REFLECTIONS ON ANGELA COVENTRY'S *HUME'S THEORY OF CAUSATION*[1]

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There are regularities in the world of which we become aware in our sensible experience; we record through our sense experience of the world that, for example, All humans are animals:

(1)   All H are $A = (x)(Hx \supset Ax)$

So far as sense experience is concerned, a regularity like this is contingent. There is nothing about H and A that requires them to be exemplified together: as Hume[2] argues, species given in sense are logically separable (T80): everything is what it is and not any other thing. So far as sense is concerned, when one makes a judgment to the effect that such a regularity obtains, the "mind goes beyond what is immediately present to

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[1] Angela Coventry, *Hume's Theory of Causation: A Quasi-Realist Interpretation* (London: Continuum, 2006).

[2] References are to D. Hume, *Treatise of Human Nature*, ed. L. A. Selby-Bigge, rev. ed. P. H. Nidditch (Oxford: Oxford University Press, 1968), and D. Hume, *Enquiry concerning Human Understanding, in Enquiries concerning Human Understanding and concerning the Principles of Morals*, ed. L. A. Selby-Bigge, rev. ed., P. H. Nidditch (Oxford: Oxford University Press, 1975). References to these are by page number in parentheses following a "T" in the former case and following an "E" in the latter case.

the senses" (T73). Because there is no necessity here it is always possible that a judgment like this is in error. That it is possibly wrong does not imply that it is wrong – *posse* does not imply *esse* – but we never know with certainty that when we make such a judgment we are making a true judgment.

But some, e.g., Aristotle, and Descartes (though they were concerned with different regularities), argue that there are connections among the species or forms occurring in such regularities[3]:

(2) $H\mathbf{R}A$

These are timeless truths and are therefore necessary, objectively necessary. For each such necessary truth we have

(3) $H\mathbf{R}A \supset (x)(Hx \supset Ax)$

Assuming that this is also necessary, the regularity (1)

$(x)(Hx \supset Ax)$

is also necessary. Hence, if we know that (2) and (3) obtain, then when we judge the regularity of sense to obtain, we know for certain that this judgment is true.

For Aristotle, we know facts like (2) through a non-sensible intuition, arrived at through abstraction of the forms from sense experience of individuals of those sorts, and the connection is given in a real definition which can be displayed in a syllogism. As for (3), the forms

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[3] For discussion of these matters in greater detail, see F. Wilson, *The Logic and Methodology of Science in Early Modern Thought: Seven Studies* (Toronto: University of Toronto Press, 1999), especially Study One ("Establishing the New Science: Rational and Empiricist Response to Aristotle") and Study Seven ("Descartes' Defence of the Traditional Metaphysics").

are active forms, genuine unanalyzable powers. These forms, when present in individuals, act in such a way that the individuals exemplify species in conformity to the necessary connections among those species or forms; that is, the active forms so act that (3) obtains, and necessarily obtains.

For Aristotle the concern is for the regularities in the way substances of various sorts appear. For Descartes, the world we experience by our sense contains but one substance, namely extended substance. So the regularities with which he is concerned are the laws of physics. However, the basic pattern concerning causation is more or less the same. For Descartes, there are no active powers (save for minds): only God is active in the world we know by sense. So there are the ideas (2) in God's mind; these forms of things we know, not by abstraction from sense experience, but by way of our innate ideas. And God is such that he or she so acts that, if H is exemplified, then that is the occasion for God also acting that A is also exemplified. Regularities among things of the world of sense reflect the steadfast nature of God's being.

Hume criticizes this account of causation. We have no impression, Hume argues (T160), following Malebranche (T158), of an objective necessary connection, and therefore no idea of such a connection; hence the Aristotelian sort of connection does not exist. But neither do we innately have such an idea, since there are no such things as innate ideas (T160). Hence, "in all these expressions," that is, expressions referring to objective necessary connections or some variant thereof, e.g., unanalyzable powers, "we have really no distinct meaning, and make use only of common words, without ant clear and determinate meaning." (T162) But we can't say that these expressions "never have any meaning"; rather, they do have a meaning but they "lose [this] their true meaning by being wrongly apply'd." (ib.) Hence, as Coventry argues, the so called realist reading of Hume is simply mistaken[4].

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[4] I have elsewhere discussed in detail the "realist" reading of Hume and have shown it is not the sort of reading that should be attributed to any great philo-

Thus, for Hume causation, objectively considered, *just is* regularity: that is all there is to it. Whence Hume's first definition of *cause*: a cause is "an object precedent and contiguous to another, and where all objects resembling the former are plac'd in a like relation of priority and contiguity to those objects, that resemble the latter." (T172) Here the cause is a sufficient condition for the effect: $C \rightarrow E$. This is the version in the *Treatise*. In the *Enquiry* he gives basically this definition, but goes on and inserts a further clause asserting that "If the first object had not been the second never had existed." (E76) This clause that he adds is more than a "counterfactual twist," as Coventry describes it. (p. 93) What he adds is a clause that asserts that the absence of the cause implies the absence of the effect, the former, it says, is a sufficient condition for the latter: not-C implies not-E. But by contraposition this says that $E \rightarrow C$, i.e., it says that C is a necessary condition for E. Thus, the cause is necessary and sufficient for the effect, or, more exactly, the cause is of a kind C which is a necessary and sufficient for there being an object, viz., the effect, of kind E: $C \leftrightarrow E$.

However, we must distinguish between regularities like the laws of physics and regularities like

All the coins in my pocket are loonies

Both sorts are regularities we know by sense experience; both sorts are exemplified by things only contingent. But a regularity of the latter sort, if true, is only accidentally so. There is a sort of necessity attaching to laws of the former sort that is absent from those of the latter sort. Coventry, following philosophers such as Chisholm, identifies this necessity with the capacity to support contrary-to-fact conditionals. The laws of physics do

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sopher, Hume in particular: it doesn't fit Hume's texts and philosophically it is an incoherent doctrine. See F. Wilson, *The External World and Our Knowledge of It: Hume's Critical Realism, an Exposition and a Defense* (Toronto: University of Toronto Press, 2008), Ch. I, sec. D, pp. 88-114.

this – we are prepared to accept a judgment to the effect that, if I were to drop this coin [which is a penny] it would fall to the ground – but the accidental generalities do not – we are not prepared to accept a judgment to the effect that, if I were to put this coin [which is a penny] in my pocket then it would be a loonie.

Hume makes the same point. This is his second definition of *cause*: a cause is "An object precedent and contiguous to another, and so united with it in the imagination, that the idea of the one determines the mind to form the idea of the other, and the impression of the one to form a more lively idea of the other." (ib.) For Hume, a regularity is causal just in case that we have become to be mentally so disposed with regard to it that (1) we use it to predict – "the impression of the one [leads us] to from a more lively idea of the other" – and that (2) we use it to support the assertion of contrary-to-fact conditionals – "the idea of the one determines the mind to form the idea of the other." In other words, a causal regularity is distinguished from an accidental generality by the *subjective* fact we use the former in ways that we do not use the latter.

Taken this way as Hume's full account of cause, it is fair to say, in analogy with a similar position in ethics, that it is an *emotivist* account of causation, as I pointed out some years ago,[5] and Coventry rightly sees this as an *anti-realist* account of causation. Coventry proposes that this is not the whole story.

First off, there is the tendency of the mind to as it were smear itself onto the objective world. Coventry draws our attention to this. But her discussion does not say all that should be said: she leaves it in such a way that it seems somewhat arbitrary where the mind does this smearing. But Hume is more definite than that. To develop this point, note that the idea

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[5]F. Wilson, "Hume's Theory of Mental Activity," in D. F. Norton, N. Capaldi, and W. Robison (eds.), *McGill Hume Studies* (San Diego: Austin Hill Press, 1979), pp. 101-120. See also F. Wilson, *The External World and Our Knowledge of It*, Ch. I, sec. A, pp. 23-46.

of 'cause' is given two definitions, and is therefore two abstract ideas, in Hume's sense of 'abstract idea', one of a natural relation (the first definition) and one of a philosophical relation (the second definition). Now, for Hume, an abstract idea is a resemblance class of ideas and impressions with which a general terms has become associated. (T20)[6] Furthermore, if two ideas closely resemble each other, we are naturally liable to confuse the two (cf. T146); this is one source of the smearing we have noted. (cf. T204n) In fact, we have a resemblance between a relation understood objectively (naturally) and the act in which the mind surveys that relation, the objective relation (where this act is the relation understood philosophically). The resemblance between these two abstract ideas of causation leads to their being confused with one another, and, more strongly, fused with one another into a single (incoherent) idea of an objective necessary connection – objective from the first definition, necessarily connected from the second definition. This is the origin of the "obscurity and error [that] ... begin to take place ... when we transfer the determination of the thought to external objects, and suppose any real intelligible connexion betwixt them; that being a quality that can belong to the mind that considers them." (T168)[7] Aristotelians and Cartesians, then, by a natural tendency of the human mind, are led to form their confused idea of an objective necessary connection. This is the *projectionist* reading of Hume on causation. It is clear that, while such a projection might in a sense be natural, it is still a confusion and therefore is to be rejected by any philosophy which, like Hume's, aims for clarity of thought. Such a philosophy take Hume's method of escaping confusion by tracing our ideas to their origins in the impressions we have of sensible things. Such a tracing, as Hume has carefully argued, leads to our distinguishing the two ideas of causation that he has defined, and thereby to the recognition that

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[6] Cf. F. Wilson, *The Logic and Methodology of Science in Early Modern Thought: Seven Studies*, ch. 1, sec. C, p. 67ff.

[7] For greater detail on this point, see F. Wilson, *The External World and Our Knowledge of It*, pp. 64-69 and pp. 312-315.

objective necessary connections, as projections, are illusions and discourse about them is non-sense. If we do project the subjective tendencies into or onto objective things, then we are doing something that clear philosophy will eliminate. Projection does occur – we find it in Aristotelians and Cartesians – but Hume himself is not a projectionist: such projection, or, what is the same, the idea of an objective necessary connection, disappears in any philosophy that, like Hume's, aims at clarity of thought. It is not only a false reading of Hume, it is a view that is positively dangerous. This is clear in ethics: to defend projectionsim as an advance over emotivism is to allow philosophers and vulgar alike to create the illusion that values which are in fact relative really are objective – which makes them impervious to criticism. With respect to causation, the position that it is okay to project subjective necessity onto things in the world is to allow people the illusion that there are objective causal necessities, and, as such, as objectively necessary, they become impervious to criticism: it legitimates: one's saying something like this, "my metaphysics is objectively true, true *a priori*, and your criticism is not only mistaken, indeed *must* be mistaken, and, since it is clear *a priori*, it follows that your inability to recognize the truth of my metaphysics means, if that inability is involuntary, that you are beyond reason, or, it means, if that inability is willful, that you are probably morally corrupt." On Hume's view, proposals in either physics or morals cannot be defended by appeal to some *a priori* vision or to insight rooted in some sort of faith. Hume's aim is to open science and ethics to the light of critical reason, not to return them to the dark days, not so long ago, when dogmatism ruled.

Secondly, there is the issue of what Coventry calls the causal standard, a standard that defines the nature of truth for causal judgments – though I would prefer it that truth be left as correspondence, as Hume argues ("truth or falsehood consists in an agreement or disagreement either to the real relations of ideas, or to real existence and matter of fact" [T458]), rather than suggesting that a causal judgment to be acceptable to reason be true not only in respect of its correspondence to the facts but

also and further that it is true just to the extent that it comes closer to or farther from the imaginary standard, as Coventry proposes as part of her reading of Hume as a quasi-realist – that is, as someone who is definitely not a realist but also one who hopes to disguise in language acceptable to the realist his true views as an anti-realist.

Here the "rules by which to judge of causes and effects" (T, Bk. I, Part iii, sec.15) are crucial.[8] Coventry does not make clear that these rules are a clear statement – the first clear statement – of the logic of experiment, rules that we now call "Mill's Methods." The first three rules define the notion of cause. The fourth rule states that "the same cause always produces the same effect, and the same effect never arises but from the same cause." This principle we "derive from experience," and the next "hangs on this [that is, on Rule Four]" as do the remainder. (T173-4) This principle, Rule Four, is a "law about laws" (to use Mill's phrase); it states (as Mill also puts it) that "it is a law, that every event depends on some law," or, to put it in yet another way, it states this "it is a law, that there is a law for everything".[9] This law about laws is a habit for forming habits. It is a regularity that states that in all areas there are causal regularities and that in each case the regularity is one of a number of limited range of possibilities for being the conditioning property for the property in which we are interested, that is, the conditioned property: it states that there obtains, in each area of concern, a Principle of Determinism and a Principle of Limited Variety. Rule Five states the Method of Difference for sufficient conditions and Rule Six states the Method of Agreement for necessary conditions. Given the Principles of

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[8] See F. Wilson, *The Logic and Methodology of Science in Early Modern Thought*, Study Five, "'Rules by which to Judge of Causes' before Hume," pp. 319-363. See also J. Weinberg, "Induction," in his *Abstraction, Relation and Induction*, (Madison WI: University of Wisconsin Press, 1965), pp. 121-163.

[9] John Stuart Mill, *System of Logic Ratiocinative and Inductive*, vols VII and VIII of J. Robson, ed., *The Collected Works of John Stuart Mill* (Toronto: University of Toronto Press, 1973), in vol. VII, Bk. III, chapter v, sec. 1, p. 235.

Determinism and Limited Variety, experiments, whether artificial or natural, will eliminate the possibilities that are not truly the conditioning property and lead the researcher to the one uneliminated possibility; this remaining possibility, since it is uneliminated and since the two mentioned Principles do obtain, must be the regularity that truly describes the area. Hume is often read as holding that inductive inference is a matter of enumerative induction, a matter of mere habit formation deriving from an observed constant conjunction. It is true that the second definition of cause states that a causal judgment is an association of ideas. It does not follow that such a judgment is the product of a process of association, that is, in effect, simple enumeration[10]. Hume's use of the "rules" shows this not to be the case. Induction by elimination, that is, the experimental

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[10] Karánn Durland, in her contribution to this symposium on Angela Coventry's study, suggests that it is Hume's view that "when we infer one object after observing another ... we do not engage in any sort of reasoning ..."; but this fails to see that such habits of thought just are themselves causal reasoning – this is what causal reason becomes when one rejects the objective necessary connections of the Aristotelians and the rationalists. See Wilson, *The External World and Our Knowledge of It*, p. 174ff.

Nor is it correct to assert, as Durland also does, criticizing Coventry, that "the role that he [Hume] attributes to custom or habit strongly suggests that he thinks these judgments do not require the careful consideration and application of rules ..."; but this is to ignore Hume's careful use of the idea that reason, causal reason, can proceed in ways that are "indirect and oblique." For the importance of this point, see Wilson, *The External World and Our Knowledge of It*, p. 518ff. The point is not difficult, even though many miss it: there can be customs for forming customs, that is, regularities about regularities, laws about laws, which can function as rules with normative force – Hume makes clear how this could be in his ethical theory. It is obligatory that one read Book I of the *Treatise* in the light of what Hume says in Book III about morality and moral norms. See *The External World and Our Knowledge of It*, Ch. I, and p. 318ff. To ignore Hume's "rules by which to judge of causes and effects" is to ignore the capacity of the mind to be reflective about its own workings, and is in effect to say that for Hume all induction is induction by simple enumeration.

method of Newton, is what counts. "Our reasonings of this kind," he notes, "arise not *directly* from the habit, but in an *oblique* manner ..." (T133); "reflexion produces the custom in an *oblique* and *artificial*" (T104) These oblique reasonings are inferences that conform to the "rules by which to judge of causes." In fact, Hume goes out of his way to show that simple enumeration, inference "directly from the habit," is, as Bacon said, a "puerile" or "childish" method. Hume points out how simple enumeration can lead to including accidentally accompanying conditions to be causally relevant (T149f), but that these defects in this very ordinary unreflected sort of inference can be removed by ensuring that our judgements conform to the "rules by which to judge of causes." We have general rules easily arrived at by the imagination, which have, however, exceptions (T146); these can be corrected by logically more acceptable rules arrived at through conforming out inferences to the "rules by which to judge of causes."[11] Coventry does not notice the role of the "rules" in securing the corrections needed in the judgements we make in our hasty everyday experience. Hume points out that we can often infer a correct causal judgment from a single instance (T131), which is neither habit nor simple enumeration. Coventry seems to find this a bit puzzling (p. 137), but careful analysis[12] shows that this involves an indirect or oblique inference based on Rule Four, which Coventry notes, and also on Rule Five, the method of difference, which Coventry does not note.

The main point is that we have to take the "rules" seriously.

Some people hold that

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[11]For these cases of "unphilosophical" inferences, and others, see F. Wilson, "Hume's Defence of Causal Inference," *Dialogue*, 22 (1983), pp. 661-694; and in greater detail in F. Wilson, *Hume's Defence of Causal Inference* (Toronto: University of Toronto Press, 1997).

[12]Cf. F. Wilson, "Hume and Ducasse on Causal Inference from a Single Experiment," *Philosophical Studies*, 35 (1979), pp. 305-309; and also F. Wilson, *Hume's Defence of Causal Inference* (Toronto: University of Toronto Press, 1997), p. 101ff.

Black cats bring bad luck

They hold things like this even in the face of contrary evidence – here in the case of black cats or, in another case, the wise man from Sligo who provides a counterexample to the generalization that Irishmen lack wit. But even if there are no clear counterexamples – think of astrology – persons who accept propositions of this sort are prepared to use them to support contrary-to-fact conditionals like this

If Fido were a black cat then he would bring bad luck

or like this

If this person had been born a taurus then he (or she) would be bad tempered

or like this

If Beattie had been an Irishman he would have lacked wit

or like this

Since Robertson was a scot he was pretty bright

or like this

If you don't scorn transubstantiation you will have a better life

In all these cases – cases of superstition – we have people accepting cognitively worthless generalizations as lawlike – using them to predict and to support contrary-to-fact conditionals. But clearly they are unworthy of such acceptance. We have not yet dealt with the issue of how we separate *science* from *superstition*. We have distinguished those

generalizations we accept as causal and those which are merely accidental generalities, but we have not yet distinguished among the former those which are *science* and those which are *superstition*. Hume's way of drawing this further distinction is clear: those generalizations are *worthy of acceptance as lawlike* just in case that they have been inferred from experience in conformity to the rules of science, that is, the "rules by which to judge of causes and effects."[13]

Coventry argues (p. 145f) that what rationally justifies accepting a generalization as lawlike is that it fits into an ideal theory about the causal structure of the world. She mentions here a suggestion to this effect of Frank Ramsey.[14] This is not far from Hume's thought but leaves out the importance of the "rules by which to judge of causes": the theory must be one inferred from our sensible experience of the world in conformity with these "rules." This neglect of Hume's "rules" also leads Coventry to blur (p. 145) the distinction between accidental generalities ("all the coins in my pocket are loonies") and the generalities accepted by the superstitious ('if you don't scorn transubstantiation you will lead a better life") and by the prejudiced ("Irishmen lack wit").

Suppose we have a series of generalizations which seem worthy of acceptance as lawlike:

$$\text{All } F \text{ are } G$$
$$(*) \qquad \text{All } F' \text{ are } G'$$
$$\text{All } F'' \text{ are } G''$$

where the F's are all of genus **F** and the G's are all of genus **G**:

F is **F**, F' is **F**, etc., G'' is **G**, etc.

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[13] See F. Wilson, "Hume's Defence of Science," *Dialogue*, 25 (1986), pp. 611-628.

[14] F. P. Ramsey, "General Propositions and Causality," in his *Foundations*, ed. D. H. Mellor (London: Routledge and Kegan Paul, 1978), p. 30.

Here we have in the case of the first of our little laws the logical form

> There is an f which is **F** and which is such that all f are **G**

which is itself a law. Then we can generalize over the three little laws to

> (L) For any g which is **G** there is a f which is **F** and which is such that all f are g

This, too, is a law, but it is at the generic level, rather than the specific: it is a "law about laws." It says that "for any **G** there is an **F** which is its cause." Or, as Hume put it in his Rule Four, "like effects have like causes." Hume's statement is a little more general but the point is the same. It is a principle that we "derive from experience" and is "the source of most of our philosophical reasonings." (T173)

To see this last, suppose we come across G^4 which is also of the genus **G**. We can infer from (L) that

> There is an f which is **F** and which is such that all f are G^4

The task of the researcher is now to find the **F** which this law asserts is there, to be found. Assuming we are concerned to discover a sufficient condition for G^4, then this law asserts that such a condition does exist and delimits an area **F** about where to look. We have a set of possibilities something like this

> $$\text{All } F^4 \text{ are } G^4$$
> (**) $$\text{All } F^{40} \text{ are } G^4$$
> $$\text{All } F^{41} \text{ are } G^4$$

where each of the F^4's are, of course, **F**'s. The task is to provide *experiments*, artificial or natural, which *eliminate* those among this set of

hypotheses which are false, that is, we need experiments that *falsify* the ones which are erroneous: science progresses through falsification.[15] Suppose we eliminate all but the first. That one must be true since it is the only uneliminated possibility and the law (L) asserts that one among this set must be true. Since this inference conforms to Hume's Rule Five, and since the researcher is seeking a sufficient condition, it is an application of the method of difference.

Each of the laws (*) is predictively successful, so each may be tentatively accepted. Given the species-genus relationships, any successful prediction made by one of these laws will also be a successful prediction by (L). So any confirmation of one of the specific laws (*) is also a confirmation of the generic law (L). But now (L) together with the data of elimination confirm as a further specific law, namely the first of the set (**). This further specific law derives confirmational support from the specific laws (*). Butt now this further specific law receives predictively confirmational support. This provides support in turn for (L), and again in turn it provides support – additional support – for the specific laws (*).

Here we have a set of specific laws, brought together in a theoretical structure by the generic law (L), where support for each of the specific laws is support for the generic law, which in turn means that support for any of the specific laws is support for each of the other specific laws.

This is all built up is a fashion that conforms to the patterns required by Hume's "rules by which to judge of causes." Fitting a law like the first of (**) into this theoretical structure renders it far more safe from refutation that any law inferred by mere habit, and we can recognize this, the "discovery of causes," "without waiting for that constant repetition,

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[15]Popper later emphasized the importance of falsification, but he did not invent it – Hume already knew it – as (I would argue) did Bacon. But these are further issues.

from which the first idea of this relation [viz. causation] is deriv'd." (T173-4)

This logical structure is in fact that of theories in natural science. Newton began with the law of falling bodies, the law of the pendulum, and other similar specific laws for mechanical systems. From these he generalize to the generic law we call the Law of Inertia, a law which has the form (L). From this law (and the other laws forming the axioms of classical mechanics, and the inverse square law for forces), he infers that the laws for planetary orbits will be elliptical – this is a generic characterization --, and this generic law is confirmed when the observational data determine the specific ellipse for each planet, eliminating any of the other alternatives.

This logical structure, I would suggest, gives an account of theories that is both adequate and Humean, and which enables one to distinguish science from superstition. Specific laws which fit into theoretical structures receive the sort of support that rationally justifies our treating them as lawlike. In contrast, there are no such theoretical structures for the generalizations characteristic of superstition. It is therefore contrary to reason, that is, the reason that is defined by Hume's "rules by which to judge of causes," to accept these judgments of superstition as lawlike. Just as it is contrary to reason to accept accidental generalities as lawlike.

Fitting in this way into a confirmed theoretical structure provides a sound reason for accepting a generalization as lawlike, that is, it justifies or makes reasonable one's adopting toward a generalization the subjective attitude stressed in Hume's second definition of cause. But truth is another thing: what makes the generalization that one accepts as true (if it is in fact true) is correspondence to the relevant matters of fact. This is anti-realism, not quasi-realism. But quasi-realism(for either causation or morals) is little more than anti-realism fudged. Nonetheless, Coventry has lots of nice things to say about Hume on causation: she is nearer to the truth about Hume than any realist could possibly be.