

human consciousness has a more limited metaphysical importance in Christian theology. Clearly Scripture teaches that we are created in God's image despite its relative silence on these other issues. If consciousness is a natural primitive, an embodied soul, or a ghost in the machine, then our moral place in the universe is still the same. We answer to the Lord Jesus. My concern is not that we will lose our morality, our uniqueness as humans, or our wonder at God's miraculous power, but that we have a clearer appreciation for how we have been created rather than a refusal to give up the "ghost."

Note

¹David Chalmers, *The Conscious Mind: In Search of a Fundamental Theory* (Cambridge, Oxford University Press, 1996).

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Dissimilarity of Theory Testing in Historical and Hard Sciences: A Response to Keith Miller

Recently Keith Miller wrote an interesting article emphasizing similarities between historical sciences, such as geology, astronomy, and evolutionary biology, and "hard" sciences, such as chemistry and physics ("The Similarity of Theory Testing in the Historical and 'Hard' Sciences," *Perspectives on Science and Christian Faith* 54, no. 2 [June 2002]: 119–22). While one can overstate the difference between these two types of sciences, as Miller credibly argues, one can also underestimate that difference. Consideration of Ian Hacking's work on scientific realism suggests that a nontrivial difference between the two types of science exists. Reflection on the doctrine of providence, which has both ordinary and extraordinary aspects, emphasizes the distinction between the two types of sciences.

According to Miller, "[h]istorical sciences are just as predictive, and testable, as the 'hard' sciences" (p. 120). He also argues that the objects of study in the two sorts of sciences are comparable in their degrees of accessibility, because, for example, some physical processes are unobservable, whereas some astronomical processes are observable. Certainly there is some truth in this statement. Before conceding the point to Miller wholly, however, one should recall Ian Hacking's work on experimentation and scientific realism.¹ According to Hacking, when the powers of a theoretical entity (such as the electron once was) become understood well enough that one uses it to construct devices that manipulate other aspects of the physical world, then one must admit that the theoretical entity really exists, as indeed everyone does today in the case of electrons. (Quarks would be a suitable theoretical entity today.) But what can the historical sciences offer as analogs to the electron in this regard? One can hardly use and

manipulate the Cretaceous period, or, for that matter, a historical flood, to achieve some result today. Of course, Hacking's condition is intended to be sufficient, not necessary, for realism about the entity in question. Even so, the inapplicability of his condition to the historical sciences serves to remind us that their objects of study just are not as available to the scientist as are those of the "hard" sciences.

With this reminder in mind, let us recall a relevant aspect of an exemplary doctrine of providence, drawn from the traditional Presbyterian doctrinal standards: "God, in His ordinary providence, maketh use of means, yet is free to work without, above, and against them, at His pleasure."² It is clear that the "hard" sciences pertain to God's ordinary providence, so it would be theologically inappropriate to appeal to special providence to explain, say, the motion of a falling object. Historical sciences, on the other hand, involve both ordinary and special providences, assuming that God has acted in special ways in history. As Christians, we must admit that God has at least occasionally acted in special ways, or, in other words, performed miracles. But if miracles have occasionally occurred, and if historical sciences are aimed at truth (as Miller admits), then on what grounds should historical sciences—or at least those *prima facie* relevant to biblical stories—admit only law-uniform theories, and not also theories positing miracles? But the admission of miracles implies that theories about the past are underdetermined by the data existing today or in the future. How, then, does one choose among the infinity of empirically adequate theories in some historical science? Various criteria might be proposed, but presumably agreement with relevant genuine divine testimony, if any, is one of them. Such a criterion generally does not appear in the "hard" sciences. We are led, then, to see a rather important difference in theory testing between historical sciences and "hard" sciences, *pace* Miller.

Notes

¹I. Hacking, "Experimentation and Scientific Realism," in *Science and the Quest for Reality*, ed. A. I. Tauber, New York University, New York 1997; reprinted from *Scientific Realism*, ed. J. Leplin, University of California, Berkeley 1984.

²*The Westminster Confession of Faith*, ch. 5, section 3.

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