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DISCUSSION

Rescher's Unsuccessful Evolutionary Argument

Nicholas Rescher's *A Useful Inheritance* (Rescher [1990]) is an accessible and important work in evolutionary epistemology. In this work Rescher brings together threads from many of his writings as he defends a version of cognitive Darwinism which holds that:

the codes of practice by which we humans pursue the project of serious inquiry in science is the product of rational selection. The systematic practices that constitute the *modus operandi* of 'the scientific community' in its various characteristic aspects are, in the main, products of a cultural evolution proceeding under the governing directive of functional effectiveness (Rescher [1990], pp. 52–3).

Rescher maintains that the governing standards of rationality within the western tradition are reflected in the goals of explanation, prediction and control of natural phenomena (Rescher [1990], p. 42). According to him, if our scientific practices were not generally successful in accomplishing these goals, we would have given up on them long ago.

While he recognizes that human agents have other purposes—'who wants poetry written on scientific principles?' (Rescher [1990], p. 45)—Rescher's main aim is to account for 'the cognitive accessibility of nature'. That is, he wishes to show that our cognitive capacities and practices provide us with *knowledge* of the independent world. His central argument on this point is summarized in the following passage:

it is no more a miracle that the human mind can understand the world through its conceptual resources than that the human eye can see it through its physiological resources. The critical step is to recognize that the question 'Why do our conceptual methods and mechanisms fit "the real world" with which we interact intellectually?' is to be answered in basically the same way as the question 'Why do our bodily processes and mechanisms fit the world with which we interact physically?' (Rescher [1990], pp. 61–2).

Of course, neither eyes nor intelligence are necessary according to any reasonable evolutionary account—evolutionary processes might well have engendered neither. Indeed there may be many 'desirable' traits which natural selection has not 'generated'—natural selection works only by selecting those

traits which arise through random variation, and there is no guarantee (or even reasonable expectation) that 'desirable' traits will arise (or arise at a time when they might be selected).

Rescher's account of the intelligibility of the world and the adequacy of our scientific practices does not *presuppose* a necessary connection between 'the way the world is' and 'intelligible laws, practices, or methods'. Instead, his argument is a naturalistic and transcendental one: he notes that intelligence has evolved and then maintains that this fact tells us something about the world as it is independent of the intelligence which has evolved within it. In his own words:

... a world in which intelligence emerges by anything like standard *evolutionary* processes has to be pervaded by regularities and periodicities in the organism-nature interaction that produces and perpetuates organic species. And this means that nature must be cooperative in a certain very particular way; it must be stable enough and regular enough for there to be appropriate responses to natural events that can be 'learned' by creatures. If such 'appropriate responses' are to develop, nature must provide suitable stimuli in a duly structured way. An organically viable environment—to say nothing of a *knowable* one—must incorporate experiential structures (Rescher [1990], p. 64).

In short, Rescher provides an *a posteriori* account of the intelligibility of the world: given what our cognitive capacities and practices are like, we may legitimately conclude that the world must be sufficiently stable, regular, and structured. If it were not, our cognitive capacities and practices could not have evolved. Rescher does not maintain that this argument guarantees that we will uncover the true structure of the world. Instead, he claims that his argument establishes that we can only conclude that 'the applicative efficacy of science undoubtedly requires *some* degree of alignment between our world-picture and the world's actual arrangement . . .' (Rescher [1990], p. 72)

Rescher contends that 'a world in which intelligent creatures emerge through the operation of evolutionary processes must be an intelligible world' (Rescher [1990], p. 65). Consider, however, a physiologist who examines human physiology and concludes that vestigial organs such as the tonsils (or the vermiform appendix) must reveal something fundamental about the world because a world in which 'tonsillar' creatures emerge through the operation of evolution must be a 'tonsillar' world. While it is of course true that the existence of tonsils shows that the world must be such as to permit their evolution, it is not clear that this tells us something *fundamental* about the world.

Although tonsils may once have had some survival value, it is not clear that they any longer have such value—vestigial organs may reveal something about how the world *was* rather than how it *is*. Moreover, the biological account allows for the selection and retention of characteristics which neither

had nor have significant survival value—they may simply be genetically *associated* with other characteristics which were selected naturally for their survival-conduciveness. Finally, the biological account only legitimates claims about the nature of the ecosystem within which the evolution occurred—one must recognize that characteristics which are survival-conducive in one ecosystem may not be such in another.

These considerations indicate that Rescher's argument may need to be restricted to the conclusion that this sector of the universe (or ecosystem) must recently have had characteristics which allowed creatures with the sorts of cognitive capacities and practices which we currently possess to arise and to be selected. It could well be that some atypical or deviant characteristic of the local ecosystem 'protects' (at least for the recent past) creatures of our sort, while the larger universe could be of such a nature that creatures like us would not long survive. Alternatively, it could be that while this sector (or indeed the total universe) had the characteristics mentioned, it has changed and these are no longer its salient characteristics.

In short, even if Rescher's naturalistic and transcendental argument encounters no other problems, it will at most legitimate a significantly weaker conclusion than the one which he wishes to draw. Where Rescher wishes to claim that the evolution of intelligence legitimates claims about the stability, regularity, and structured character of independent reality, the evolutionary model which he appeals to really warrants only claims about the fundamental character of that portion of the independent reality which lead to the currently selected traits and practices—on the assumption that these traits are not merely associated with other traits which were selected for *their* survival-conduciveness, and on the assumption that intelligence is not vestigial.

The transcendental argument which Rescher offers is inadequate for another reason however. As Stephan Korner has persuasively argued in his [1967], a frequent fault of transcendental arguments (one which applies to naturalistic ones no less than to Kantian ones) is that what they actually establish (at most) is that the explanation offered for the phenomena in question is *an* explanation. Usually those offering such arguments wish to establish that the explanation is the *only* (or the only reasonable) explanation. Such uniqueness (or superiority) claims require premises and argument over and above those offered by the usual transcendental argument—one must argue not simply that *an* explanation for the phenomena in question is the preferred explanation, but that *the* explanation of the phenomena in question is the preferred explanation. Rescher does not offer such additional argumentation and, thus, his argument will at most establish that *one* explanation for the emergence, applicability, and efficacy of intelligence is the fact that the world is intelligible. Alternate explanations (chance emergence, divine intervention, Cartesian demons, and so on) are not ruled out simply by an acceptance of a Darwinistic biology.

Indeed, one might note that individuals employ strategies which would not be among those included in Rescher's model of cognitive practice and capacity recommends (strategies which are not part of the scientific world-view)—in fact, Rescher recognizes this when he allows for other purposes besides those he identifies ('who wants poetry written on scientific principles?'). For example, individuals sometimes believe and act 'against all evidence'. At times this is even 'rational'—it is only by trying where one has no reason to believe that one can succeed, that one pulls off the seemingly impossible. One could adopt Rescher's strategy and contend that such a capacity and practice for false optimism (or for such 'leaps of faith') is survival-conducive and, one might continue, the fact that we are creatures who act upon such 'nonrational' strategies shows us something about the fundamental nature of the independent world. Thus, one might contend, we are lead to conclude that the universe is not completely stable, regular, and structured—'nonrational' strategies (or, at least, strategies not part of the generally accepted scientific orientation) can literally *make* things which would not otherwise exist. Here, of course, William James' 'The Will To Believe' (James [1956]) should come to mind. One who argued in this manner might conclude that cognitive Darwinism legitimates the conclusion that the salient characteristics of independent reality are disequilibrium, chance, and possibility.

Rescher could block this line of argument by denying that individuals employ such 'nonrational' strategies. Alternatively, he could claim that the cognitive capacities and strategies which are selected are overwhelmingly of the sort he mentions and, thus, that the weight of evidence is stacked in his favour. Rescher's discussion of our cognitive capacities and practices is highly general, however, and this leads to a further concern about his naturalistic and transcendental argument. Biological arguments regarding the survival-conduciveness of specific capacities hinge upon a detailed examination of the organism and the environment. Attempts to provide such empirical evidence in Rescher's case will fail because presumptions as to the nature of the environment will be illegitimate. Where the Darwinian biologist would *presume* that nature was stable, regular, and structured, and upon this assumption examine the survival-conduciveness of certain traits, Rescher's cognitive Darwinist wishes to employ a Darwinian argument to *establish* that nature is stable, regular, and structured. Thus it appears that Rescher is confusing consequences and presumptions—the naturalistic argument which he would employ must presume that nature is stable, regular, and structured; and given this it will not be legitimate to employ this line of inquiry to validate such a point.

Finally, while Rescher emphasizes the teleological character of our cognitive practices and capacities, his theory may be in danger of floundering at exactly this point. To see this one may begin by recognizing, as Richard Feldman points out in his [1988], that

What people believe is relevant to their survival only to the extent that their beliefs affect their behaviour. Beliefs would have little impact if they did not act on them. Given sufficiently self-destructive desires, false beliefs might be more beneficial than true ones. Thus it seems that certain bundles of attributes—true beliefs, desires for the welfare of oneself and one's species, and appropriate tendencies to act on the basis of these beliefs and desires—may be more conducive to survival than other bundles of attributes.

Feldman argues that naturalistic arguments must consider these 'bundles'—one may not simply concern oneself with the beliefs but must, rather, consider the beliefs, desires, and practices of the individuals.

While Feldman is speaking on the level of theories, Rescher distinguishes 'thesis' Darwinism from 'methodological' Darwinism. Rescher recognizes that it is easy to develop counter-examples to the former orientation (many examples of theses which are not survival-conducive can be produced), but he maintains that this is not the case when one considers broad methodological capacities and practices. Feldman's point may be raised on the methodological level however: the most survival-conducive methodological practices for an intelligent yet self-destructive species might consist of a convoluted network of practices which consistently 'misread' reality and 'frustrate' the self-destructive desires.

Thus, what Rescher has to say about our purposes and desires on the methodological level will be extremely important in evaluating his naturalistic argument. Unfortunately, a crucial equivocation may slip into Rescher's account at this juncture. At times he maintains that our most important cognitive goals are the explanation, prediction, and control of natural phenomena (Rescher [1990], p. 42). At other times he claims that our most important goal is the possession of the truth (Rescher [1990], p. 18). Rescher maintains that while thesis Darwinism encounters a problem as it tries to move from successful explanation, prediction, or control to truth, methodological Darwinism avoids such problems. Thesis Darwinists and Popperians have trouble accounting for scientific progress because their orientations do not adequately establish the truth-conduciveness of the scientific orientation (in his [1977] Rescher makes a similar claim regarding 'thesis pragmatism' and offers a 'methodological pragmatism' which, he contends, avoids this problem). His naturalistic and transcendental argument is intended to explain why it is

... a *rationally based expectation*—not, to be sure, an airtight *guarantee*, but at least a *reasonable assurance* that the scientific route to the solution of our cognitive problems in the factual area offers the best available prospect (Rescher [1990], p. 21).

It is not clear that Rescher's appeal to cognitive Darwinism can bear this weight however. As we have seen, if we take seriously the limitations which

the Darwinian model imposes upon the conclusions which it licenses, we are constrained to admit that the sort of naturalistic transcendental argument which Rescher appeals to will only legitimate claims to the effect that one explanation for the existence of the current cognitive capacities and practices is that this particular area of independent reality had characteristics which led to the differential selection and inheritance of these capacities and practices. Here we do get a 'reasonable assurance' that the scientific methodology is the 'best available prospect', if this means that this methodology is conducive to survival—provided that a comparison with other available capacities and practices establishes that they are not similarly conducive to survival.¹ We can not conclude that it is only to be expected that scientific inquiry will be successful in engendering truths however.

If we presume the Darwinian orientation (which presumes that independent reality is stable, regular, and structured), then the naturalistic and transcendental argument which Rescher develops will legitimate the cognitive Darwinian's claim that a Darwinian explanation of our cognitive capacities and practices provides an explanation of the origin, retention, and efficacy of these capacities and practices. Such an explanation will satisfy the cognitive Darwinian because she asks for a Darwinian account of the development, retention, and efficiency of these capacities and practices within a world presumed to be (at least in the past) stable, regular, and structured. To the extent that these presumptions regarding the characteristics of independent reality are extended toward the future, and to the extent that more viable characteristics do not arise, the cognitive Darwinian may conclude that such capacities and practices will continue to be survival-conducive. To claim more than this (especially to claim that these capacities and practices reveal something fundamental, albeit extremely general, about the fundamental character of independent reality), is to claim much more than the cognitive Darwinist is entitled to claim.

As we have seen the cognitive Darwinist is limited to claims about survival-conduciveness of characteristics and practices in the past (and, perhaps, for the present) in this particular ecosystem. Such claims must bear in mind the possibility that such characteristics and practices might be merely vestigial or might be merely genetically linked to other traits which are survival-conducive. Moreover, these claims at best provide an explanation of the origin and retention of these characteristics and practices. To claim that this

¹ Note that before a Darwinian biologist could conclude that the coloration of a particular butterfly explained its continued survival in a specific ecosystem, she would have to investigate not only its efficacy as a protective device, but would also need to consider whether, for example, the butterfly had evolved some noxious odour which offended its particular predators. In short, the explanation of the superiority of one explanation clearly requires a comparison with other available explanations.

explanation is the best one, or that it is uniquely correct, additional argumentation which considers alternative explanations is requisite.² Ultimately, then, Rescher's account of our useful inheritance is incomplete.³

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² While Rescher does not develop his responses to scepticism and fideism (two of the alternatives which would need to be considered in more detail to sustain his argument) in the work in question, he does respond to these orientations in his [1977] and his [1980]. A thorough appraisal of his cognitive Darwinism must include an examination of these arguments.

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