

Realist Reconstructions of Humean Causation

I. INTRODUCTION

Let me preface my talk by expressing chagrin that philosophy and the history of philosophy currently seem to be on diverging paths. In the mid-twentieth century, some or perhaps many of the then contemporary philosophers took interest in, and argued for the plausibility of, the views presented by various historical figures. This of course had the disadvantage that the historical text was often not carefully followed, but it did have the advantage of urging the contemporary plausibility of a view at least close to that of the historical figure. Of course there always were historians whose primary purpose was to treat the text faithfully and to explain it in its historical context. The importance of their work for philosophy goes without saying. Yet the work of a historian who fails to urge that the historical view may be a correct view will tend to be ignored by a contemporary philosopher whose aim is to seek the truth, however unattainable that aim appears to be. Perhaps the more recent dominance of pure historians joined with the contemporary philosopher's newest logical or physiological toys have contributed to the discouraging divergence. Today I would like to turn back the clock and urge what I shall call a "reinterpretation" of Hume's view on causal or natural necessity. A reinterpretation imagines Hume to be a participant in contemporary discussions and develops a view that he would not reject outright and perhaps even accept as being close to the truth as he would now see it. A reinterpretation is thus intended to be close to the spirit of portions of the Humean text even if it diverges from its letter.

As we all know Hume gave two definitions of 'cause' whose third clauses can be seen as two definitions of causal or natural necessity. The second definition aligning causal power or necessity with our inferential dispositions is beyond the pale. Despite Hume's pleadings to the contrary, the power to crush the hut is to be located in the elephant, not the inferring mind of the onlooker. Hence, the need for a reinterpretation. I have urged elsewhere that the two definitions can be re-constructed so that they are materially equivalent, that this material equivalence allows us to have the concept of natural necessity, and that there is an *a priori* argument that this is so for any creature whose access to the world is perceptual. These were also re-interpretations (thought to a lesser degree) that highlight Hume's felt need for

something that goes beyond a straightforward identification of natural necessity with constant conjunction. But those reinterpretations failed to provide anything like a definition of natural necessity in a contemporary sense.

One response to this problem is to concede that though Hume may have meant more than constant conjunction by causal necessity, as a reinterpretation of Hume one can become a revisionary reductionist and urges that we can live just as well with the revised notion of cause* which is simply that of an eternal conjunction. I think this is the view of Beauchamp and Rosenberg¹, and it should be a view of anyone urging the regularity or constant conjunction reading of Humean causality. To answer the revisionary reductionist, Hume or we, on his behalf, must be able to argue that there is a genuine need for a concept of necessity that goes beyond eternal conjunction, and this is the burden of the reinterpretation that I shall be urging today.

II. SCIENCE & NATURAL NECESSITY

A. The Basic Idea. It is a commonplace to think that we cannot foretell the future well without the aid of science. But *how* does science help? Medical newsletters often report finding correlations, such as the one between drinking red wine and reduced cardio-vascular problems, but warn that a causal connection hasn't been shown. Evidently the correlation might be just accidental, a "mere" correlation. What then is needed for a causal connection that isn't provided by the correlation or constant conjunction? I think what is needed is some theory that explains the correlation. We take a theoretical explanation of the correlation to "confirm" our surmise that the conjunction wasn't accidental and to "show" drinking red wine to be a causal factor for health. Beyond this, the isolated critical ingredient allows finding it elsewhere to produce pills. Roughly, I think we can say the science we need seeks *deep structure explanations* with two components: (a) claims of relations between theoretical entities, and (b) claims that macro-objects are constituted by theoretical entities, which along with (a) predict the observational properties of macro objects.

While the *Treatise* is largely silent on scientific explanations, in the *Enquiry* (EHN 4.12; SBN 30-31) Hume talks of the effort of human reason to "reduce the principles, *productive of natural phenomena, to a greater simplicity,*" (my italics) and claims

Elasticity, cohesion of parts, communication of motion by impulse; these are probably the ultimate causes and principles which we shall ever discover in nature; and we may esteem ourselves sufficiently happy, if, by accurate enquiry and reasoning, we can trace up the particular phenomena to, or near to, these general principles.

(There are surrounding skeptical remarks, which I shall discuss later.) Since Hume speaks of “productive principles” and “ultimate causes and principles,” my attempt to align causation or natural necessity with science will have some basis in Hume. It is also noteworthy that Hume speaks here of elasticity, cohesion of parts, and communication of motion by impulse – features that are not straightforwardly observable but emerge only through science. However, the so far undeveloped reinterpretation has little textual basis and will be significantly reinterpetive.

While I take the acceptability of scientific claims to be ultimately gauged by observational evidence, observational regularities cannot *replace* scientific claims. We cannot seriously entertain the project of forswearing science in favor of observational regularities. Normally we cannot even *locate relevant* regularities and their epicycles at the observational level. An observational regularity becomes relevant when the observed macro objects are constituted by the theoretical entities through which the theory predicts the observed regularity. Observational regularities that are detached from scientific theories (and do not *directly* serve our daily needs) tend to become useless and forgotten. (A psychologist once told me that he was chagrined to find out that the data he had produced for his successful Ph.D. dissertation turned out to have been also produced in a forgotten paper two hundred year earlier.) Beyond this, scientific theories enable the production of rockets and nuclear plants that create new regularities – regularities that could not have emerged if one relied only on observational regularities. In short, we need deep structure scientific theories to predict the future well and to construct novel technologies – we cannot “get along just as well” with observational regularities. As such the revisionary reductionist is mistaken in thinking that we can dispense with necessities and just live with constant conjunctions. Though we can now see that the concept of necessity has its workload in context of science, exactly how should we understand the idea that necessity is related to deep structure science?

B. Necessity & Accident. A causal or natural necessity presumably contrasts with a mere accident or coincidence. Perhaps the most obvious thing we mean by a conjunction being a coincidence is that we shouldn't count on its continuation. This might be called the epistemic reading of 'accident' and has an obvious application when the conjunction has broken down ("It was an accident after all") or when the so far observed conjunction distressingly has features like other conjunctions that have broken down (such as the breakdown of the winners of primaries in certain counties always winning the subsequent November elections). This idea can even be extended to indefinitely large eternal conjunctions since even if the conjunction is conceived to be eternal, it may still distressingly have features of conjunctions that eventually did breakdown. In such a case, saying that the eternal conjunction is accidental can't be a way of warning against relying on it to continue. But it could indicate that we would have been "lucky" to rely on the conjunction since we wouldn't have had the "right" to rely on it. So, the epistemic sense of an accidental conjunction could apply to a broad range of cases.

However, it seems to me that the kind of necessity/accident distinction we are seeking is not epistemic. Having granted that the concept of necessity has its workload in context of deep structure science, we have admitted that we need more than constant conjunctions, even those that are infinitely eternal and lacking distressing features. Still, the idea of accidental conjunctions naturally leads us to the idea of there being counter instances, if not in our world, at least in some possible worlds. But clearly saying it is possible for some As not to have been conjoined with a B is unhelpful since causal necessity is neither logical nor metaphysical necessity. Demanding the lack of counter-instance in a logically conceivable or metaphysically possible world is asking too much for causal or natural necessity. But couldn't we say the conjunction of As and Bs in our world was non-accidental just in case As are eternally conjoined with Bs in all *close* world? It's far from clear to me that causal necessity can be aligned with truth in all close worlds unless sameness of causal laws is taken to be part of what makes a world close to ours – in which case the understanding of the "accident/necessity" distinction is begged.

It's beyond the present scope to go deeply into this issue. However, my claim is a consequence of a highly plausible thought experiment by Galen Strawson², a strong realist

interpreter of Humean causality. Strawson in effect imagines a universe where some random generator (modeled on a genuine random number generator) produces a sequence of observable events that is “in respect to its perfect regularity, *just like* our universe. And so according to the Regularity-theory, it is, in respect to *causation*, just like our universe.” (Strawson, p. 25) He urges it is wildly implausible for most of us (Hume included) that the regularity we observe is a fluke from one moment to the next, and thus plausible that a strong realist notion of causation underlies the regularity. (Cf., Strawson, p. 95) Thus, we can conceive a world whose events are randomly generated but match one-to-one with the events in the actual world which, let us assume, contains all the natural necessities we think there are. In the randomly generated world, even if its impeccable constant conjunctions unto eternity engender epistemic necessities, they fail to be instances of natural necessities. But, then, unless causal necessities are required to be preserved in close worlds, truth preservation in close possible worlds gives the wrong account of causal or natural necessity.

C. Necessity & Sufficient Reason. What then might be a non-epistemic understanding of the natural necessity/accident distinction? I think we might fruitfully understand the distinction in terms of *what* the principle of sufficient reason required for non-*a priori* necessities: an event or correlation or conjunction is causally necessary if and only if there is sufficient reason for it. I am, of course, not urging the *principle* of sufficient reason *itself* since it would require, on *a priori* grounds, that there *must be* a sufficient reason (and hence a causal necessity) for items that are not *a priori* necessary. Leibniz used the presence of sufficient reason (demanded by his appeal to the principle) to urge the causal necessity of non-logical truths in our world – they are necessary because there is a sufficient reason for them, viz., God having (freely) chosen this world for the reason that it is the best of all possible worlds. Thus, even if it is a logical truth that a monad *m* has property *P*, that our world has *m* is not a logical truth – it depends on there being sufficient reason for its existence in terms of God’s willing the best of all possible worlds.ⁱ

ⁱ I rely here on D.W. Hamlyn, *The Encyclopedia of Philosophy*, Vol. 3, p. 21, Paul Edwards ed., Macmillan, New York 1967. According to the Encyclopedia, the principle seems to have had the greatest following among German philosophers – e.g., Christian Wolff and Schopenhauer.

Though any *a priori principle* of sufficient reason is contrary to Hume's view, at least in one instance Hume seems to come close to aligning a cause *c* of an event *e* with *c* being a sufficient reason for *e*'s occurrence. In his 8th rule for judging causes he tells us:

An object, which exists for any time in its full perfection without any effect, is not the sole cause of that effect but requires to be assisted by some other principle, which may forward its influence and operation. (T 1.3.15.10, SBN 174)

This rule goes beyond *c*-like events being constantly conjoined with (a) an *e*-like event and even (b) an *e*-like event occurring (say) *n* minutes after the *c*-like event. What is needed is an "assisting cause" that brings about the *e*-like event occurring precisely *n* minutes after the *c*-like event. This suggests that what is needed for a cause of *e*'s occurrence must provide a reason why, or sufficient reason for, *e*'s occurrence at time *t*.ⁱⁱ

Of course Hume does not generally think of causation in terms of sufficient reason and I shall depart from Hume in this respect. I will require that for *X* to be causally or naturally necessary, there must *be* a sufficient reason for *X*. By this account, when we have a deep structure scientific theory that explains an observational correlation, the correlation is naturally or causally necessary because there is a sufficient reason for it. This accords with our initial intuition that the existence of a deep structure scientific theory explaining an observed correlation *confirms* our surmise that the correlation was not accidental but causally necessary. So far, so good – we now have a sufficient condition for causal or natural necessity.

Perhaps less obvious is the converse that a correlation lacking a sufficient reason is a mere accident or a brute fact. Of course we think many correlations are necessary even if the reasons we have for them fall somewhat short of sufficient reasons. I think we can safely bypass these complications and rely on a dichotomy of a fully sufficient reason (some of whose members may still remain to be found) and the lack of a sufficient reason (where even an omniscient being could not find a set of reasons that is sufficient for the event or correlation in question). Given this simplification, I think we can claim an

ⁱⁱ Rule 8 is used in Hume's argument (on T 1.3.2.7, SBN 76) as to why a cause must precede its effect (an argument he urges with considerable ambivalence and, rightly so, given its utter obscurity except for the appeal to Rule 8 which seems to require a cause providing a sufficient reason for its effect).

observational correlation to be a mere accident or a brute fact if there is no explanation or sufficient reason for it. This may be difficult to assess since it's unclear when one can claim a correlation has no sufficient reason. However, I think most of us are persuaded that astrological correlations are accidental even if some of them were eternal, and I think we chalk them off as accidental because we believe no true theory can explain them. No doubt an eternal astrological correlation distressingly has features like those that have broken down, but it's not accidental only in the epistemic sense. We are convinced that there is no necessity because, given what else we know, we are fully persuaded that the alignments of heavenly bodies cannot influence the details of our love life or economic cycles of booms and busts, i.e., we believe there is no scientifically acceptable theory that could possibly explain the correlations.

Of course it is problematic when can claim no theory explains an observational correlation. But if we could counterfactually be persuaded that no true theory explains a correlation, wouldn't we say that there was no necessary connection – the correlation was just an accident, a brute fact? Furthermore, once we reject the reduction of necessity to observed correlations because science cannot be reduced to observational correlations, and once we come to recognize that the deep structure explanations of science are capable of showing observational correlations to be non-accidental, I think we should grant that eternal observational conjunctions are accidental if *no* true scientific theory (known or unknown) can explain it.

III. WEAK REALISM

A far more difficult issue facing us is how we should view scientific claims that ostensibly refer to non-observable entities. Since we are relying on the role of science to urge an alternative to the revisionary reductionist, we need at least a minimally realistic account of science. Let me start with "weak realist" accounts of science, which I take to have two components: (1) Scientific terms are not genuinely referential but, in some form or other, are mere linguistic devices to facilitate inferential relations between the various claims of science. (2) Though not reducible to observational claims, scientific claims supervene on what is observable. The weak realist is a realist by avoiding reductionism but is a *weak* realist by denying genuine existence to scientific entities.

A. Blackburn. I *think* Simon Blackburn's account³ of Humean causality is fairly close to being a weak realist account if we consider the vocabulary of causation to be scientific. Very roughly his view seems to be something like the following: There is no representational concept of causal necessity but we do have mental states, habits and inferential dispositions (of the sort urged by Hume's second definition). These mental items are *expressed*, though not described by, our verbal behavior involving causal terminology: Thus utterances of 'C causes E' initially express (are projections of) our disposition to infer E from C. They acquire an objective dimension by being used to discuss, reject or improve the inferential disposition and are true when the inferential disposition lead us to correct observational predictions. Just in the way moral judgments are supervenient on natural facts, so too causal talk is supervenient on our inferences of eternal conjunctions and in the end causal judgments involve gilding or staining inferred constant conjunctions by our inferential dispositions.

B. Quine & Ontological Relativity. Whether it is a matter of personal taste or philosophical upbringing or failure of proper comprehension, let me briefly sketch an alternative weak realist account that relies on Quine's views on ontological relativity.⁴ Very roughly, Quine takes the ontological relativity problem and its solution to be analogous to the problem that we may undetectably experience the world in complementary colors and the logical positivist solution to that problem:

What our present reflections are leading us to appreciate is that the riddle about seeing things upside down, or in complementary colors, should be taken seriously and its moral applied widely. The relativistic thesis to which we have come is this, to repeat: it makes no sense to say what the objects of a theory are, beyond saying how to interpret or reinterpret that theory in another. (OR p. 50)

The positivist solution was that the only thing that matters about expressions like "I experience red" is that you and I say the same thing under identical external stimulations and that we make the same inferences to and from such an expression. We needn't worry about what if anything the ostensibly referring expression 'red experience' refers to. This appears to be Quine view on ostensibly referring scientific terms

Reference and ontology recede to the status of mere auxiliaries. True sentences, observational and theoretical, are the alpha and omega of the scientific enterprise. They are related by structure, and objects figure as mere nodes of the structure. What particular object there may be is indifferent to the truth of observation sentences, indifferent to the support they lend to the theoretical sentences, indifferent to the success of the theory in its prediction. (PT, p. 31)

In the end all that matters is that ostensibly referring terms act as “markers” or “nodes” which facilitate inferential connections between theoretical and observational sentences science needs to deal with. With the elimination of genuinely referring scientific terms at the non-observational level, the non-referring feature of weak realism is secured.

The remaining task is to claim the supervenience of theoretical statements on observational statements. To make this somewhat plausible, a number of refinements are needed. The subvenient observational statements would have to be understood as relating to the totality of what we would have observed if only we were at the right place at the right time. The supervenient may need to be a reasonably encompassing theory whose statements face the tribunal of experience not individually but as a corporate body. Beyond this, to argue for supervenience Quine needs the supervenient to be a “global” theory incapable of fitting into any broader theory having greater predictive power. However the details are to be worked out, an argument for the supervenience of theory on observations seems to be a possibility and Quine, with the help of Davidson, proposes such an argument. (See PT, pp. 95-101.) Let us suppose some such argument succeeds.

Given that a theory T supervenes on a set of observational claims O, the truth of O should be sufficient for the truth of T. For, if O is true and T isn't, the supervenient difference between T's truth and falsity would not be reflected in any difference in the subvenient O. Of course the truth of O being sufficient for the truth of T is not a matter of entailment, the sort of relation T roughly holds to O. Having eschewed reductionism, observation statements do not even roughly entail theoretical statements. Still, for a fully developed theory that is suitably related to possible observations, the truth of the relevant observation statements is sufficient for the truth of the theory. So, we would be in a position to say that the truth of the observation statements constitutes sufficient reason

for, and in this sense necessitates, the theory being true, and the truth of the theory is (at least roughly) a deductively sufficient reason for, and in this sense necessitates, the truth of the observational correlations. In short, by thinking of natural necessity as that for which there is a sufficient reason, constant conjunctions at the observational level are necessitated by the theoretical claims which explain them, and the theoretical claims are necessitated, not by the initial observational constant conjunctions, but by the totality of observational truths that makes the indispensable, holistically conceived scientific superstructure true. Such then would be a Quinean weak realist re-interpretation of Hume's account of causality. It must be admitted that this re-interpretation has no textual support to speak of since the concepts utilized in it were largely unavailable to Hume. On the other hand, by eschewing referents for ostensibly referring scientific terms, this reinterpretation aligns well with Hume's empiricism; as such it may not be beyond the pale to suggest that he might accept it if he were a participant in the contemporary philosophical scene.

IV. STRONG REALISM.

A. Introduction. Let us now turn to strong realist (or Realist) interpretations or reinterpretations of Humean causation. Such a (re)interpretation would have to insist that scientific terms like 'electron', or perhaps 'causation' itself, straightforwardly refer to genuine features or entities in the world that transcend what is observationally available. The view I shall be developing will have *some* similarities to Galen Strawson's Realist reading of Hume but in the end it will diverge significantly from Strawson's. Strawson and I agree that a Realist conception of causation (what he calls Causation) requires that if a correlation is to count as Causal relation, there must be a reason for the correlation. (It's unclear whether by 'reason' he means sufficient reason as I do, but this difference would be minor at worst.) He characterizes the reductionist Regularity Theory as claiming "there is simply nothing which is the reason for the regularity"(Strawson, p. 26) and urges that

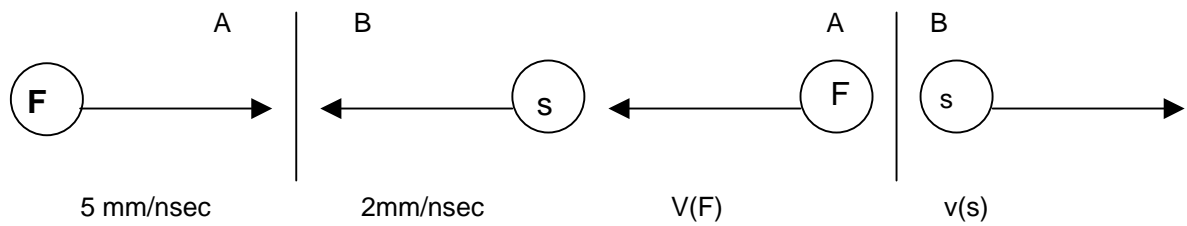
to deny that causation is Causation is to say that there is, definitely, *no because in nature*. That is, no statement of the form 'X happened because Y happened' is ever literally true given our ordinary understanding of its meaning. (p. 86)

The difference I shall end up having with Strawson involves what counts as the “because” in nature. The kind of Realism I find to be fully intelligible takes it that deep structure scientific theories explain observational regularities whereby those realistically conceived deep structures provide the reason, or the “because” in nature, for the observable regularities.

B. An Example. Given the insistence on the “because” *in nature*, a Realist would insist that theoretical terms of a true scientific theory refer to genuine entities in reality. On the other hand, it would be bizarre to think that ‘phlogiston’ referred to genuine entities while all the theoretical claims about their behavior were false. Thus, it is arguably an *a priori* truth that if a theoretical term (‘molecule’, ‘electron’, ‘phlogiston’, etc.) refers to an entity in the actual world, it must satisfy most (or a significant portion of) what the theory (or at least the core theory) claims about the properties and relations of those theoretical entities.ⁱⁱⁱ But this must not blind us to the underlying contingencies: For any set of entities that exist, (a) it is a contingent fact that that set of entities exists and (b) it is a further contingent fact that those entities have the properties and relations the theory claims.

Given this much, how may a Realist explain natural necessity? As an example suppose two chambers A and B are separated by a retractable insulating wall and that a mercury thermometer shows the temperature of A to be greater than that of B. Once the wall is removed, the temperature is observed to decrease in A and increase in B. At least roughly what explains this phenomenon are (a) Newton’s laws of motion which explain the changes in the kinetic energy of the molecules, and (b) a bridge law connecting changes in the kinetic energy with changes in mercury thermometer readings. Suppose the molecules in A move with a greater velocity than those in B, and for simplicity take all the molecules to have mass m . Consider a head on collision where the wall used to be between F moving from A towards B at 5 mm/nanosecond and s moving from B towards A at 2 mm/nanosecond . Let $v(F)$ and $v(s)$ be the velocity of F and s after the collision, and take the A to B direction to be positive. The equations for conservation of momentum (mass \times velocity) and conservation of kinetic energy ($\frac{1}{2} \text{ mass} \times \text{velocity}^2$), both derivable from Newton’s laws of motion, give rise to

ⁱⁱⁱ As for the qualification about “core theory”, suppose chemists introduced molecules to explain a variety of chemical reactions. This can leave it an *a posteriori* matter that heat is the mean kinetic energy of the molecules in motion. As for whether what is *a priori* true of the theoretical entities in the actual world is true of them in all possible worlds presumably depends in part on whether our actual reference to those entities is *de dicto* or *de re*.



two simultaneous equations whereby $V(F)=-2$ and $v(s)=5$. Thus, the kinetic energy of the F molecule moving back towards A decreased from $(\frac{1}{2})m(5)^2$ to $(\frac{1}{2})m(-2)^2$ and that of B increased from $(\frac{1}{2})m(-2)^2$ to $(\frac{1}{2})m(5)^2$. Of course collisions needn't occur where the wall used to be and most collisions would not be head on. Furthermore, since the number of number of molecules is astronomical, calculating the kinetic energy of each molecular collision give way to calculating the changes in mean kinetic energy of the molecules. But these complications don't affect the kinetic energy of B increasing and that of A decreasing.

Turning to the mercury thermometer, if it is placed in an environment where the mean kinetic energy of the environment is greater than that of the thermometer, for reasons we have just discussed, small amounts of kinetic energy are transferred from the environment to the thermometer and its mercury. This results in the volume of the mercury expanding and reaching a higher calibration on the thermometer; and this process continues until the kinetic energy of the environment and that of the mercury reach equilibrium. In a similar manner, if the mean kinetic energy of the environment is less than that of the thermometer, the thermometer will give a lower reading. Thus we arrive at a bridge law connecting changes in the mean kinetic energy of the molecules in a chamber with changes in the observable readings of a mercury thermometer. If prior to removing the insulating wall, A produced a higher reading than B (as we supposed), the mean kinetic energy in A was greater than in B. Given that removing the insulating wall decreased the kinetic energy of A and increases that of B, similar considerations explain why the thermometer reading of A decreased and that of B increased. Given this much, I suggest it is a causal or natural necessity that opening insulating walls between two chambers results in the temperatures of higher temperature chambers decreasing and those of lower temperatures chambers increasing.

C. Some Problems. But what should we say about Newton's laws of motion and their applications to molecules? Having abandoned the supervenience claims of weak realism, if those laws lack an explanation or sufficient reason, there would only be "Newtonian"

regularities. But then wouldn't the lack of necessity seep down to the observable changes in temperatures of the two chambers? Yes, but *only if* one thinks of natural necessity to be like logical or metaphysical necessity which require the absence of contingency. My suggestion is to align causal or natural necessity with the presence of a sufficient reason. For example, (even though this is most unlikely) suppose it is a brute contingent fact that the ball landed on the '17' slot of the roulette wheel and that it was also a brute contingent fact that I bet \$1 on '17'. Even under these suppositions, wouldn't these facts and the rules of roulette explain and be a sufficient reason for my receiving \$36 from the croupier? The contingencies of the wheel and my choice wouldn't undermine the point that there is a reason why (and to this extent it isn't just a brute fact that) I received \$36. Similarly, even if Newton's laws were brute regularities lacking any sufficient reason, their truth *do* provide sufficient reason for the temperature changes and such changes are causally or naturally necessary rather than being mere brute facts lacking any reason. I grant that the regress of explanations that seems to be in the offing is troubling, and I shall return to this issue later.

For now, let me deal with two other potential objections. (1) Scientific theories obviously undergo corrections whereby previous theories that explained observational regularities are superseded. Thus, given relativity theory, Newtonian mechanics failed to provide the correct "because" of observational regularities. The response to this is a point of scientific methodology: a broad theory like Newtonian mechanics cannot be replaced by another theory if that other theory fails to explain at least most of the observed regularities that Newtonian mechanics explained. Thus, the broad explanations provided by Newtonian mechanics guarantees that most of the observational regularities it explained will continue to have an explanation and thereby avoid being mere accidents. The natural necessity of an observable correlation demands that there be an explanation, not that a particular theory correctly explains it.

(2) My Realist account of causation would be implausible without an external world. But doesn't Hume deny such a world? If so, we would have to fall back on a weak realist account of necessity or limit the Realist conception of causation to (mentalist) psychology. However, it is far from clear that Hume denies the existence of an external world:

Philosophers are so far from rejecting the opinion of a continu'd existence upon rejecting that of the independence and continuance of our sensible perceptions, that tho' all sects agree in the latter sentiment, the former, which is, in a manner, its necessary consequence, has been peculiar to a few extravagant skeptics; who after all maintain'd that opinion in words only, and were never able to bring themselves sincerely to believe it. (T 1.4.2.50, SBN 214)

Hume's ultimate attitude towards the external world is a difficult topic requiring separate discussion. Bypassing epistemic issues of justification, suffice it to say here that Hume insists that no one can believe the external world to be non-existent.

V. DISAGREEMENTS WITH STRAWSON.

A. Interpretation or Reinterpretation? Turning to Strawson, I agree with his appeal to (what amount to) a random event generator in urging that that genuine causation or Causation can't be just a matter of regularity since a regularity *could* be (i.e., is consistent with its being) a complete fluke from moment to moment. I have expressed this agreement by insisting that a regularity is a causal regularity only if there is a sufficient reason for it. However, I disagree with Strawson on several points. One relatively minor point is that I have doubts that Strawson is providing an interpretation (rather than reinterpretation) of Hume. I think it can be argued that it does not even enter Hume's mind that an eternal conjunction could be a "complete fluke" from one moment to the next. Thus, in the opening pages of the *Treatise* Hume urges that simple ideas are derived from simple impressions:

Every simple impression is attended with a correspondent idea, and every simple idea with a correspondent impression. ... Such a constant conjunction, in such an infinite number of instances, can never arise from chance; but clearly proves a dependence of the impression on ideas, or of the ideas on impressions. (T 1.1.1.8, SBN 4-5)

Strawson could urge that these are mere epistemic remarks: it would be wild to believe that such an infinite constant conjunction could be due chance; for all practical purposes the conjunction proves causal dependence. But this is not what Hume says. He says that such an infinite regularity *can never* arise from chance and the regularity *proves* a causal dependence. As such, the conjunction does not stand in need of Causation to be a genuine, full-blooded causation.

Furthermore, this is perfectly compatible with Hume's view that there could be reasons for a particular regularity, a cause for the cause as it were. Recall the passage:

It is confessed, that the utmost effort of human reason is ... to resolve the many particular effects into a few general causes. ... But as to the causes of these general causes, we should in vain attempt their discovery.... (EHU 4.12, SBN 30)

Hume can perfectly well grant this without insisting that eternal conjunctions would fail to be genuine causation in the absence of having general causes or causes of the general causes. After all, a cause could be a cause even if there is no cause for that cause.^{iv}

Consider a fairly typical example of the kind of textual support Strawson's produces (from the *Enquiry*) where '[REF]' and italics indicate a reference to Causation, '[EP]' an epistemic remark (which shouldn't be confused with metaphysical remarks), and '[NI]' signals what Strawson claims is the most natural interpretation of Hume's words.

On [EHU 5.3, SBN] p. 42, Hume says that [REF]

The particular powers, by which all natural operations are performed [EP] never appear to the senses;

And yet [NI] they certainly exist. He goes on to say that experience can [EP] never give any idea or knowledge of

the secret power, by which the one object produces the other.

And yet of course it exists. (Strawson, p. 184)

Here and elsewhere (especially in the *Enquiry*) Hume does claim that there are reasons for eternal conjunctions. But two points are noteworthy. (a) The above citations makes no suggestion that in the absence of secret powers, eternal conjunctions would fail to be genuine causation. Indeed, if Hume did suggest such a need for secret powers, the existence of such powers should be a pressing issue for him. At some point in the text one would have expected explicit expressions of concern and an insistence on the existence of the underlying secret powers, the very point Strawson's adds as NI. Yet I fail to find a single textual instance expressing worries about an eternal conjunction being a mere fluke. (b) The

^{iv} I believe this view is, or is close to, that of T.L. Beauchamp and A. Rosenberg. They distinguish between causation (understood as constant conjunction) and operations of nature, which could be understood to distinguish between a cause and the cause of the cause.

point of the passage discussed (EHU 5.3, SBN 42) is that causal inferences are due to custom because even a man with the strongest faculties of reasoning cannot reason from cause to effect. No insistence on secret powers is needed to make this point. In general, the existence or non-existence of a reason for a conjunction plays no role in the arguments of the passages Strawson cites on behalf of his view.

B. Locating the Central Disagreement. Since I am explicitly pursuing a reinterpretation, from my perspective it matters little whether Strawson is interpreting or reinterpreting. More central to my project is whether his Causation aligns with my suggestion of sufficient reason. Though some of the things Strawson says accords with my suggestion, in the end we have fundamentally different Realist conceptions of causation. Here is one way Strawson introduces his Causation:

To believe that causation is in fact Causation is simply to believe (A) that there is something about the fundamental nature of the world in virtue of which the world is regular in its behavior; and (B) that that something is what causation is, or rather is at least part of what causation is or involves. To *deny* that causation is Causation is to hold (C) that causation is just regular succession. (Strawson, pp. 84-85)

(A) and (C) are pretty close to saying that a regularity is causally necessary if science provides a sufficient reason for it. But whereas (B) suggests the fundamental nature of the world *is* Causation, I would not say, and would have no basis for saying, relations between theoretical entities claimed by a scientific theory *is* Causation.

Calling the reason for the world's regularity the nature of matter, Strawson urges: The answer to the question 'Why is the world regular?' is then 'Because of the nature of matter.' But if someone were to ask 'Why is the nature of matter the particular way it is?', the best reply might very well reject the request for a reason, and say 'That's just the way things are.' (Strawson, p. 90)

This seems to be consistent with my account of Causation. The ultimate scientific theory available *now* may (unbeknownst to us) be *the* ultimate theory where the only right thing that could be said (even though we can't say it) is "That's just the way things are."

But Strawson's view differs from mine. Given that 'nature of matter' and 'fundamental forces governing the behavior of the world' are essentially interchangeable

for him, he goes on to say:

Some will now undoubtedly object that one must then ask why these *forces* are regular in their operations; and they will suggest that unless one supposes that there is in turn a *reason* for their regularity of operations, one is led back to a Regularity account according to which one says the forces 'just are' regular in their operation, this being, ultimately 'a complete fluke'. But this is a mistake. [T]he present account postulates the existence of fundamental objective forces constitutive of the nature of matter and given which *it is in fact the case that it cannot but behave as it does*. The Regularity account asserts positively that there is no reason why [the behavior of matter] is regular as it is. (Strawson, p. 91, my italics.)

As far as I can understand Strawson, for him it is a contingent fact that a fundamental objective force (or the nature of matter) is the way it is in our world, but if *per impossible* we could access the nature of matter, all our causal inferences would be *a priori*. His insistence on the *a priori* inferability of effects is clear in his discussion of the AP property:

on Hume's view Causation has the 'a-priori-inference-licensing property', or 'AP property', for short: it has the property that genuine detection of it brings with it the possibility of making *a priori certain causal inference*. The causal inference from C to E would itself be a priori inference in the sense that it would be possible to make it prior to any experience of type E events following events of type C. (Strawson, p. 111)

C. The AP Property. The fundamental disagreement between Strawson and I is that his Hume insists on, and my reinterpreted Hume denies, realistically conceived causation to have the AP property. One way this difference comes out is that if Causation (which explains the regularity in our world) really had the AP property, Hume would start *tending* towards some form of monism. Suppose we have a sequence of events A_1, A_2, A_3, \dots where A_i Causes of A_{i+1} insofar as there is a reason in nature for A_i and A_{i+1} to be conjoined. But if A_{i+1} is *a priori* inferable from A_i , A_{i+1} must in some sense be already contained in A_i . Thus, the entire sequence A_1, A_2, A_3, \dots collapses simply to A_1 . Furthermore, if we think of the initial conditions of the universe at its start to be C_1, C_2, \dots , the entire future course of the universe is already contained in this set of initial conditions; we are thus led towards a kind of monism where changes with time become problematic. On my account, we can stay clear of monist

tendencies because matter and forces are taken to be externally related and separable. If there were an ultimate scientific theory, it would break down the initial conditions C_1, C_2, \dots , into (a) entities or micro-structures c_1, c_2, \dots , where the existence of none them entails anything about any subsequent state of the universe, and (b) *a posteriori* causal (or perhaps probabilistic) laws L_1, L_2, \dots . Only the *combination* of c_1, c_2, \dots and L_1, L_2, \dots would (more or less) entail the subsequent course of the universe and all its observable regularities.

The *Treatise* based textual support Strawson finds for the AP property of Causation is Hume's argument against the anti-occasionalist view that there is a God derived but nevertheless real power in matter. Hume urges that if we possess any such idea of power, we must be able to place [it] in some particular being, and conceive that being as endow'd with a real force and energy, by which such a particular effect necessarily results from its operation. We must ... be able to pronounce, from a simple view of the one, that it must be follow'd or preceded by the other. ... Now nothing is more evident, than that the human mind cannot form such an idea of two objects, as to ... comprehend distinctly that power or efficacy by which they are united. Such a connexion wou'd amount to a demonstration, and wou'd imply the absolute impossibility for one object ... [to] be conceiv'd not to follow upon the other: Which kind of connexion has already been rejected in all cases. ... since we can never distinctly conceive how any particular power can possibly reside in any particular object, we deceive ourselves in imagining we can form any such general idea. [T 1.3.14.13, SBN 161-162]

Hume's argument pretty clearly shows that no impression derived idea of power or causation can be an idea of an *intrinsic* property of an object – at best it would be an idea of an object's relational property. (Thus, the argument doesn't rule out C's power of causing E to be C's relational property of being constantly conjoined with E or our being disposed to infer from C to E.) The same *reductio* could be constructed for urging that no idea of being a husband can be an intrinsic property of a man (cf., T 1.3.3.8, SBN p.81) Surely it is a unjustifiable leap to claim that, though knowledge of such a power (or Husband?) is precluded, by urging this argument Hume joins the anti-occasionalists in believing that an impression transcending reference to Causation refers to an object having the intrinsic property of bringing about its effect. Strawson's *Enquiry* basis covers much the same territory to claim,

“no part of matter by its sensible qualities discovers any power or energy.” (EHU 7.8, E, SBN p. 63) The continuation may seem a bit more supportive of Strawson: “The scenes of the universe are continually shifting; but the power or force which actuates the whole machine, is entirely concealed from us.” But this concealment is compatible with the effect coming about in virtue of (i) the nature or deep structure of the entity that is the cause *and* (ii) the non-*a priori* laws linking such a nature or deep structure with its effect. I find no persuasive textual basis for claiming that Hume thought causal inferences would be *a priori* if only we could access Causation, which he fully believed to exist.

In sum, I would urge that a Realist (re)interpretation deny the AP property to Causation because: (a) It doesn't straddle Hume with Causation being an intrinsic or non-relational property of a cause. (b) Matter and the forces governing them are not internally related so that, for example, H₂O could exist in a possible world without having the causal properties it has in our world. (c) We need not think that Hume was secretly harboring Parmenidian or Spinozistic tendencies. Still, to be fair to Strawson, we need to satisfy ourselves that the AP property is really dispensable for an understanding of Hume's view.

D. Do we need the AP property to understand Hume? The main dialectical role the AP condition plays for Strawson is that it would justify what Strawson calls Hume's Non-committal Skepticism:

[Hume] holds that there is a fundamental sense in which the *nature* of real causal connexion or causal power is always and for ever undiscoverable by us: for true detection of it would have to make us capable of something of which we know we will always be incapable -- *a priori* certain inferences about causal matters. (Strawson, p. 187)

Hume certainly denies that we can have any access to the Strawsonian ultimate “because” of nature. The *Enquiry* citation that launched this paper is embedded in the following skeptical context:

It is confessed, that the utmost effort of human reason is ... to resolve the many particular effects into a few general causes. ... But as to the causes of these general causes, we should in vain attempt their discovery.... These ultimate springs and principles are totally shut up from human curiosity and enquiry. Elasticity, gravity, ...

are probably the ultimate causes and principles which we shall ever discover in nature. The most perfect philosophy of the natural kind can only stave off our ignorance a little longer. (EHU 4.13, SBN 30-31)

Two points can be discerned. Positively, the natural sciences (philosophy of the natural kind) can with some degree of justice go beyond sensible qualities and resolve the workings of nature to a few general causes. Negatively, we cannot access the ultimate principles governing nature. The AP property would certainly underwrite this negative point, but do we need the AP property to make that point?

Given my appeal to sufficient reason, it may be useful to consider the potential need for the AP property along with the lurking regress of explanations for which there seems to be three options: (a) The regress terminates with an explanation that is “self-explanatory,” where it is hard to see how there could be such an explanation unless the explanation and what it explains were in one form or other *a priori* true. (b) The regress stops once we reach the “ultimate” theory for which there is no further explanation since the world simply is the way that theory claims it to be. (c) The series of explanations is unending – for any explanation, there is a yet a deeper explanation. I think Strawson would join me in supporting (b) which seems to be the most plausible option. But there are (a) leaning tendencies in Strawson and (c) leaning tendencies in my view.

If we link Strawson’s ultimate Cause or the nature of matter (which just is the way it is) with the ultimate explanation, this would align Strawson with (b). But insofar as all Causal relations have the AP property, the effect of his “ultimate explanation” on the explained is much the same as option (a), which would transmit the *a priori* to what it explains. For Strawson we can’t know the nature of matter because if we did, all causal inferences would *per impossible* be *a priori* for us. Given my science-based account of necessity, at any given moment there would be the ultimate theory for which there is no further currently available explanation. But because this currently ultimate theory may have an explanation in turn, even if (as luck would have it) it is *The Ultimate Theory*, we would neither be able to claim this nor be absolved from seeking further explanations for it. Thus, without appealing to the AP property, my science based account of necessity denies any justice for claiming something to be the ultimate principles governing nature.

From our human perspective we cannot distinguish between (b) and the unending series of explanations (c) claims. But this means: with no appeal to the AP Property, we can explain why we cannot claim with any degree of justice what the ultimate explanation is. Hence, the AP property is not needed to sustain Hume's skepticism concerning the ultimate principles of nature.

V. MY FUNDAMENTAL DISAGREEMENT WITH STRAWSON.

A. Strawson's Causation exceeds the bounds of science and is metaphysical. I

suggest that the basic difference between Strawson's account and mine is that while his notion of Causation is metaphysical, mine is scientific. Strawson says:

Sometimes [Hume] is only making the point that there are particular causal connexions – between A and B, say – which we cannot know of simply because A-type and B-type events are too minute or too far away for us to observe *constant-conjunction* relations between them; such *causal connexions* are thus unestablishable. This is certainly part of what Hume is saying. At the same time, however, he holds that there is a fundamental sense in which the *nature* of real causal connexion is always and forever undiscoverable by us: for true detection would have to make us capable of something of which we know we will always be incapable – a priori certain inferences about causal matters. (Strawson, 186-187)

In speaking of regularities of entities too minute or too distant Hume is presumably speaking of micro-structures and astronomical bodies. For Strawson such entities as well as any discovery science could make cannot inform us about Causation since their discovery won't reveal the AP property. Thus, Strawson's appeal to Causation exceeds the bounds of science and may be called metaphysical, and he is quite explicit on this:

one may even grant that the issue [of whether or not there is Causation] is in a sense a ghostly one, while insisting that it is an issue of enormous philosophical importance. (Strawson, p. 88)

According to the present view it is a metaphysical fact that it [the regularity of the world] is not a complete fluke. (This is as good an expression as any of the belief in Causation). (Strawson, p. 92)

B. Since Hume's practice relies on inferences to the best explanation, Hume could allow regularities having scientific explanations to be Causal. Since my Hume does not require the AP property for Causation, scientific discoveries could be the "because" in nature for the regularities we observe. Though somewhat muted, an appeal to science is clearly present in Hume, and an interesting passage occurs in the *Treatise* discussion of Liberty and Necessity:

We must certainly allow, that the cohesion of the parts of matter arise from natural and necessary principles, whatever difficulty we may find in explaining them: And for a like reason we must allow, that human society is founded on like principles; and our reason in the latter case is better than even in the former; because we not only observe, that men *always* seek society, but we can also explain the principles, on which this universal propensity is founded. (T 2.3.1.8, SBN 401-402)

Hume is clearly claiming that there is an explanation of the constant conjunction between being human and seeking society. We must not forget that the *Treatise* is supposed to provide the science of man comparable to Newton's science of matter. Thus, in addition to his explanation of our quest for society and the origins of justice (in terms of sexual appetites, scarcity of goods, instability of possessions, etc.), we find this scientific approach in his discussion of the passions and the understanding.

Hume urges that the causes of pride (one's beautiful house, one's wit, one's address in dancing, etc.) are not *original* (innate):

Beside their prodigious number [of the causes of pride], many are the effects of art, and arise partly from the industry, partly from the caprice, and partly from the good fortune of men. ... 'Tis absurd, therefore, to imagine, that each of these was foreseen and provided by nature. [W]e must conclude, that there are some one or more circumstances common to all of them. [T 2.1.3.5, SBN, 281-282]

The basis for rejecting the various causes of pride to be original is that finding the common feature in the causes (which turns out to be the pleasure they engender) is a *better explanation*. Hume is here engaging in an inference to the best explanation, so typical of science, and yet not reducible to enumerative induction.

As for the understanding, it is central to Hume's view that, for example, observing fire and heat to be constantly observed, we are led to associate the ideas of fire and heat, i.e., we develop the disposition to be led from the idea of fire to that of heat. That we develop such a disposition is explained by our propensity to associate ideas of whatever objects are observed to be constantly conjoined. As for what could explain such a second order, proto-disposition, Hume's answer is that it is innate:

Here is a kind of ATTRACTION, which in the mental world will be found to have as extraordinary effects as in the natural. Its effects are every where conspicuous; but as to its causes, they are unknown and must be resolv'd into original qualities of human nature which I pretend not to explain. (T 1.1.4.6, SBN 12-13)

Thus Hume is engaged in two inferences to the best explanation: Our various and sundry dispositions to be led from one idea (e.g. of fire) to another (e.g., of heat) is explained by the proto-disposition to develop such dispositions upon observing constant conjunctions, and the best explanation for the existence of the proto-disposition is that it is original or innate. Even if Hume's epistemic *theory* makes no reference to the inference to the best explanation, his *practice* in pursuing the science of man clearly relies on such inferences that go beyond enumerative induction. Since such inferences are needed for a science involving micro-structures, my suggestion of finding the "because" in nature in scientific explanations accords at least with Hume's own scientific practice.

C. Further remarks on the two versions of Causation. My suggestion, then, is that all Hume needs for Causation is a "because" in nature of the kind provided by scientific explanations. Strawson requires a Causation, which is metaphysical and absolutely inaccessible to us. To put this in a slightly different way, my route to necessity is "bottom up" – starting with the observed regularities, we move upwards to scientific theories that explain them and render them Causally or Naturally necessary. Strawson's account is basically "top down" – since observed regularities could be complete flukes, Causation is metaphysically demanded to assure that the regularities are Causal. While both our accounts of Causation transcends the purely empirical realm of impressions, Strawson's metaphysical account is further removed from Hume's empiricist bent than my route based on our scientific endeavors.

Indeed Strawson takes his Hume's view to be fairly close that of Kant.

The idea [that our words may not only mean more than we know, but may mean more than we can know] is arguably present in a strong form, and at its most general level, in Kant's *Critique of Pure Reason*; in insistence that the appearance which makes up what he calls the 'empirically real world' must always be understood as appearances of (relationally of) something – noumenal reality – of which we can have no knowledge. (Strawson, p. 125)

Strawson claims the view he attributes to Hume is somewhat weaker by insisting only that it is intelligible to suppose that there may exist things or aspects of things that we can form no genuinely contentful conception on the terms of the (strict) theory or ideas. (Strawson, p. 127)

But given that Strawson's "natural interpretation" has Hume repeatedly insisting that (Strawsonian) Causation certainly exists, what Strawson is claiming for Hume is the Kantian view whereby Causation is the *noumenal* reality whereby causation becomes Causation.^v In this way, Causation for Strawson's Hume is metaphysical while for my Hume it relates to science.

D. The closing remarks of the *Enquiry*. In light of this result, I should think if we are to urge a Realist interpretation or reinterpretation of Humean causality, we should opt for my science based Humean account. While Strawson's Realism relies heavily on the *Enquiry*, we should not forget the closing remark of that work:

When we run over the libraries, persuaded of these principles, what havoc must we make? If we take in our hand any volume; of divinity or school metaphysics, for instance; let us ask: *Does it contain any abstract reasoning concerning quantity or number?* No. *Does it contain any experimental reasoning concerning matter of fact and existence?* No.

^v Even if it is not a perfect fit, it seems to me that the following remarks on Kant's Antinomies by Gardner comes close to the kind of Causation Strawson's Hume is urging:

[We are] able to conceive intelligible character [intelligible causal power] as the explanation of empirical character [empirical causal power] but intelligible character itself we cannot conceive of explaining. [T]he nature of intelligible causality is also unknowable, for we can form no determinate concept of non-temporal agency. [Sebastian Gardner, *Kant and the Critique of Pure Reason* (London: Routledge, 1999), pp. 260-261]

Commit it then to the flames: For it can contain nothing but sophistry and illusion. (EHU 12.34, SBN 165)

Since it's hard to believe that Hume would have wanted to commit his first *Enquiry* to the flames, I should think if Hume were to accept any Realist account of causation, it would be one along the lines I have suggested. Of course the weak realist options is also viable and it has the advantage of presenting a streamlined empiricist account of causation. But perhaps precisely because of this advantage, I find the weak realist option artificially thin and am inclined towards the kind of Realism I have urged as the most plausible reconstruction or reinterpretation that may nevertheless be acceptable to Hume.^{vi}

Francis Watanabe Dauer
University of California at
Santa Barbara (*emeritus*)

References

- ¹ T. L. Beauchamp and A. Rosenberg, *Hume and the Problem of Causation* (New York: Oxford University Press, 1981).
- ² Galen Strawson, *The Secret Connexion* (New York: Oxford University Press, 1989), p. 24).
- ³ See Simon Blackburn, "Hume and Thick Connexions," in Peter Millican ed., *Reading Hume on Human Understanding* (New York: Oxford University Press, 2002), pp. 259-276) as well as *Essays in Quasi-realism* (New York: Oxford University Press, 1993), and *Spreading the World* (New York: Oxford University Press, 1984).
- ⁴ I rely on W.V.O. Quine, "Ontological Relativity," *Ontological Relativity & Other Essays* (New York: Columbia University Press, 1969), pp. 26-68 (hereafter OR) and *Pursuit of Truth* (Cambridge, MA: Harvard University Press, 1992) (hereafter PT).

^{vi} In writing this paper, I have benefited from comments by Noel Fleming, Charles McCracken, and Anthony Brueckner.