Counterfactuals and Humean Supervenience
Casalegno lecture 2
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Robert Stalnaker, MIT

1. Goodman’s project (1946)

The general form of the analysis: A conditional, \((A \square \to C)\) is true if and only if \(\{A\} \cup \Gamma \models C\) for some suitable set \(\Gamma\) of true sentences. \(\Gamma\) cannot be the set of all true sentences because that would trivialize the analysis, reducing it to the truth-functional analysis (Since when \(A\) is false, \(A\) conjoined with all truths, including \(\sim A\), entails every \(C\).)

Goodman assumes that \(\Gamma\) would have two parts: (1) laws of nature, and (2) relevant conditions. The idea was that a counterfactual is true if it follows by law from the antecedent plus suitable background conditions. So the problem divides into two problems: (1) giving an account of the difference between genuine laws and accidental generalizations, and (2) distinguishing the specific background conditions that were admissible from those that are not.

All attempts to constrain the relevant conditions in terms of the logical relations between \(A, C\) and other truths failed. Goodman’s final proposal was to suggest that the relevant conditions must be cotenable with the antecedent, where \(B\) is cotenable with \(A\) if and only if \(B\) is true, and it is not the case that \(B\) would be false if \(A\) were true. But this “proposal” was just a rhetorical device for admitting defeat, since as Goodman said, it makes the analysis blatantly circular.

2. Metaphysical reduction

Viewed abstractly, a project of metaphysical reduction is the defense of a thesis that says that a complete description of the world can be given in terms of the resources of some specified kind. For example, a phenomenalist argues that the world can be completely described in terms of the distribution of phenomenal qualities. The hard-line logical empiricist argues that vocabulary of the observation language suffices for a complete description of all there is a fact of the matter about. The materialist claims that physics gives a complete description of the world, including of the experiential and intentional states of rational creatures. The reductionist about identity over time claims that world can be completely described by describing the instantaneous states of the world at each time. A reductionist of any of these kinds might be an eliminativist about certain ordinary concepts that do not seem to conform to strictures imposed, but for the most part the defense of such theses proceeds by showing how ordinary concepts (talk of physical object, of unobservable entities, of experience and thought, of identity over time) can be reconciled with the constraints imposed by the thesis. One can show that many of our ordinary concepts can be explained as indirect ways of talking about phenomenal experience, observable things, mere physical objects, the relations between the properties of instantaneous objects. But the defense of a reductionist or supervenience thesis also requires a clear specification of the supervenience base, and a defense of the presupposition that one has identified an autonomous aspect of the world. It is sometimes assumed by both sides of a dispute about a supervenience thesis that we have identified the \(B\) properties, and understand what it would be to give a complete description of that aspect of the world that concerns the distribution of the \(B\)-properties. What is in dispute is
whether such a description is complete – whether the distribution of A properties supervenes on or goes beyond that description. But often the problem with a reductionist or supervenience thesis is that it has not identified the supervenience base, or defended the thesis that it provides resources for describing an identifiable aspect of reality.

3. Lewis’s project: Humean supervenience

“Humean supervenience is named in honor of the great denier of necessary connections. It is the doctrine that all there is to the world is a vast mosaic of local matters of particular fact, just one little thing after another. . . . We have a geometry: a system of external relations of spatio-temporal distance between points. Maybe points of space-time itself, maybe point-sized bits of matter or aether or fields, maybe both. And at those points we have local qualities: perfectly natural intrinsic properties which need nothing bigger than a point at which to be instantiated. For short: we have an arrangement of qualities. And that is all. There is no difference without a difference in the arrangement of qualities. All else supervenes on that.” (Introduction to Philosophical Papers II, pp. ix-x)

The world has its laws of nature, its chances and causal relationships, and yet – perhaps! – all there is to the world is its point-by-point distribution of local qualitative character. We have a spatiotemporal arrangement of points. At each various local intrinsic properties may be present, instantiated perhaps by the point itself or perhaps by point-sized bits of matter or of fields that are located there. There may be properties of mass, charge, quark colour and flavor, field strength, and the like; and maybe others besides, if physics as we know it is inadequate to its descriptive task. Is that all? Are the laws, chances, and causal relationships nothing but patterns which supervene on this point-by-point distribution of properties? (Plurality of Worlds, p. 14)

**Hume:** “Upon the whole, there appears not, throughout all of nature, any one instance of connexion, which is conceivable to us. All events seem entirely loose and separate. One event follows another; but we never can observe any tie between them. They seem conjoined but never connected. (An Enquiry Concerning Human Understanding, section VII)

“Though there is no such thing as Chance in the world; our ignorance of the real cause of any event has the same influence on the understanding, and begets a like species of belief or opinion.” (An Enquiry Concerning Human Understanding, section VII)

**A. J. Ayer:** “I propose, then, to look upon the world as consisting of a bedrock of fact, and the only statements which I shall regard as being strictly factual will be those that are limited in their content to supplying true or false descriptions of this world, together with such statements as are obtainable from them by quantification or by the use of extensional operators. All other empirical statements, or at least all those that function at a higher level, will be construed as relating to the arrangement, or the explanation, of what are taken to be the primary facts.” (115)

“I want to make a distinction which ordinary language blurs. Thus the familiar objects which will figure in my examples are meant to be identified by their phenomenal properties. My references to them are not be understood as carrying any logical implications about their powers.” (115)
[Ayer considers the question, what we should say about a counterfactual flip of a fair coin. He concludes that a statement like “If I had flipped the coin, it would have landed heads” is not meaningless, but that it does lack a truth-value. But, he then raises a question about this conclusion.]

“We are allowing the principle of excluded middle to apply to such statements as that there are flowers growing in some unexplored cranny of a mountain, or shoals of fish swimming in a sea, even though their presence goes for ever undetected. In these cases we can, indeed, claim that the statements are testable in principle. A suitably equipped observer might have occupied the requisite spatio-temporal position. But then I might have tossed the coin. What is the difference? The answer is that we draw a distinction between the cases in which the lack of verification is due to the absence of an observer and those in which it is due to the omission of some action from which one or another state of affairs would result.” (121-22)

“It is only at some level of theory that we can form any picture of an objective world.” (114)

“The upshot of this discussion is that in a certain sense causes are what we choose them to be. We do not decide what facts habitually go together, but we do decide what combinations are to be imaginatively projected. The despised savages who beat gongs at solar eclipses to summon back the sun are not making any factual error. . . . They see what is going on as well as we do; it is just that we have a different and, we think, better idea of the way the world works.” (p. 139)

(Quotations from Ayer, “The problem of conditionals” in Ayer, Probability and Evidence, 1972.)

4. Lewis’s defense of Humean supervenience

The project is to explain empirical modal concepts, in sequence, taking care to avoid circularity.

First in the order of explanation is an account of laws of nature. The strategy is a version of F. P. Ramsey’s “best system” explanation: The laws of nature is the theory that provides the best systematization of the regularities that describe the facts, where “best” is explained in terms of a mix of strength and simplicity.

Second in the order of explanation is the analysis of counterfactual conditionals in terms of comparative similarity of possible worlds. Here the task is to explain the relevant respect of similarity in a noncircular way. One is allowed to appeal to laws of nature, which are to be explained independently of counterfactuals, but otherwise only to matters of fact of a kind that conform to the Humean strictures.

Third, given an analysis of counterfactuals, one can define a notion of counterfactual dependence: Here is the general idea: Let A_1, A_2, . . . and C_1, C_2 . . . be two sequences of propositions, of equal number, where the A’s and the C’s are each pairwise disjoint, or incompatible. Then the C’s depend counterfactually on the A’s if all of the counterfactuals A_i □→ C_i are true. (See Lewis, “Causation”)

Fourth, causation is to be explained in terms of counterfactual dependence.
As Lewis emphasized, each step in the process has its own set of problems, and this is only a general strategy, and not a finished reductive project.

Lewis regarded the analysis of chance – objective probability – as a further problem that remains even if the details of the analyses of laws, counterfactuals and causation could be successfully filled in.

Priorities for the relevant respects of similarity

(1) It is of the first importance to avoid big, widespread, diverse violations of law.
(2) It is of the second importance to maximize the spatio-temporal region throughout which perfect match of particular fact prevails.
(3) It is of the third importance to avoid small, localized, simple violations of law.
(4) It is of little or no importance to secure approximate similarity of particular fact, even in matters that concern us greatly. (Lewis, 1979, 47-48)

5. The supervenience base

For Hume (and Ayer) the Humean reduction is to a phenomenalist base: impressions, which are the source of all ideas. But for Lewis, the base consists of the fundamental properties, as identified by physics. But is it plausible to think of these properties as separable from their causal powers? Lewis is quite explicit that (on his metaphysical picture) the fundamental properties are only contingently connected to their dispositional properties, and to the laws.

If one judges (as I do) that the reductive project is misconceived, what is the alternative? What kind of explanation, short of reduction, should we give of the priorities that govern the selection of the relevant possibilities for the interpretation of counterfactual conditionals? We need to start by looking at the function of counterfactuals in epistemology and in practical reasoning.