D. LEWIS ON CAUSATION

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The purpose of this paper is to maintain the thesis through analysis that Lewis' counterfactual account of causation is not logically well grounded because the relationship which he assumed between counterfactual dependences and causes does not hold much water.

Lewis D. in his article entitled "Causation" [1] claims that an event c causes an event e only when e depends counterfactually on c and not otherwise. If e does not depend counterfactually on c, he says, c ceases to be the cause of e. This view of his is quite clear from the following statements which he firmly upholds in the article cited above.

(i)   An event c is a cause of an event e iff e depends causally on c.

(ii)   An event e depends causally on an event c iff the family o (e), ~o (e) depends counterfactually on the family o (c), ~ o (c).

(iii) The family o (e), ~o (e) depends counterfactually on the family o(c),~o (c) iff the counterfactual conditionals o (c) $\Box\!\!\rightarrow$ o (e) and ~o (c) $\Box\!\!\rightarrow$ ~ o (e) are true,

(iv)   The counterfactual conditionals o (c) $\Box\!\!\rightarrow$ o (e) and ~o (c) $\Box\!\!\rightarrow$ ~o (e) are true. iff o (c). ~o (e) and ~o (c). o (e) are not true.

If this be the case, then the first counterfactual conditional o (c) $\Box\!\!\rightarrow$ o (e) would be true on the Lewis' account only when e occurs in the occurrence of c. If e does not occur in the presence of c, the counterfactual conditional o (c) $\Box\!\!\rightarrow$ o (e) would be false and in that case c cannot be said to be the cause of e; not can e

be said to be dependent causally on c. Because c can be said to be the cause of e or e can be said to be dependent causally on c on his account only when e depends counterfactually on c. Likewise, the second counterfactually conditional ~ o (c) $\Box\rightarrow$ ~o (e) would be true on the Lewis' account only when e does not occur in the absence of c. If e occurs in the absence of c, the counterfactual conditional ~o (c) $\Box\rightarrow$ ~o (e) would become false and in that case e cannot be said to be dependent counterfactually on c. Because the non-occurrence of e can be said be dependent counter factually on the nonoccurrnce c only when c and e do not actually occur. So if the non-occurrence of e does not depend counterfactually on the non-occurrence of c, c cannot be said to be, the cause of e; nor can e be said to be dependent causally on c. Thus for Lewis the truth of the causal statement'c caused e' consists in the fact of the truth of counterfactual conditionals (c) $\Box\rightarrow$o (e) and ~o (c) $\Box\rightarrow$~o (e). In other words, for him the truth of counterfactual conditionals o (c) $\Box\rightarrow$o (e) and ~o (c) $\Box\rightarrow$ ~o (e) entails and is entailed by the truth of the causal statement'c caused e'.

But then the question here arises: Does the truth of counterfactual conditionals o (c) $\Box\rightarrow$o (e) and ~o (c) $\Box\rightarrow$ ~o (e) really entail and is entailed by the truth of the causal statement 'c caused e' ? So far as the truth of first counter factual conditional o(c) $\Box\rightarrow$o (e) is concerned, it does entail to my mind the truth of the causal statement 'c caused e'. Because it becomes true only when e occurs in the occurrence of c. If e does not occur in the presence of c, it becomes false and in such case c cannot entail e which is logically required for the first counterfactual conditional o (c) • $\rightarrow$o (e) to be true. But the occurrence of e in the presence of c would be possible only when the occurrence of c gives guarantee for the occurrence of e and not otherwise. If the occurrence of c does not give guarantee for the occurrence of e, the occurrence of e cannot be said to be following from the occurrence of c. But the occurrence of c can give guarantee for the occurrence of e only when the occurrence of c is a sufficient condition for the occurrence of e and not otherwise. If the occurrence of c is not a sufficient condition for the occurrence of e, the occurrence of e cannot be said to be following from the occurrence of c even if c constitutes a necessary condition for the occurrence of e. In such a case the occurrence of c fails to give guarantee for the occurrence of e. When the occurrence of c fails to give guarantee for the occurrence of e, the occurrence of e cannot be said to be following from the

occurrence of c and in such case the first counterfactual conditional o (c) $\square\rightarrow$ o (e) becomes false. That is the reason why for it to be true, the occurrence of c will have to be assumed as a sufficient condition for the occurrence of e. Then and then alone it could validly be said that the truth of the first counterfactual conditional o(c)$\square\rightarrow$o (e) entails the truth of the causal statement 'c caused e' and not otherwise. But assuming this, however, does not give any guarantee for it that e cannot be caused by anything other than c. So unless it is proved that there is no cause other than c which causes e, c cannot be said to be the only cause which causes e. And this cannot be proved on the ground of this assumption that c is a sufficient condition for the occurrence of e. The reason why it cannot be proved is that because c's being a sufficient condition does not by itself rule out the logical possibility that e cannot be caused by anything other than c which is logiclly required for the second counterfactual conditional ~o (c) $\square\rightarrow$ ~(e) to be true. If this be the case, then the truth of the first counterfactual conditional cannot be said to be entailing the truth of the second counterfactual conditional which Lewis uses to define the notion of causation. Although it is true that Lewis throughout in his analysis of causation does not say any where that the truth of o(c) $\square\rightarrow$ o (e) entails the truth of ~o (c) $\square\rightarrow$ ~(e). But he does definitely use the second counterfactual conditional to define the notion of causal dependence. For him an event e depends causally on an event c just in case c had not occurred, e would not have occurred. And this claim of his to my mind does not hold much water because it does not consitute an essential condition for c to be the cause of e. Because the truth of the first counterfactual conditional does independently capture the meaning of causal dependence which c requires for it to be the cause of e. But in spite of this Lewis preferred to choose the second counterfactual conditional to define the notion of causation. Here one might ask this question: Why did Lewis do so? No doubt, there might have been some good reasons, best known to him, behind his choosing of the second counterfactual conditional to define the notion of causation, But one of the reasons which comes to my mind at the moment is this; He must have thought that when we use the second counterfactual conditional to define the notion of causation, it not only captures the notion of causal dependence but also eliminates the problem of over determination. However, whatever the reasons there might have been the fact still remains that

Lewis preferred to choose the second counterfactual conditional to define the notion of causal dependence which he thinks holds only among the actual events. For him e depends causally on c iff, if c had not been e would not have occurred. It is on this ground Lewis claims that the truth of ~o (c) $\Box\!\!\!\rightarrow$ ~o (e) entails the truth of 'c caused e'. But then the question arises: Is it a valid claim ? The answer to my mind seems to be negative because of the following reasons.

The second counterfactual conditional ~o (c) $\Box\!\!\!\rightarrow$ ~ o (e) could be said to be true only when e does not occur in the absence of c. If e occurs in the absence of c, it cannot be said to be true. It becomes false. But the non-occurrence of e in the absence of c would be possible only when c constitutes as a necessary condition for the occurrence of e and not otherwise. If c does not constitute as a necessary condition for the occurence e, the occurrence of e would be possible to conceive in the absence of c. So for it to be true, the occurrence of c will have to be assumed as a necessary condition for the occurrence of e. Then and then alone the second counterfactual conditional ~ (c) $\Box\!\!\!\rightarrow$ ~o (e) could be said to be true and not otherwise. But assuming this, however, does not prove this point that the truth of ~ o (c) $\Box\!\!\!\rightarrow$ ~o (e) entails the truth of 'c caused e'. It only proves that e cannot occur in the non-occurrence of c and to say this is not equivalent to saying that e occurs in the presence of c. If this be so, then the truth of ~(c) $\Box\!\!\!\rightarrow$ ~o (e) neither entails the truth of 'c caused e' nor the truth of o (c) $\Box\!\!\!\rightarrow$ o (e). Furthermore, when we say 'c caused e', we simply mean to say that the occurrence of e follows causally from the occurrence of c and to say this is not to say that c is necessarily a necessary condition for the occurrence of e which the second counterfactual conditional ~o (c) $\Box\!\!\!\rightarrow$ ~o (e) logically requires for it to be true. In fact for c to be the cause of e, it is not at all logically required that c must be a necessary condition for the occurrence of e as Lewis says. Because to say that certain conditions are necessary and certain conditions are not is not to say that the former are causes while the latter are not. To think so is to commit a mistake because the notion of cause as such does not essentiaòy include in it's meaning the notion of a necessary connection. What it includes in its meaning is the force of causing and the force of causing does not essentially include in its meaning the notion of a necessary connection. Because a thing can be conceived to be having the property of the force of

causing certain events without being necessarily connected with them. If this is so, then from this it is quite clear that the causal statement 'c caused e' cannot be said to be logically equivalent to c is necessarily a necessary condition for e. Because e can happen in the presence of c even when c is not a necessary condition for e. If this be the case, then for 'c caused e' to be true it is not at all logically required that the second counterfactual conditional ~o (c) $\square\rightarrow$ ~o (e) must be true. Because 'c caused e' can be true even when the second counterfactual conditional ~ o(c) $\square\rightarrow$(e) is not true. This possibility can be ruled out only when it is assumed that c causes e iff the second counterfactual conditional ~o (c) $\square\rightarrow$ ~o (e) is true and not otherwise. But assuming this is to commit a mistake. Moreover, to say that c is a necessary condition for e is not to say that c gives guarantee for the occurrence of e. Becuse what is a necessary may or may not be a sufficient condition for the occurrence of a thing which is logically required for it to happen. So if the occurrence of c is not a sufficient condition for the occurrence of e, e cannot be said to be following from c even if c constitutes as a necessary condition for the occurrence of e. And in such a case the truth of the causal statemnt 'c caused e' cannot validly be claimed to be following from the truth of the counterfactual conditional ~o (c) $\square\rightarrow$ ~o (e) as Lewis does. In fact the assumption on which the truth of the second counterfactual conditional ~o (c) $\square\rightarrow$ ~o (e) rests, the truth of the causal statementc' caused e' does not rest on it. For proving the truth of the second counterfactual conditional ~o (c) $\square\rightarrow$ ~o (e), we will have to assume that c is a necessary condition for the occurrence of e which we need not assume for proving the truth of the causal statement 'c caused e'. Because when we say 'c caused e', we simply mean to say that e follows causally from c and e can follow causally from c only when the occurrence of c gives guarantee for the occurrence of e and c does give guarantee when c possesses enough action force for causing e without even being having any necessary connection with e. If whatever I have said is true, then from this it is quite clear that the truth of the second counterfactual conditional ~o (c) $\square\rightarrow$~ o (e) neither entails nor is entailed by the truth of the causal statement 'c caused e' as Lewis says. When we consider two sequences family of the form o (e), ~o (e) and o (c),~o(c) where c and e are distinct (non-overlapping) events, the former sequence depends counterfactually on the latter just when o (c) $\square\rightarrow$o (e) and ~o (c) $\square\rightarrow$ ~o (e) are true. When two such

counterfactual conditionals hold, says Lewis, c is a direct cuses of e and not otherwise. Which means that if two such counterfactual conditionals do not hold, c cannot be said to be the direct cause of e on the Lewis account. However it does not matter for Lewis whether a cause of an event is a direct or an indirect, it is nonetheless a cause of the event provided that the event counterfactually depends on it. In other words, when something is either a direct or an indirect cause of an event, it is nevertheless a cause of the event. So for any thing to be a cause, it need not be a direct cause according to him. If this be the case, then for c to be the cause of e, c need not satisfy the truth conditions of the both first and second counterfactual conditionals, that is o (c) $\Box\!\!\!\rightarrow$ o (e) and ~o (c) $\Box\!\!\!\rightarrow$ ~o (e). Because an event c can be the cause of an event e if the sequence of e depends counterfactually on the sequence of c and the sequence of e does depend counterfactually on the sequence of c when the first counterfactual conditional o (c) $\Box\!\!\!\rightarrow$ o (e) is true and for that the second counterfactual conditional ~o(c) $\Box\!\!\!\rightarrow$ ~o (e) need not be true. This cannot be said on the Lewis' account that for c to be the cause of e both such counterfactual conditionals o (c) $\Box\!\!\!\rightarrow$ o (e) and ~o (c) $\Box\!\!\!\rightarrow$ ~o (e) must be true. If it were the case, Lewis would not have drawn the distinction between direct and indirect causes of an event. But since he draws the distinction between direct and indirect causes of the history of an event, it cannot be said on his account that c to be the cause of e, e must depend counterfactually on o(c) and ~o (c).

In fact, so far the nature of the relationship of counterfactual dependences is concerned, it is the same in his view in both the forms of such counterfactual conditionals, o (c) $\Box\!\!\!\rightarrow$ o (e) and ~o (c) $\Box\!\!\!\rightarrow$ ~o (e). They differ only in regard to their forms of components on which the counterfactual dependence operator operates and not in the nature of their relationship. And this condition c fulfils for to be the cause of e when the occurrence of e depends counterfactually on c, that is, o (c) $\Box\!\!\!\rightarrow$ o (e) is true. So c can be said to be the cause of e when the occurrence of e rather than not-e depends counterfactually on the occurrence of c rather than not-c and c and e are both events. Above all, the notions of causation and counterfactual dependence are not co-extensive notions. The notion of counterfactual dependence is a wider notion than the notion of causation. Because it also holds among such propositions which do

not have any concern with any occurrence of events. For example, consider this proposition "If wishes were horses (they are not), then beggars would ride". This proposition no doubt is a counterfactual proposition. But its component propositions do not have any concern with any occurrence of events. If this be the case, then it is wrong to say that the truth of counterfactual conditional always entails the truth of the causal statement as Lewis claims. Not only this, even if we assume, for the sake of argument, that counterfactual dependences hold only among occurrences, the occurrences need not be the occurrences of causal events. They may be numerical occurrences. For example, change in the volume of gases depends counterfactually on the change in the temperature, and yet their relation is not a relation of cause and effect. The Boyle-Charles law of gas is not a causal law because it does not assert that a change in the temperature is followed (or preceded) by some change in the volume or in the pressure. It only asserts that a change in temperature is inconcurrent with changes in pressure or volume or in both. But the law nonetheless does satisfy the conditions of counterfactual dependence. So to define the notion of causation in terms of counterfactual dependence is to commit a logical mistake because both the notions are not co-extensive as Lewis does. For him counterfactual dependence is causation. This view of his is quite clear from the statements of (i), (ii), (iii) and (iv) themselves. While the fact is that the notion of causation cannot be analysed properly in terms of counterfactual dependence which is defined in terms of the notion of necessity. Even if we assume for the sake of argument that counterfactual dependence is causation, it does not establish the point that causation holds only among events as Lewis defines. Because it also holds between objects and events. The agents, for example, do cause actions and actions are a kind of events. But on the ground of this we cannot say that the agents are events. The agents are not events. They are substantive beings. We cannot analyse them in terms of events. Furthermore, to assume that a cause necessitates an event is not to say that a cause is a necessary relation of an event because the former is possible to conceive even without conceiving the latter which would not have been possible if causes were necessary connections. When it is said 'e follows causally from c', from this it does not necessarily follow · that c from which e is said to follow is necessarily connected with e. It follows only when we tag the notion of causation with the truth of such counterfactual

conditional ~o (c) $\Box\rightarrow$ ~o (e) and not otherwise. But to tag the notion of causation with it is to commit the same mistake as that of Lewis as the course of events gets modified by some unforeseen interfering factors of which we may not have any knowledge at all. This possibility we can never rule out. Even if we grant for the sake of argument that every event necessarily has a cause, it does not follow from this that what causes is necessarily connected with that what follows from it. It also does not follow that the cause of a cause also has a cause. The cause of a cause need not have any cause. This is prefectly quite possible. Action of the force of causing is such a kind of property which does not essentially involve in its meaning the notion of a necessary connection or condition.

In the view of above discussion, thus, we can say that Lewis' counterfactual account of causation is not logically well grounded because the relationship which he assumed between them does not hold much water.

NOTES

1.   Lewis, D. 'Causation', *Journal of Philosophy* (Vol. 70), 1973, pp. 556-567.