# The Revival of Causal Realism From Husserl to the Present: Some Recent History and a Critical Commentary

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Abstract: The paper considers the problems posed by the recent revival of causal realism in the 1970s by a number of philosophers--principally D. M. Armstrong's version. It points to basic flaws in the view and attempts to defend it and also shows that what has recently been proposed simply repeats turn of the century views of Husserl, Broad and McTaggart. It ends by proposing an alternative form of causal realism compatible with Hume's insights.

Recent years have seen the revival of anti-Humean analyses of causality that appeal to a basic causal relation or nexus. D. M. Armstrong has been one of the most articulate advocates of such a view holding that a true claim of the form

'(x)(if Fx then Gx)' is a lawful generality

has as its truth maker a fact involving a basic "higher order" relation of nomic necessity holding between the universal properties F and G. Believing that his view, expressed in 1978, was anticipated by F. Dretske and M. Tooley, in 1977, he has labeled the view the Dretske-Tooley-Armstrong analysis. Actually the view was prevalent in the early part of the present century and set forth by Husserl, McTaggart and Broad.

Such an anti-Humean view was set out as part of Husserl's account of laws of essence. For Husserl, objects have essences, which are universal properties. Such essences stand in various relations, which in Russellian terms, would be characterized as being of a higher type or order, as "incompatibility" is sometimes taken as a relation between properties--different colors, for example, where colors are taken as universal properties. Thus some, rejecting a concept of negation, suggest analyzing '¬p' or '¬Fx' in terms of '(Eq)(q is true & q is incompatible with p)' or '(EØ)(Øx & Ø is incompatible with F)', where <u>incompatibility</u> takes properties or propositions as terms.

Husserlian laws of essence relate essences. Though Husserl writes of a relation, **R**, as a particular essence relation, holding of the essences A and B, this notation is, as it was in Russell in the 1905 "On Denoting," ambiguously used to speak of the second order fact **R**(A, B) and the second order, or essence, relation **R**. (Russell, however, in one of his early papers on Meinong, clearly distinguished between the two in criticizing Meinong for not doing so.) Thus the predicate '**R**' is used both for the relation between the essences A and B and for the higher order fact that A stands in **R** to B. Suppose A and B are qualities of length, where A is a longer length than B. An individual instance of A, an object of length A, stands in the relation **I** (the relation of instantiating such a property) to A. With **I*** as the converse of the relation **I**, and hence the relation from an essence to an object, the relation of being instantiated by, where A stands in **R** to B, Husserl also has a relation that is a relative product of **I**, **R** and **I***. This we can represent by '**I/R/I***'.[1] This relation then obtains between an object a, that is an A, and an object b, that is a B, so that we have 'a**I/R/I***b' as the analysis of 'a is larger than b'. Husserl also recognizes both analytic and synthetic laws of essence, which depend on the kinds of essences involved--formal concepts (part-of) or material concepts (green)--and the "necessary" link between laws of essence, which are "higher order" in that they involve relations between universal essences. Such laws of essence entail "specifications" that also embody necessary connections. That is why he can hold "If the law of essence A**R**B holds, it is necessary that a**I/R/I***b holds." Thus consider the case of a law of essence: green and red are "incongruent" or "incompatible," or simply "different", since here the instances of the essences for Husserl are color quality instances, and not ordinary objects, i. e. they are "tropes" in modern parlance. From the law of essence, green and red are incongruent, we obtain two kinds of specifications. First, we have 'this green (instance) is incongruent to this red (instance)'. Second, we have a "general fact" expressed by 'for any x and any y, if x is an instance of green and y is an instance of red, then x is incongruent to y'. These "specifications" are, for Husserl, necessary consequences of the law of essence. And the general fact, as a specification of a synthetic a priori law of essence, is itself a synthetic necessity.

But not all such specifications follow from a priori laws of essence. Thus, consider the familiar case of the essences, or universal concepts, is a bird and has feathers. Here we have a contingent causal relation between such essences, and not a necessity or law of essence. Thus there is a contingent connection, say **L**, that relates the essences such that we have the higher order relationship expressed by '**L**(is a bird, has feathers)'. This would entail both the contingent specification expressed by 'this bird has feathers' as well as the contingent general fact expressed by 'for any x, if x is a bird, then

[1]I borrow the notation, with slight variations, from the Swedish phenomenologist Ivar Segelberg's discussion of Husserl in I. Segelberg, Begreppet Egenskap (Stockholm: 1947), 91-93

x has feathers'. Here I am concerned with questions concerning causality, general facts, higher order "laws" and laws of essence in Husserl's sense, and problematic features of the recent revival of the classic view that causal connections are grounded in relations among forms or natures. (These natures have sometimes been taken as Divine Ideas, as in Aquinas' two-fold conception of natural law, in the sense of scientific laws governing the way things are and of moral laws governing the way things ought to be, given the nature of man and the latter's relation to God).

Armstrong has recently invoked a basic causal relation of natural necessity to defend his variation of the Platonic-Thomist-Husserlian analysis of causal laws.[2] With **N** as such a modal relation of natural necessity, an essence relation in Husserl's sense, Armstrong assumes that a higher order fact of the form **N**(F, G) is <u>both</u> an atomic higher order fact <u>and</u> a universal property, in order to derive instances like 'a's being an F caused it to be a G', as well as the universal generality, 'all F's are G's', from such a higher order atomic fact. This is his version of Husserl's distinction between a law relating essences, like F and G, and a necessary connection that is involved in the two kinds of specifications that are entailed by such a higher-order fact or law.[3] For Armstrong, a's being an F will necessitate its being a G since it instantiates the universal <u>property</u>, **N**(F, G), while the latter property, when also taken as a higher order <u>fact</u>, grounds the truth of the generality being a statement of law and not an accidental generality.

What is responsible for Armstrong's problematic construal of **N**(F, G), as <u>both</u> a universal property <u>and</u> a fact, is his ambiguous use of the relation **N**. For, in taking **N** as a higher type relation, he takes it in two ways. In one way it is a higher type dyadic relation, so that **N**(F, G) is an atomic fact. Construed in another way, **N** is a functor that combines universal properties, say F and G, to form another (complex) universal--<u>being caused to be G by being F</u>. Such a complex universal is a first-order universal applying to particulars. Construed in this second way, **N** is like &, where the latter is thought of as a conjunctive functor that forms conjunctive properties, say F & G (being an F and a G),

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[2]D. M. Armstrong, <u>What is a Law of Nature</u>, (Cambridge: 1983).

[3]It should be kept in mind that the use of the phrase 'higher order object', derived from the Brentanist tradition, is different from that involved in speaking of a higher order fact along Russellian lines. But Husserl's laws of essence are clearly Russellian higher order facts involving relations among universals--essences for Husserl.

out of properties. It is what Gustav Bergmann called a 'quasinexus' in his 1967 book, Realism: A Critique of Brentano and Meinong, that recognized complex universal properties, as Armstrong later does. Fusing, these two distinct ways of construing the causal connection **N**, Armstrong has **N**(F, G) as a fact, a Husserlian "law of nature" that grounds 'all F's are G's' being a statement of law, as opposed to a mere accidental generality, and as a property that is exemplified by particulars. This second way of taking it enables him to achieve the "descent" from a higher order fact to a first order generality and its instances--Husserl's two-fold "specification" of a universal law.[4] The point is simple. Taking the higher order fact **N**(F, G) as the truth ground for the statement of law, and expressing the latter as '**N**(F, G)', he should be able to derive both '(x)(if Fx then Gx)' as well as 'a's being an F causes it to be a G' from '**N**(F, G)'. But, there is no way to do either, unless he simply reads such consequences into '**N**(F, G)'.

Husserl distinguished between a priori "laws of essence," such as "green is incompatible with red," and empirically necessary "laws of fact."

> It is in the first place obvious in general that objective necessity is as such tantamount to a being that rests on an objective law. An individual matter of fact, considered as such, is contingent in its being: that it is necessary means that it stands in a context of law. What prevents its being otherwise is the law which says that ... it is universally so, and with a lawful universality. ....'Natural laws', laws in the sense of the empirical sciences, are not laws of essence (ideal or a priori laws): empirical necessity is no necessity of essence.[5]

> It is no doubt clear from the start that natural laws in the ordinary sense

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[4]Armstrong's construal of '**N**' in a two-fold way supposedly rebuts criticisms of his earlier taking **N**(F, G) as simply a higher order atomic fact. For a discussion of the problems with his early formulation see H. Hochberg, "Natural Necessity and Laws of Nature," Philosophy of Science, 1981, 48, 3, and Armstrong's and J. Earman's consideration of that criticism in J. Earman, "Laws of Nature: The Empiricist Challenge," in R. J. Bodan, ed., D. M. Armstrong (Dordrecht: 1984), 221, and Armstrong's response to Earman's essay, 266-268.

[5]E. Husserl, Logical Investigations, trans. J. N. Findlay, v. 2, (London: 1970), 446.

> do not belong to this a priori, this pure universal 'form' of nature, that they have the character, not of truths of essence, but of truths of fact. Their universality is not a 'pure' or 'unconditioned' universality, and just so the 'necessity' of all ... which fall under them is infected with 'contingency'. Nature with all its physical laws is a fact that could well have been otherwise. If we now treat natural laws, without regard to their infection with contingency, as true laws, and apply to them all the pure concepts we have formed, we arrive at modified Ideas of empirical 'foundation', of empirical wholes, empirical independence and non-independence. If, however, we conceive of a factual nature as such, of which our own nature is an individual specification, we arrive at universal Ideas, not bound down to our nature, of an empirical whole, empirical independence, etc. These Ideas are plainly constitutive of the Idea of a nature in general, and must fit together with the essential relations pertaining to them, into a universal ontology of nature. [6]

What he does is take natural laws, in one sense, to be contingent, or factual, relations between essences or universal Ideas, and hence not a priori--neither analytic a priori nor synthetic a priori laws of essence. But all such higher order "laws" relating universals, whether laws of essence or contingent, factual laws governing "our" nature (i. e. our world), entail specifications to causal laws in another sense, expressed by universal generalizations such as 'Every F is empirically necessitated to be a G' and further specifications to individual cases such as 'This being an F empirically necessitates its being a G'. But, just as with Armstrong later, Husserl provides no account of the entailment involved in deriving the universal generalization in either the case of a priori laws of essence or of natural laws. In Husserl's case there is a simple explanation for this. He thinks of the specification of the universal generalization from the higher order law of essence and the specification of a particular instance from the universal generalization as being the same sort of thing. Just as the going from a universal generalization, expressing a causal connection, to an instantiation of it can be seen as a logical specification, so the going from a higher order relational statement to a universal generalization, with a quantifier ranging over "instances," is seen as a specification. The formal difference is overlooked since Husserl thinks in terms of specification being an application to particular existential instantiations--in the one case the specification is to a particular existent or existents; in the other case the specification is to all particular

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[6] Husserl, 1970, 486.

existents. Husserl's taking a causal relation to hold of properties persisted into a later work, as is evident from a passage in the 1911 Philosophy as Rigorous Science:

> They are what they are only in this unity; only in the causal relation to or connection with each other do they retain their individual identity (substance). and this they retain as that which carries "real properties." All physically real properties are causal. .... Real properties ... are a title for the possibilities of transformation of something identical, possibilities preindicated according to the laws of causality.[7]

It is interesting that, like Armstrong, Husserl takes physically real properties to be causal properties. Taking real properties to be causal is one theme involved in Armstrong's road to materialism. Phenomenal qualities, not being causal, are not real and, hence, phenomenal entities and events must be construed in terms of physical things and states.

Armstrong accomplishes the trick of "specification" by his two-fold ambiguous reading of '**N**(F, G)'. It is ambiguous in one sense as it is both a sentence and a complex predicate. It is ambiguous in another sense in that to recognize **N**(F, G) as an atomic fact is to take every particular to be such that if it is an F then it is caused to be a G. This not only takes the second order fact to be both a fact and a property, but involves postulating that the fact **N**(F, G) is the truth maker for three distinct claims: '**N**(F, G)', '(x)(if Fx then Gx)' and '(x)**N**(if Fx then Gx)', where the latter is read as 'everything is such that its being an F causes it to be a G'. Armstrong is aided in the illicit two-fold construal of '**N**(F, G)' by his treating universals as "types of facts" or "gutted states of affairs" and using the Fregean style notation of '...'s being an F' or 'Fx' in place of 'F'. As the universal F is taken to be what all facts containing F have in common, rather than what the particulars in the facts have in common, F is taken to be more perspicuously represented by 'Fx'. Thus he rewrites '**N**(F, G)' in his later writings as '**N**(Fx, Gx)', which would parallel the notation 'x**U/R/U***y' that I used for the form of Husserl's specification of an essence relation, if we replace the constants with individual variables. But, unlike Armstrong, we must be clear about what should be separated--(i) A**R**B, the higher order fact; (ii) **U/R/U***, the higher order relation that is a relative product "containing" **R**; (iii) A/**R**/B, the relation holding between individuals, like a and b; (iv)

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[7]E. Husserl, Philosophy as Rigorous Science, in Phenomenology and the Crisis of Philosophy, trans. Q. Lauer (New York: 1965), 104.

a/A/**R**/B/b, the fact that a stands in that relation to b. Armstrong, by contrast, consistently scrambles what must be unscrambled.

Armstrong not only takes **N**(Fx, Gx) in different ways, as a fact and as a property, he construes the "relation" **N** in different ways. For it is not simply a relation that obtains between Fx and Gx, as he implicitly takes **N** as a functor that combines such universal properties, Fx and Gx, to form another (complex) universal--<u>being caused to be G by being F</u>. That is how he arrives at using **N**(Fx, Gx) as a complex universal that is a first-order universal applying to particulars. Taken in this second way, **N** would be like &, if the latter were thought of as a conjunctive functor that forms conjunctive properties, say F&G (being an F and a G), out of properties or a conjunctive fact out of conjuncts. Fusing, these distinct roles of the causal connection **N**, Armstrong has **N**(Fx, Gx) as a fact, a Husserlian law of nature that is the ontological ground for 'all F's are G's' stating a causal law, as opposed to an accidental generality, and as a property that is exemplified by particulars. This ambiguous use of **N** is what gives the illusion that he arrives at the specification to a first order generality and its instances. But, like Husserl, Armstrong provides no account of the entailment involved in deriving the universal generalization. What would be needed, in Carnap's terms, are additional semantical rules that would be added to the "logical" rules of the system.

If we pry apart what he lumps together, we see that he has **N**(Fx, Gx) as a higher order fact; **N**(Øx, Íx) as a higher order relation, with 'Ø' and 'Í' as variables (as 'x' is a variable in 'Fx' and '**N**(Fx, Gx)'), that relates universals like Fx and Gx--which is what '**N**' abbreviates in its role as a higher order relation; **N**(Fx, Gx) as a first order universal that "contains" the relation **N**(Øx, Íx) and the universals Fx and Gx; **N** as a <u>functor</u> (like Bergmann's quasinexus) forming the universal **N**(Fx, Gx) from Fx and Gx. Using '**N**(Fx, Gx)' and focusing on the role of the variable, he can treat '**N**(Fx, Gx)' as a predicate representing a complex monadic universal, as well as an atomic sentence stating that the "type" Fx stands in **N** to the "type" Gx. As a predicate, '**N**(Fx, Gx)' is like 'Fx & Gx'; as a sentence it is not, for 'Fx & Gx' is not taken by Armstrong to be a higher order atomic sentence stating that Fx and Gx stand in the relation &. Speaking of **N**(Fx, Gx) as a type of fact, while also being a fact, allows a's being an F being caused to be a G to be an instance of the type. Armstrong can then claim that both '(x)(if Fx then Gx)' and 'a's being an F caused it to be a G' <u>follow</u> from '**N**(Fx, Gx)' . But this simply reads the specifications into the higher order fact and takes the higher order, purportedly primitive, relation **N** to be such that '**N**(Fx, Gx)' entails '(x)**N**(if Fx then Gx)' as well as '(x)(if Fx then Gx)'.

If **N** holds among facts like Fa and Ga, as it also does for Armstrong, a non-atomic causal fact, **N**(Fa, Ga), expressed by 'a's being F causes it to be G' is introduced along with a further role for **N**. It is non-atomic in the straightforward sense that it has other facts, Fa and Ga, as constituents. This reveals a further equivocation in Armstrong's view that his new Fregean symbolism covers over. He takes '**N**(Fa, Ga)' to ascribe a monadic property to a, whose truth maker is the non-atomic first-order fact **N**(Fa, Ga). This shows that the causal connection he appeals to is not merely expressed by '**N**', but by **N**(Fx, Gx)', which is construed as representing a property of individuals or as a form or type of causal facts. This shows that he implicitly uses **N**(Øx, Íx) as yet a further entity (besides its role as a higher order relation between universals like Fx and Gx), for it is also a triadic relation (and perhaps a function as well) of mixed type----a relation holding of two properties and a particular, Fx, Gx and a, in the present example, and even as a further causal conditional (complex dyadic relation?) involving a universal quantifier, (x)**N**(if Øx then Íx), that connects universals into causal generalities. All his Fregean notation does is obscure the complexity involved in his view.

The complexity of his view and his doing what he does is covered over by his using '**N**(Fx, Gx)' and focusing on the role of the variable 'x'. Thus, he can claim that '**N**(Fx, Gx)' is a predicate that is predicable of individuals, and hence represents a monadic universal, as well as a higher order atomic sentence asserting that the "type" Fx stands in **N** to the "type" Gx. He can treat it as a predicate as it appears to be like 'Fx & Gx', which is generally taken as a predicate (yet '&' is quite unlike '**N**' for Armstrong). Speaking of **N**(Fx, Gx) as a type of fact, while also being a fact, where a's being an F being caused to be a G is an instance of the type, such an instance is like a specification of a Husserlian causal "whole," uniting F and G. Hence the universal generalization '(x)**N**(if Fx then Gx)' holds, and this can be read as 'everything is such that its being an F causes it to be a G', as in the case of Husserl's specification to a general fact. This move in Husserl is something that Husserl slides over by the use of the symbols along the lines of my use of 'a' and 'A', where the former is understood to represent an instance of the universal essence A. Thus, like Armstrong, he covers illicit moves by a symbolism. As Husserl employs specifications, Armstrong claims that '(x)(if Fx then Gx)', '(x)**N**(if Fx then Gx)'and 'a's being an F caused it to be a G' <u>follow</u> from '**N**(Fx, Gx)'. But the inherent ambiguity of the symbolism does not help. He simply reads the specifications into the higher order facts and takes the higher order, purportedly primitive, relation **N** to be such that '**N**(Fx, Gx)' entails '(x)**N**(if Fx then Gx)' as well as '(x)(if Fx then Gx)'. Like Husserl, he does not explicate, as he cannot, the sense of 'entail' that is involved. He not only ends with a mysterious higher order relation, but with a mysterious entailment connection. Expressions like 'being an F being caused to be a G' are simply declared by Armstrong to represent universals that are common to supposed facts like: a's being an F being caused to be a G. The flexibility of ordinary language aids in obscuring what he really does, which is simply to take it for granted, as Husserl did, that a higher order fact, or natural law, entails its specifications.

We can construe Armstrong's causal connection **N** as a functor that forms a causal relation or causal conditional with a universal quantifier, as in a causal generality like: (x)**N**(if Fx then Gx). This involves a complex relation expressed by '(x)**N**(if Øx then Íx)', which trivially solves the problem of descending to or "specifying" instances, since one arrives at such instances by universal instantiation. Such a relation is a higher order dyadic relation which is exemplified by first order properties like F and G to form the causal fact: (x)**N**(if Fx then Gx), the truth maker for '(x)**N**(if Fx then Gx)'. Thinking along such lines we can solve the problem of deriving '(x)(if Fx then Gx)', by assuming an additional inference pattern like 'if **N**p then p' (along with a universal generalization rule) or conditional 'if (x)**N**( - - -) then **N**(x)( - - -)', which amounts to construing '**N**' along lines '**Nec**' is construed in some systems of quantified modal logic.[8]

If one rejects basic modalities, like **N**, and takes the ontological correlate of lawful generalities to simply be general facts, as I have suggested, causal necessity can then be construed in terms of the existence of certain general facts. In one sense this removes causal necessity from the world, but in another sense it does not, for it acknowledges general facts as laws. The appeal to general facts provides a basis for a realist's grounding of statements of lawful generality far less problematically than the appeal to an unexplicated necessary connection. Suppose we take general facts to ground the truth of generalizations like '(x)(if Fx then Gx)'. One can then hold that when the true generalization expresses a natural law, such a general fact is an instance of a property in virtue of which the fact is a law rather than a mere accidental generality. This would fit with Husserl's consideration of the various kinds of laws. As facts are entities, on such a view, it is natural to take them to have properties. Suppose lawful generality is construed in terms of a property of general facts, not as a relation among properties. One can then argue that given that a general fact exemplifies such a property, say L, we acknowledge the existence of the general fact, just as taking a particular to exemplify a property acknowledges the existence of the particular (at least if one does not follow Meinong). And, as there is such a general fact, '(x)(if Fx then Gx)' is true. Hence '(x)(if Fx then

[8]This kind of move was suggested in Hochberg, 1981.

Gx)' will follow from 'L[(x)(if Fx then Gx)]', where the latter expresses the exemplification of L by the general fact. This does not require altering standard logic in a way that Armstrong must to accommodate the corresponding inference. But, then, one cannot take a property like L to also be a relation that holds between facts like Fa and Ga, unless one makes further assumptions. However, if one takes L to be a property of general facts, one can hold that there is a reasonable and straightforward sense in which Ga is necessitated by Fa, given such a general fact, without further assumptions. For, given that the fact (x)(if Fx then Gx) is a lawful generality, and hence that '(x)(if Fx then Gx)' is true, we can derive 'Ga', given 'Fa'. Thus, we may say that the fact Fa necessitates the fact Ga, given the general fact.

The monadic property L can also provide a basis for a functor expressed by 'L(x)(if Øx then Íx)', which can be construed as a higher order relation holding among properties like F and G. Given the similarity of L to a modal operator, and the questions of inference we have just considered, one might raise an obvious question as to whether there is any real difference between (i) 'L(x)(if Øx then Íx)' and (ii) '(x)L(if Øx then Íx)', or whether these are simply symbolic variants that arise from transcribing an ordinary language statement into predicate logic notation. For both (i) and (ii) can be taken to transcribe the statement that a thing's being a Ø is lawfully connected to its being a Í or, to put it another way, that '(x)(if Øx then Íx)' is a statement of a law. In fact, one can argue that if one uses 'L' as Armstrong uses '**N**', to write 'L(Ø, Í)', then 'L(Ø, Í)', (i), and (ii) would be mere notational variants. To take L as a second order relation, and L(F, G) as an atomic fact, would be grossly misleading, as well as confused. The reason 'L(F, G)' does not yield either '(x)(if Fx then Gx)' or 'Fa is lawfully related to Ga', whereas 'anything's being an F is lawfully connected to its being a G' should yield both, is that the combination of (i) and (ii), rather than 'L(F, G)', is a more viable representation of a view appealing to a basic connection like L or Armstrong's **N**. One must implicitly take 'L(F, G)' to express a universal claim, which is not to take it as an atomic sentence. If we assume that what is a law need not be, we cannot think of lawful generality in terms of anything like modal necessity. For in claiming that F and G are lawfully connected, one is neither claiming that F and G are so connected in all possible worlds (or all "accessible" possible worlds), to adopt a familiar manner of speaking that is "ontologically innocent" in this context, nor even that everything in this world is such that in every possible world (accessible possible world) F and G are lawfully connected with respect to such things.

The problem with taking causal necessity or lawful generality as a primitive second order relation in facts like **N**(F, G) can be highlighted by comparison with the construal of **D**(R, Y), stating that the color red is <u>darker</u> <u>than</u> the color yellow, as an atomic higher order fact. We assume this implies that a particular that is red in color is <u>darker</u> <u>in</u> <u>color</u> <u>than</u> a yellow particular. But a corresponding problem does not arise, since we easily define 'darker in color than' in terms of 'darker than': a particular x is <u>darker</u> <u>in</u> <u>color</u> <u>than</u> a particular y if and only if there is a color Ø that x instantiates and a color Í that y instantiates and Ø <u>is</u> <u>darker</u> <u>than</u> Í. No corresponding definition is available for 'causally necessitates' in 'Fa causally necessitates Ga'. All one could do would be to define 'causally necessitates' as either 'for any x, it is causally necessary that if x is a Ø it is a Í if and only if **N**(Ø, Í)' or 'it is causally necessary that any x that is a Ø is a Í if and only if **N**(Ø, Í)'. But doing this simply amounts to taking '**N**(x)(if Øx then Íx)', or '(x)**N**(if Øx then Íx)', or both to be alternative expressions of '**N**(Ø, Í)'. Thus to so define a causal relation for facts would reveal the problematic nature of the claim that **N** is a primitive higher order relation connecting first order universals. But to introduce an additional causal relation for facts that is linked to **N** by additional assumptions is to show the <u>ad</u> <u>hoc</u> nature of the appeal to **N** as a higher order relation.

A similar case arises in connection with Husserl's laws of essence. For a quality instance is only an instance of a single quality--a moment of one of Husserl's universal quality essences. Consider again the case of red and yellow, but read '**D**' as <u>different</u> <u>from</u> in '**D**(R, Y)'. Given the assumption that two quality instances of different qualities are not exactly similar, it follows from '**D**(R, Y)' <u>and</u> <u>that</u> <u>assumption</u> that an instance of red and an instance of yellow are not exactly similar. That they are so does not follow from '**D**(R, Y)' alone. Just as a definition provided the link in the case we considered previously, where '**D**' was construed as 'darker than', here a supposedly <u>a</u> <u>priori</u> law is invoked. This is reminiscent of the disputes about incompatibility in earlier years and Russell's critique of R. Demos', and indirectly, F. H. Bradley's view, regarding the analysis of negative judgments. Let us take '**D**' as a primitive second order predicate and read it as 'incompatible with'. Let it also be understood that we are talking about uniformly colored objects and not things like checkerboards that can be said to be both red and yellow in a certain obvious sense. Then '**D**(R, Y)' would express a synthetic <u>a</u> <u>priori</u> law of essence for Husserl. Yet, from '**D**(R, Y)' and 'Ra' one cannot infer '¬Ya' without an additional premise, something like 'if **D**(R, Y) then (x)(if Rx then ¬Yx)', expressing a "specification," in Husserl's sense, of a law of essence. This plays the role of the definition in the first case and the assumption about quality instances in the second case. One cannot be mislead by the implicit "sense of" the notion of incompatibility, as Armstrong is mislead by his understanding of "nomic necessity," to think that one simply builds into the understanding of a higher order atomic fact the logical consequences required.

All this is relevant to Armstrong's recent attempt to remedy the situation by a transparently fallacious argument. He cites Frank Jackson as having "shown" that 'red is a color' entails '(x)(if x is red then x is colored)' but not vice versa. Likewise, he holds, '**N**(Fx, Gx)' entails '(x)(if Fx then Gx)' but not vice versa. But if 'is colored' and 'is a color' are primitive first and second level predicates, respectively, no such entailment holds. If 'x is colored' is defined as '(Ef)(fx & f is a color)', then 'red is a color' entails '(x)(if x is red then x is colored)' but not vice versa. But that is both trivial and irrelevant to the issue. Armstrong must, in the end, stipulate that **N** provides an explanatory link, since only such a relation can. And, having no correlate of the definition of 'is colored', he must introduce a special entailment relation or axioms governing **N**. He also takes, in a completely mysterious way that is more suited to theology than metaphysics, one entity, **N**(Fx, Gx), to be both a universal (a state of affairs type on his view of universals) and a specific state of affairs (relating universals).

Armstrong's construal of causality is not only found in Husserl's Logical Investigations, but it was a principle doctrine of McTaggart's in the Henry Sidgwick Memorial Lecture, "The Meaning of Causality," of 1914 and reiterated in The Nature of Existence**.**

> We can, indeed, say that one event implies another--for example, that the beheading of Charles I implies the death of Charles I, where the two terms of the implication are both particular events. But this is only because the first event has the characteristic of being the beheading of a human being, and the second event has the characteristic of being the death of the same being, and because the occurrence of an event having the characteristic of being such a beheading involves the occurrence of an event having the characteristic of being such a death.
>
> It has not always been realized in the past that a causal relation must, in the last resort, rest on a relation of characteristics. And many of the difficulties in which writers on causation have involved themselves are, I think, due to their failure to see this, and, consequently, their failure to realize that any causal relation between particulars rests on a relation between universals--since

> all characteristics are universals.[9]

As Husserl distinguished a priori laws of essence from contingent causal relations between essences, McTaggart makes a parallel distinction with respect to various kinds of "determination" or "implication" relations between universal characteristics:

> Now it is clear that a priori implication of one substance by another can only happen as a consequence of a priori implication of characteristics, since it is only characteristics--qualities and relations--whose nature can be known a priori.
>
> As for the second sort of implication, it depends on the terms always being found together, and has therefore no meaning unless they occur more than once. Now characteristics can occur more than once, for they are universal, and can occur in more than one particular case. ...Therefore all implication must be based on the implication of characteristics.[10]

As opposed to a priori connections necessarily linking universals, such as that between triangularity and having angles equal to two right angles, the obtaining of a causal relation between universals was simply an "ultimate fact."[11] McTaggart, concerned about counterfactuals and uninstantiated laws, a problem that concerns Armstrong and others who have reintroduced McTaggart's and Husserl's higher order relations between universals, went on to repeat and extensively discuss the basic idea in The Nature of Existence:

> But there is really no difficulty. For the proposition expressed in a general law is not primarily a statement about any individual, actual or possible. It is primarily a statement of the relation between two characteristics. The relation in question is, no doubt, of such a nature that, in the case of those general laws which deal with characteristics that occur in existence, we can infer that, in all

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[9]J. M. E. McTaggart, "The Meaning of Causality," in Philosophical Studies, ed. S. V. Keeling (London: 1934), 162-163.

[10]McTaggart, 1934, 162.

[11]McTaggart, 1934, 162.

> cases in which the characteristic X occurs, the characteristic Y will occur also. But this is not the essence of the law. That consists in the connection of characteristics. And this connection can exist, even when nothing existent has these characteristics.[12]

As Husserl took the implications involved in the specifications of higher order facts for granted, so McTaggart takes it for granted that "we can infer" the requisite universal generalizations. This seems to be involved, as he sees it, in the very nature of the "implication" relation between the characteristics. In fact, in his early 1914 presentation of the view, he took the higher order fact to be implied by the obtaining of a first order causal relation between events and by such events being existents. But he did not so take it in his later presentation of 1921 and, in fact, he explicitly took the implication to proceed from higher order facts of determination among characteristics to the relevant universal generalizations ranging over individuals (events and particulars) exemplifying the characteristics.

McTaggart's view was extensively discussed and essentially adopted in Broad's Examination of McTaggart's Philosophy. As McTaggart took a higher order causal relation to be a determinate under the determinable higher order relation of determination or implication, Broad took two basic higher order relations, incompatibility and conveyance, as such determinables whose determinates obtained in facts grounding, respectively, various types of analytic, synthetic a priori and causal generalizations. As we will see, he also took such a higher order causal relation to be necessary in the same sense that Armstrong later does.

> I understand what is meant by saying that the presence of a certain characteristic in anything entails or excludes the presence of a certain other characteristic in that thing, or in any other thing that stands in a certain relation to that thing. But I can attach no meaning to sentences in which a "necessity" or "impossibility" is ostensibly predicated without reference to the conveyance or exclusion of one characteristic by another.[13]

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[12]J. M. E. McTaggart, The Nature of Existence (London: 1921, 1968), 154.

[13]C. D. Broad, Examination of McTaggart's Philosophy, 2 vols. (Cambridge: 1933 v. 1, 1938 v. 2), 259.

Broad sought to resolve the problem about synthetic a priori truths like 'Nothing is both red and yellow (all over)' and causal necessities in terms of two higher order relations, incompatibility and conveyance, that related appropriate properties in higher order facts. He also ran into the fundamental problem such a view faces--explaining the "entailment" involved between such higher order facts and the universal generalizations involved--the problem of clarifying Husserl's "specification." Broad held:

... conveyance is the relation which ø has to ß if and only if (x)(if øx **necessitates** ßx).[14]

Here, '**necessitates**' expresses "entailment" in the sense that it is understood in terms of "Every ø is necessarily ß" or "Nothing could be ø and not be ß." Thus he can be taken to have specified conveyance, a more general (determinable) higher order relation of necessitation than Armstrong's **N**, as a relation between properties by a definite description:

conveyance = (the **R**)[**R**(ø, ß) **iff** (x)(øx **necessitates** ßx)].

The "relation" represented by '**necessitates**' is an entailment relation that is other than logical entailment and is involved in the general causal fact (x)(øx **necessitates** ßx), as well as in specifications of that fact--in instances like: Fa **necessitates** Ga. Note that it does not matter whether Broad is defining the higher order relational predicate 'conveyance' or providing a definite description of the relation that he calls 'conveyance' in terms of '**necessitates**'. For whether he defines 'conveyance' or merely describes the relation that term represents, he is taking there to be a relation that holds between properties if and only if **necessitation** holds between every specification of those properties--between every case of something's being a ø and its being a ß.

The pattern used in his discussion of conveyance covers a variety of cases, including causation and synthetic a priori connections. The difference is that in the case of a causal law the statement involving the claim of a causal necessity is not itself necessary. That is, we do not have '**Nec** (x)(øx **necessitates** ßx)' or '**Nec** (Fa **necessitates** Ga)'. In the case of a synthetic a priori necessity, the statement that such a necessity obtains is itself necessary. This is the way Broad captures the difference between a Husserlian law of essence (which is analytic or synthetic a priori) and a universal causal law.

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[14]Broad, 1933, 198.

> Suppose we compare the two propositions 'Anything that had shape would have extension' and 'Anything that had intertial mass would have gravitational mass.' The former corresponds, and can be seen to correspond, to a fact which is necessary. The necessity of this fact is itself necessary, and so on without end. The second, if true at all, corresponds to a fact of which one can only say that it is necessary, but its necessity is contingent. To put it another way. If the law is true, then 'there could not be (in the actual world) things which had inertial mass and lacked gravitational mass.' Yet, even if the law be true, 'there might have been (instead of the actual world) a world in which there were things which had inertial mass and lacked gravitational mass.' But on the other hand, 'there could not have been a world in which there were things that had shape and lacked extension.' It may be noticed that in English we have the three sentences:'Nothing has ø and lacks ß,' 'Nothing can have ø and lack ß,' and 'Nothing could have had ø and lack ß.' The first expresses a Universal of Fact, the second a Universal of Law, and the third an Absolute Necessity.[15]

This is the view Armstrong will set forth almost fifty years later. Broad explicitly, like Armstrong implicitly, makes use of two notions of necessity, that which is a higher order relation between two properties, labeled 'conveyance', and the necessity represented by '**necessitates**' and expressed by 'Nothing <u>can</u> have ø and lack ß'. He links the two by explicitly doing what Armstrong implicitly does. He identifies the higher order relation by means of a definite description involving '**necessitates**'. Armstrong implicitly takes **N** to be: the relation that is such that its holding between Ø and Í is the ontological ground (truth maker) for 'Anything's being a Ø causally necessitates its being a Í'. This points to both the vacuousness of the appeal to such a higher order relation, since it is introduced to provide an explanation for a generality being a causal law, and the problems the view faces. For he introduces two relations of necessary connection, **N** and **necessitates**,

[15]Broad, 1933, 242-243. It is interesting that Broad, like many others, seems to mix the sense in which a law is a general statement with the sense in which a law is a fact, when he speaks of the law being "true." But it could merely be a manner of speaking that is easily fallen into.

and he still faces the need to derive '(x)(if Øx then Íx)' from '(x)(Øx **necessitates** Íx)', and the latter from '**N**(Øx, Íx)'.[16]

Armstrong seeks to avoid the charge that his view, involving a description like that given just above, or alternatively, as--the relation that is such that its holding between Ø and Í is the ontological ground (truth maker) for '(x)(if Øx then Íx)' being a causal law--is vacuous. He does so by claiming, along with E. Fales, that such a relation of causal necessitation, contra Hume, is experienced.[17] Ironically, one of the two justifications Armstrong and Fales give, the observation of causal power in the working of our "will," not only harks back to Berkeley, but was explicitly discussed and rejected by McTaggart, as well as Hume.[18] The other case, the supposed observation of causal necessity in experiencing pressure on our bodies, is the kind of case where, as Hume said in another context, argument ceases.

A puzzling, though qualified, defense of Armstrong has been offered by J. Earman, who seems to think that the two stage entailment expressed by:

**N**(F, G) **entails** (x)**N**(if Fx then Gx) **entails** (x)(if Fx then Gx),

is satisfactory, so long as "the formal semantics" for it is "worked out."[19] Since the whole problem is about just what such a suitable semantics could possibly be, except for appealing to intuitions about causal necessity, or "ordinary" usage in certain contexts,

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[16]As we just noted, Broad takes "conveyance" to be a relation that covers cases like 'Everything that is red is extended' as well as cases like that of gravitational and inertial mass and causal processes. Thus Armstrong's **N** is, in a sense Broad discussed in other contexts, a "determinate" under Broad's determinable "conveyance." As Armstrong agrees with Broad that causal necessities are contingent, it is a determinable where '**Nec** Conveys(F, G)' is not true, as opposed to '**Nec** Conveys(Red, Extension)' and '**Nec** Excludes(Red, Yellow)', which are true. Thus Broad uses the pattern, which Armstrong later adopts, to attempt to resolve the problem of the synthetic a priori as well as to develop a non-Humean analysis of causal laws.

[17]Armstrong, 1997, 212-213.

[18]McTaggart, 1934, 158, 163-164.

[19]Earman, 1984, 221. Earman does express some reservations as to whether such a semantics can be worked out within the constraints Armstrong places on universals.

Earman's comment does not really contribute to the resolution of the issue, though it focuses attention on Armstrong's problems.

Consider the proverbial bench in Boston on which only Irishmen have sat until now. There is a true generality, but it is true in virtue of the atomic facts that obtain up to a certain point in time, and not in virtue of a general fact "containing" properties. In the case of both a natural law and a true accidental generality, general statements are true. But the ontological correlates of a lawful generality and an accidental generality are of different kinds. This difference will do to explain the difference between accidental and lawful generalities. We can now see different ways of rejecting a relation of causal necessity like **N**, along the lines of Hume and the Tractarian Wittgenstein. The strongest way is to reject general facts altogether and take sets of conjunctions to ground the truth of statements of law as well as those of accidental generalities. A weaker way is to acknowledge general facts, but deny that there are any causally necessary general facts, while holding that sets of conjunctions ground the truth of accidental generalities.

Hume was concerned to reject any factual ground for statements like (iii) other than sets of conjunctions and a propensity of the mind to go from one idea to another. Since, for Hume, the idea of a causal connection involves the idea of a necessary connection, and hence a psychological fact, one might think that on Hume's view a general fact would not suffice to ground the truth of (iii). For there appears to be no appeal to a necessary connection in the acknowledgment of general facts. Psychological facts aside, there is still a sense in which one may talk of necessary connections in the case of general facts, and this reveals a fundamental omission in the standard Humean rejection of necessary connections being "in the external world." For, as we noted above, given the general fact (x)(if Fx then Gx), the fact that a is F is necessarily connected with the fact that a is G. In short, given the existence of two facts, the general fact and the atomic fact that a is F, it is logically necessary that a is G, and hence that the atomic fact, a's being G, exists. The existence of the general fact supplies the necessary connection between the two atomic facts. This alternative way of grounding causal laws does not require a concept of necessity other than that of logical necessity (which Hume also took to be contributed by the mind).[20] Thus one can speak of a necessary connection without facing the standard Humean arguments about the "idea" of necessity being mysterious--questions that Armstrong's **N** raises. For a Humean to push the objection to the "idea" of

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[20] D. Hume, A Treatise of Human Nature, ed. L. A. Selby-Bigge (Oxford: 1955), I, xiv, p. 166.

necessity involved in the appeal to general facts and logical forms would force him to defend a Humean analysis of logical necessity, which is far more problematic.

The appeal to general facts shows that the Humean must do more than attack a special relation or nexus of causality or necessity if he is to preserve Hume's view that necessity only exists in the mind and not "in objects." For one who accepts such general facts can be an anti-Humean realist and hold, with Hume, that there is no special relation of causality or necessary connection. Doing so is to make an ontological claim that has nothing to do with the question of how we know, if we ever do, when there are such general facts or causal connections, as opposed to "mere" conjunctions or pairs of atomic facts. One can even point out that there is an ambiguity in the idea that "constant conjunctions" and not "causal connections" provide the truth grounds for statements of causal law. For, in one sense, a general fact may be taken to be a "constant conjunction" or "mere uniformity," by contrast with a purported fact like **N**(x)(if Fx then Gx). In another sense, to take a general fact to ground (iii) is quite distinct from taking a set of conjunctions to do so. One can then distinguish lawful generalizations from mere accidental generalities, as indicated above, by taking the truth grounds for the latter to be furnished by either a set of conjunctive facts, if one recognizes such facts, or by pairs of atomic facts, such as <Fa, Ga>, <Fb, Gb>, etc., and not by a general fact involving a "logical form" of a universal generalization, and the properties F and G.

Armstrong objects to the account I have offered that appeals to general facts by arguing that it does not explain why such general facts furnish causal connections. He requires the instantiations to share something that explains why a universally general truth expresses a causal connection. Thus he sees the present view to be like A. Quinton's appeal to "natural classes" to avoid appealing to universal properties. That avoids answering the question of what it is that the elements of "natural classes" have in common, where being a member of the natural class is no answer. Thus, like requiring a universal to account for things being of a kind, Armstrong thinks something is required to connect what is represented by the instantiations of a universally general statement of law. But there is something that does that on the present view that is not present in the case of accidental generalities--a general fact. Such general facts play the role of common properties in connecting instantiations. The issue is whether anything further is needed and whether **N** furnishes an explanatory common feature. But even if one sides with him on this matter, the simplest thing to do is introduce a property like L, as a universal characteristic of general facts, and treat 'L' like a modal sign--as a sentential modifier. This would at least furnish the required "entailments" along familiar lines and make the needed assumptions formally explicit. But, of course, L, in its way, is as mysterious as **N**.

The Humean, like Wittgenstein, must argue against general facts. And, there are suggestions in Hume that he would reject such facts. His treatment of general ideas suggests that '(x)(if Fx then Gx)' is supposedly understood in terms of a specific case being construed "generally."[21] (We may ignore the question of whether the specific case that is construed "generally" is treated as a conditional or a conjunction.) Moreover, Hume's discussion of causality involves the claim that an assertion like (iii) is justified by the occurrence of regularities occasioning the "experience of a determination of the thought" or a feeling that is apparently absent in the case of accidental generalities. Contemporary Humeans have attempted to replace, or explain, this psychological feature by alternative conditions, in particular by borrowing an idea from coherence theories of truth. Thus they hold that lawful generalities are distinguished from accidental generalities by fitting into a context of other generalities with specific deductive connections obtaining among the various generalities. This is not surprising, for coherence accounts of truth, as opposed to correspondence accounts, go along with variants of idealism, and a Humean account of causality is, in an obvious sense, an idealist account of causality, though it may occur as part of an otherwise realistic metaphysics. The anti-Humean accounts we have been considering are realistic accounts that seek to locate a special ground for causal laws in the external world and not in our reactions to it, including our descriptions of it.

What has been argued is that the most viable form of the realist position is the grounding of statements of natural law in general facts. On such a view one can see that a "form" of a general fact, a form like (x)(if Øx then Íx), resembles a second order relational universal, as the logical form Øx resembles a dyadic relation. (Recall Frege's notion of a "second level" concept.) Facts of such forms involve different constituents--a term and a monadic universal in the one case, two universals in the other case. The general fact (x)(if Fx then Gx) has the universals F and G as terms and is of the logical form (x)(if Øx then Íx), as the fact that a is F has a as a term, F as an attribute and is of the form Øx. Accepting general facts to ground laws and appealing to a special higher order relation can then be thought of as "structurally" alike. Thinking this way one can see that the form (x)(if Øx then Íx) is "formally" like **N** and can serve for whatever purpose **N** is invoked, without raising the numerous problems raised by a relation like **N**. Moreover, one who adheres to a view appealing to a relation like **N** must also

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[21]Hume, l955, I, vii, 20-22.

introduce a multitude of logically complex properties, "logical properties" or logical forms to handle complex contexts--lawful generalities of "forms" like '(x)(if (Fx & Hx) then Gx)', '(x)[if (Ey)(xRy & Fy) then (Ez)(xSz & Gz)]', etc. On the alternative proposed here, we already recognize various forms and kinds of "general" facts. There is a further point worth emphasizing. Unlike **N**, such logical forms and general facts do not merely serve to provide a ground for lawful generalities. They can also provide a basis for logical necessities, as Russell thought in the first decades of the century, by recognizing not only such forms but various connections among them that could be taken to amount to "logical" facts. Thus we would have a form of logical realism in the sense of having such facts as ontological grounds for logical truths and entailments. This would follow the line of Russell's 1913 view in his unpublished (until 1984) Theory of Knowledge manuscript.

It is ironic that Armstrong seeks to avoid negative facts by appealing to "totality" or general facts, introducing a primitive "totality" relation, as well as a primitive relation of causal necessity. But there is a consistency in his pattern. For he has exactly the same problem with his primitive totality relation as he has with **N**. He takes there to be a primitive totality relation **T** that holds between a mereological sum of things and a property. So where we have a mereological sum, say of apples, such a sum consists of all the apples if it (the sum) stands in the totality relation **T** to the property of being an apple. Thus general facts are analyzed in terms of a property, a mereological sum, and the relation **T**. In both cases, that of **T** and that of **N**, he must derive, but cannot, the required generalities from higher order statements involving primitive higher order relations. For he can no more derive a statement of the form '(x)(if Fx then Gx)' from one like '**fT**G', where '**f**' represents a sum of F's, than he can derive the needed generalities in the case of '**N**(F, G)'. He must either simply stipulate the needed connections or simply use '**fT**G' to abbreviate '(x)(if Fx then Gx)'.

The same problem arises in connection with his treatment of the synthetic a priori truths involving color incompatibility. The latter, interestingly enough, were seen to pose the same sort of problem by Husserl, McTaggart, and Broad that they faced in connection with causal necessitation. Such problems clearly force the recognition of necessary general facts and a primitive concept of necessity that that would involve. But such issues I have not dealt with, for, as Russell often said, I see no way to answer them, and it is of little help to appeal to a primitive modal notion as a solution. However, it is worth noting, as Russell in effect did in his well known criticism of R. Demos in the Logical Atomism lectures, that to introduce a relation of incompatibility is to introduce a quantified biconditional. One has to read such a relation '**Inc**(F, G)' in terms of '(x)(Fx **iff** ¬Gx)'.

For, if one does not, and treats '**Inc**' as a primitive higher order predicate, there is the problem, once again, of inferring the generality from the higher order statement. But to appeal to a higher order fact **Inc**(F, G) as the "explanation" of the generality is clearly empty. What one is seeking is an explanation of the apparent necessity of the generality in the case of color incompatibility. And, clearly, the only straightforward move to make is to consider the general fact to be necessary--to introduce a "property" of general facts and not a higher order relation among properties. That was the point of my introducing 'L' above, in contrast to what Armstrong does, and it emphasizes the poverty of Armstrong's approach--of the Husserl-McTaggart-Broad attempt to deal with causal necessities that Armstrong and a number of others have revived.

A general fact can be taken to explain why a general statement is a law, and not an accidental generality. To ask for a futher explanation is to ask what explains there being such a general fact. This involves a shift in the sense of 'explain' and of 'cause'. For one can understand such a query along the lines of asking for an explanation of why there is the fact that a is F. This is quite different from explaining why 'Fa' is true in terms of the existence of a certain fact. The present question could be taken to ask for a causal explanation, and that is perhaps the only way to sensibly take it. But then, applied to the case of a general fact, one asks for the cause for the existence of such a fact. This can be construed as either (i) asking for a further general fact or facts such that the statements expressing them logically entail the generality in question, or (ii) asking for further general statements that express lawful connections (but not entailments) between the generality in question and other generalities--a law about laws, so to speak. One who adheres to causal facts like **N**(F, G) is no better off in holding that the general fact obtains because of such a higher order fact, for we can ask what explains the existence of such a fact. The only way to forestall that kind of question is to hold that such facts are "necessary" facts and, as such, must exist. Such an answer is not Armstrong's way nor, as we saw, Broad's, and it simply compounds the mysteries about causal necessity