Critical Reflections on Carl Hammer, "Explication, Explanation, and History" *

Haines Brown
Haines@histomat.net

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This essay represents some informal critical comments that were prepared for the History and Theory Reading Group (http://history.theory.googlepages.com), which meets every month in New York.

Hammer aims to reconcile explanation in the natural and the historical sciences by introducing the concept "control-producing partial sufficient conditions". This is intended as a broadening of the causal explanation that Hammer presumes is characteristic of the natural sciences so as to incorporate a) the determinations of human agency as a casual factor and b) the notion of cause as raising the chances of an outcome.

In neither case does Hammer really carry things forward, and one reason is that his citations suggest he is unresponsive to the enormous literature on those subjects written since 1985: his conception of science and of causality seem antiquated, and it will be argued are trapped within Enlightenment ideology.

The philosophy and practice of natural science has shifted from an emphasis on general law explanation to what is called single-case causality. This is for a variety of reasons that include:

1. Much of science concerns itself with an explanation of unique situations,which is to say, of emergent systems such as cosmology, evolutionary biology, and meteorology, where outcomes cannot be reduced to knowledge of some initial state of the system. This means that causal explanation is not universal in the natural sciences, but merely one of a variety of explanatory modes that are chosen to suit the nature of the object being explained (and, arguably, to suite the needs of the person providing the explanation).

2. Much of science is concerned with open systems, in which case outcomes become to a degree an effect of environmental contingencies. In fact, it is widely felt that in principle all systems are open, and a closed/isolated system is only a hypothetical limiting case. To the extent this is true, causal explanation collapses because outcomes are not unequivocally determined by our knowledge of an initial state of a system, which is necessarily closed because only a closed situation is subject to a complete description.

3. There is a common philosophical view today that general laws do not really explain, but are merely a generalization of our observations. Given this, explanation in natural science

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now includes accounting for a unique outcome in terms of the contingencies that gave rise to it rather than subsume the outcome under a general law. There is a tendency to make single-case causality foundational, and causal explanations implies an explication of operative causal mechanisms.

Therefor it is unfortunate that Hammer starts out with Dray's distinction (1957 [n.b.]) between "how" and "what" explanations, which were felt to be contradictory. The former was meant to embrace the deductive-nomological explanation of the natural sciences, while a "what explanation" was felt to be characteristic of historical narrative. It is Hammer's aim to reconcile these two kinds of explanation. This is a worthy goal, but his execution leaves much to be desired.

A new standard synthesis that reconciles how and why explanations has so far eluded us, but there is nevertheless an intuition that it requires a redefinition of the "state" of a system. Traditionally the state of a system was a description of the set of intrinsic empirical or observable properties that fall within a physical or conceptual boundary. However, if systems are in principle open, then a definition of the state of a system must also include extrinsic properties. The relation of the system with its environment must be considered essential to it rather than accidental–on an ontological par with intrinsic properties. Since the environment is open and therefore in principle undefinable in terms of observables (if you describe these contingencies, they become part of a larger closed system), changes that take place are necessarily probabilistic. It is significant that the hisorian habitually uses a probabilistic vocabulary.

The underlying problem here is the now discredited positivist conception of science based on the laboratory model: it constructs a closed system for which outside contingencies are either screened or compensated for. In a closed system, outcomes are (generally) unequivocally determined by its initial state. But what is taught in the classroom no longer has much relevance for the philosophy or actual practice of natural science. A dialog between the natural and the human sciences can only arise from the current state of our knowledge any by freeing ourselves of positivist assumptions.

A central issue of Hammer's article is just what it meant by "explanation". He points out, correctly I believe, that in general it means the reason why something is what it is, and often this reason implies a certain necessity. However, an assumption that this necessity means causal explanation has long been questioned. As far back as Darwin, it has been argued that the explanation of the evolution of a system that generates novel or unique outcomes requires the introduction of possibility as an attractor. The explanation of the outcome of an evolutionary process entails representing the observable structure acting as a probabilistic constraint on possibilities arising from its relation with its open environment.

Now, while this kind of approach today is neither coherent nor a consensus, it at least recognizes the limitations of the old positivist notion of a causal explanation of closed systems. More significantly, it defines common ground for the natural scientist and the historian, for human history is clearly an open system that gives rise to unique outcomes, and explanation looks to contingencies as one aspect of explanation.

Central to Hammer's reconciliation of how and why explanations is what he calls "control-producing partial sufficient conditions". This is an unfortunate choice of words for several reasons.

First, the term "sufficient condition" is contradictory in this context. A sufficient condition is one that logically requires the outcome, but if a condition is "partial", it then only increases the chance of an outcome, and it is t no longer logically necessary. Like his presumption of a

positivist hypostatization of entities, Hammer's appeal to old fashioned logical positivism betrays his purpose. His partial sufficient condition really seems an appeal to probabilistic causality, and it is unfortunate that he chooses to ignore the considerable literature on this issue.

Hammer is unable to free himself from what is called a factor analysis. A "factor" is a closed definition of a causal influence, but it is well understood today that factor analysis is inappropriate for such complex or emergent systems as human history. These systems cannot be reduced to a set of interacting or influential factors. Emergent systems by definition cannot be reduced to a description of the factors operative in some initial state, for if the system is open, the outcome depends in part on its extrinsic properties that are a source of its possibilities.

His term "control" means the power of a cause to produce an outcome, and much of his article tries to define the conditions that affect the power of the cause. Sadly, while he does not insist his five conditions are comprehensive, it is clear in his description of them that he is thinking of the power of the individual historical actor to bring about change. This is most unfortunate.

First, his factor analysis, his reduction of effects to the causal influence of hypostatized entities, that leads Hammer to represent the intentions of powerful individuals as the engine of historical change. He does not say this explicitly, and so I have to be careful not to put words into his mouth.

The first condition he calls a "partial sufficient condition", which I take to mean that a factor has a probabilistic effect. In his example, though, it is clear he is not speaking in terms of the natural sciences, but of individual decision making, where the actor understands that a given decision affects the chances for a desired outcome. His example is the causes of a war: orders of the king, a territorial dispute, a contested succession, control over the military, glory-lust of a leader or a people. With the exception of a reification of "the people", these examples entail powerful individuals making choices. This today would be considered rather quaint and naive.

The second he calls a "normative condition", by which he means the normative force as a reason held in the mind of the historical actor. Here is an optimal decision theory that harks back to Enlightenment ideology. There is an enormous literature criticizing optimal choice theory, and one also wonders how an idea acquires the status of a physical force. There is no question that intentions or ideas do have effects, but surely this is not a simple causal relation.

However, Hammer speaks of control as a practical knowledge to manipulate the world, an intellectual power. This confuses the notion of power, which in the natural sciences means an energy transfer that results in work, and power as a relation of links in a causal chain. For example, if I decide to amuse myself by setting off a firecracker, there is a causal chain with an intention at one end and the sound and fury of an explosion at the other. Clearly, however, the minuscule energy associated with my mental intention is not comparable to the explosion. What is involved is a causal chain consisting of constraints that actualize possibilities available in its environment of each link. The power of the explosion is the dissipation of the bonding energy of complex chemical molecules into the form of heat and light. While there is a causal chain that describes the "why" of the explosion, that explanation is incomplete without an understanding of how my match raises the energy level of the explosive to the point that a path is opened for the atoms to move to a more probable state.

Another problem is that no one really believes that history is the simple effect of the decisions of powerful individuals. Besides unintended consequences, there are contradictory consequences where outcomes are quite the opposite of intentions. One way to explain this is to appeal to structural causality, where the effect of one element of the system on another depends on the overall structures in which they are embedded. Decisions take place in a social and a material

environment that are sources of possibilities that are actualized as an outcome, and the outcome depends on these material and social structures.

Another condition is that the factor is that we recognize or identify a condition as being a partial sufficient condition of change. Again, this harks back to the Enlightenment notion of ”rationality”, which refers to those kinds of decisions that are likely to increase one’s talents. The problem is that if action is based on a functional relation of means and ends, there would be no history at all, no struggle for improbable outcomes. The Enlightenment answer was to suggest an ontological distinction between mind and world, with the mind having a mysterious creative capacity to transcend circumstance, and then somehow the idea acquires a mysterious innate power to change the world.

The fourth circumstance that determines our power to control circumstances is whether a circumstance can be manipulated. While this certainly is involved in decision making, the question is begged. Often we wish to manipulate intractable circumstances, and in fact one might argue that any problem solving entails this to a degree. If the engine of history were a movement toward a more probable state as a result of seizing upon the easiest opportunities, there would be no history. The fifth circumstance seems the same as the fourth, which is that there are no alternative means readily available to achieve our ends and so we adapt to opportunities.

I apologize for belaboring these points, but they are at the core of Hammer’s argument and clearly show that he is working in terms of Enlightenment ideology rather than the current state of natural science. This blinds him to a range of insights that offer at least tentative or speculative grounds for a kind of explanation that is as well suited to the natural sciences as it is to history.