent, be dealt with separately, and it seems better to consider the simpler first.

I first wish to deal with the exact significance of the phrase "different modes of relatedness." In *Emergent Evolution and Instinct and Experience* we seem to be led to the hierarchy, vapour, liquid, crystal, living matter, and I will consider the first step from vapour to liquid. (I am not sure that Professor Lloyd Morgan would still regard this change as a case of emergence, but he certainly describes it as such in his writings, and, if he has changed his opinion in this way, the fact appears to be such as should be expected from my argument.) Van der Waals's equation was devised to represent the behaviour of substances in a state of vapour, but was then found to express the change from the gaseous to the liquid state. That is, the modes of relatedness in the two states appeared to be different, but the accurate formulation of the one proved to imply the other, or, in other words, a mode of relatedness exists in both states which is the leading characteristic of one, but requires careful investigation to detect it in the other. This seems to be something more than "bevelled off the sharp angles of the new departure" (*Emergent Evolution*, p. 66). I do not know of any other instance of such a striking discovery of the connection between two states of a substance, but it is possible to suggest ways in which such may occur. For instance, it may happen that the differential equations giving the motions of the molecules of a liquid turn out to be of such a nature that for certain values of the parameters the solutions alter their character, as Van der Waals's equation does for the critical temperature, and take the form of stable oscillations about the points of a space-lattice. Such a change would express the passage from liquid to crystal.

As we have no description of the relations of the molecules of living matter comparable to the theory of the space-lattice in the case of crystals, it is impossible to foreshadow the step from crystal to living matter in this way. Probably, as Professor Boycott has told us, there are a great number of steps, and it is hard to say where the term "living" becomes appropriate or ceases to be so. When we have a clear formulation of the relations of the molecules in a colloidal solution, we shall have some idea of the direction in which to look for the first step.

What these considerations would suggest is that different modes of relatedness may allow of a common expression, so that prediction of one by means of the other is possible, just as the singular solution of a differential equation is of a different type from the ordinary solutions, but can be derived from them. In this case, if "emergent" is to imply "unpredictable," the terms "emergent" and "resultant" would refer not so much to the facts themselves as to the state of our knowledge at any time and to the manner in which it has been gained; and the essence of mathematical physics would be the conversion of emergents into resultants. There may, of course, be a limit to this process, but it is impossible to say where it is,

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and the boundary between the two is always moving, and always in the same direction.

There is another passage in Professor Lloyd Morgan's article as to which I should like to ask a question. On p. 32 he says: "Now if there be a hierarchical order, and if this order be evolutionary, we seem to be justified in the *empirical* assertion that the order of nature has changed in the course of hierarchical advance. Does this imply any disorder in nature? When once for all we give up the notion, which some are so loth to surrender, of a static order of nature, fixed and irrevocable, does it follow that a changing order must be disorderly? We claim that, far from disclosing anything disorderly, emergent evolution discloses an orderly advance in a changing order of nature." Such an argument seems to me merely to postpone the difficulty. The whole of the earlier portion of the section implies that *within* any given order there is no emergence and events are predictable; emergence occurs in the change or advance from one order to another. But if order is thus defined, what is an orderly advance? I can give no meaning to it other than that the different *orders* are predictable or non-emergent, in which case an order could be known in advance, and therefore the events in the order. This would agree with the preceding argument. In other words, does not order in any sense imply in some way and at some point "static order, fixed and irrevocable"? Of course, any theory as to the nature and position of this static order, any suggestion that a claim to have discovered it is premature, is worth consideration, but the complete denial of it appears to me inconsistent with the idea of order in any sense.

There are many other interesting points suggested by Professor Lloyd Morgan's article, but the two which I have raised seem to me among the most important, and I shall be very grateful for further light on them from someone who has understood him better than I have done.

Yours faithfully,

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TO THE EDITOR OF THE *Journal of Philosophical Studies*.

THE ONE AND THE MANY

SIR,

May I be permitted to call attention to what I believe to be a misrepresentation of Hegel by Mr. C. E. M. Joad in the January issue in his essay under the above title? The mistake is important and serious owing to the extent to which Mr. Joad relies upon it for his disbelief that the universe is a unity. He has chosen to criticize three schools of thought on this question, in which he has included Hegel, and has attempted to dispose of them. Whether or not he thinks that this disposes of all possible views of the unity of the universe he does not say, and I may wrong him if I surmise. He has a right to suspend his approval of any theory in the absence of cogent justification by other thinkers without going out of his way to seek more than three, and even in the absence of cogent reasons of his own against the theory. I would not say he can go any further, or have the right on such premises to assert a positive denial. But I will not say he has done that. He excuses himself through lack of space from explaining to quite what extent his incredulity is positive. But if Hegel did not think about the universe as Mr. Joad alleges that he did, there still remains one theory about the unity of the universe for Mr. Joad to examine, and that is Hegel's.

According to Mr. Joad, if there are many things in the universe its reality is not a unity, and Hegel for one is forced either to a contradictory and meaningless conception of what a unity is, or to hold that the appearance of many things is an illusion. Instead of contenting himself with examining the possibility of the first catastrophe. Mr. Joad assumes the second. It is precisely a choice which proves a catastrophe to itself. An ingenious demonstration that the existence of such illusion involves a dualism in Hegel has to go by the board for no other reason than that Hegel did not assert it. If I understand McTaggart, Hegel asserted that the unity which characterizes the whole of reality is differentiated into persons and he believed that they