

NANCEY MURPHY'S WORK

by *George F. R. Ellis*

Abstract. Nancy Murphy has been influential in the religion-and-science field through her espousal of the work of Imre Lakatos, more recently developed into a three-tier approach to the joint epistemology of scientific and religious thought incorporating also the ideas of Hempel and MacIntyre. She has proposed a substantial influence of the radical reformed tradition on science and has demonstrated the nature of social influences on the form of Darwinism. She has developed important links between ethics and the science-theology debate and has examined in depth ideas associated with hierarchical structuring, supervenience, and the nature of the soul. Together these form a unique and sharply focused contribution to the understanding of the relation between science and religion.

Keywords: epistemology; ethics; religion and science; supervenience.

Despite her disclaimer as to her scientific knowledge, Nancy Murphy has been directly significant to the *Zygon* enterprise of uniting what was previously disparate, in particular showing that religious wisdom joined with science gives credible expression of basic meaning, values, and moral convictions. Although she has had no formal training in science, she has a very good understanding of scientific issues across the board, from cosmology through quantum theory to evolutionary biology and neuroscience, as well as of the social sciences. She also has a good strategic understanding of what is important and what are critical issues in the religion-and-science debate. Indeed, she has played an important part in helping guide the direction of the Vatican Observatory/Center for Theology and the Natural Sciences series of workshops over the past decade, arguably the most sustained set of recent investigations aimed at moving forward

George F. R. Ellis is Professor of Applied Mathematics at the University of Cape Town, Rondebosch, Cape Town 7700, South Africa.

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understanding in the religion-and-science field in a systematic manner (see the series of books emanating from this project: *Quantum Cosmology and the Laws of Nature* [Russell, Murphy, and Isham 1993], *Chaos and Complexity* [Russell, Murphy, and Peacocke 1995], *Evolution and Molecular Biology* [Russell, Stoeger, and Ayala 1998], and the newest volume on the neurosciences [Russell, Murphy, Meyering, and Arbib 1999]; Murphy is coeditor of three of these four books).

One of Murphy's most important contributions has been in the area of epistemology, where she has been particularly influential through introducing and developing the ideas of Imre Lakatos in the science-religion area through her award-winning book *Theology in the Age of Scientific Reasoning* (1990) and subsequent writings (for example, in her essay in *Quantum Cosmology and the Laws of Nature* [Murphy 1993]). She developed these ideas further into the three-layer epistemological scheme laid out in our joint book *On the Moral Nature of the Universe* (Murphy and Ellis 1996), combining in an impressive single framework the ideas of Hempel (the hypothetico-deductive method), Lakatos (scientific research programs), and MacIntyre (intellectual traditions). This is one of the best-developed responses to the challenge of postmodernism that fully appreciates both the positive features of that viewpoint (see her book *Anglo-American Postmodernity* [1997]) and also the achievements of science. Her concern here has been a unification of the epistemological methods used in religion and science, and she has been very successful with her sophisticated program.

This is a useful contribution to the science side also, for scientists have by and large been reluctant to engage with recent philosophical trends; indeed, they have often treated philosophy with scorn. While there have been some reasons for this attitude, in the end it has been a mistake, because many scientists writing popular pieces about science and meaning have been rather naive in their approach and have not shown much understanding of the deeper issues at stake. What one might comment on here is that Lakatos's ideas have been developed in depth by various people (including Nancey Murphy), with case studies showing how this framework functions in particular historical situations, but the broader perspective provided by MacIntyre's view, and in particular the three-level epistemological scheme as discussed by Nancey Murphy, has hardly been studied at all in this way. It could be interesting to develop this, too, in depth in particular scientific cases, as well as in the broader religion-and-science arena.

One could perhaps regard Nancey Murphy's intention of showing the influence of the radical reform tradition on science as part of such a larger program. This work has indeed been interesting—see, for example, her essay on social influences on Darwinism (Murphy 1999a, pp. 573–600 in this volume). I suggest it might be useful, however, if she were in this discussion to make a distinction between the different kinds of sciences.

The case she makes is strong in the social sciences and has considerable merit in the historical sciences such as evolutionary theory (as she shows in her article), but will likely not get very far in the more mathematical and experimentally based sciences such as theoretical physics and observational astronomy. She might consider this as her program develops. In the case of the “harder” sciences, I suspect that while it is clear that the right social milieu was needed to allow the development to take place, social context probably did not dictate the resultant theory to any significant degree. Rather, the experimental data forced on us counterintuitive views (such as those embodied in relativity theory and quantum theory, implying for example the existence of antiparticles and black holes) that can hardly be explained in terms of social influence. It would be useful to develop the analysis to take these distinctions between the various sciences into account.

A second major stream in Murphy’s work has been her contribution to the fundamentally important interface between ethics and religion considered in the light of modern science. Much of her thought on this is expressed strongly in our joint book (Murphy and Ellis 1996), with scientific input coming from myself and major philosophical and theological contributions from her side. This kind of integrative effort—with aims similar in many ways to those of E. O. Wilson in his book *Consilience* (Wilson 1998) but, dare I say, with better foundation and analytic development—is not popular in many circles, and she has been courageous in undertaking this in the face of the hostility it would generate in some academic circles. The integration developed in this project is strongly in line with the aims put forward by *Zygon*. She developed this work in a carefully controlled and disciplined way, with innovative integration of a wide variety of themes, but with philosophical rigor and with the best current interpretation of epistemology in mind.

This work develops MacIntyre’s view that a core concept of ethics is character development; so a central issue is what kind of character various actions tend to create, rather than simply what the associated intentions or consequences are. Murphy has expressed here her powerful support for a kenotic ethic (that is, an ethic of transforming character, based on generosity and self-sacrifice) and in particular has developed its pacifist implications, which she also knew would be unpopular. Initial indications were given in *On the Moral Nature of the Universe* (Murphy and Ellis 1996) as to how explicit incorporation of this theme into the social sciences might have the capacity to transform them (rather than the present situation where ethics are not explicitly considered, or an unexamined ethic of a different kind is taken for granted and used as a foundation in some social science studies). What would be useful here would be further development of the social science investigations proposed in our book, taking this theme further both theoretically and observationally by investigating in depth the nature and efficacy of kenotic actions and social policy (restorative justice

movements, for example) in realistic social settings. There is also clearly, in view of current public debate, further need to defend the true nature of ethics as normative as well as persuasive. Her work in this direction is helpful, but more is needed in terms of relating to the broader public as well as to academic colleagues who ultimately defend concepts of ethics that do not recognize the core normative nature of morality.

A third important strand in Murphy's work has been her investigations of hierarchical structuring, emergent levels of meaning, and supervenience. She has focused here on a centrally important issue and written provocative and interesting papers around this theme. These topics are central to further issues such as free will and the nature of the soul, as illustrated in her other article in this volume (Murphy 1999b). They also provide the underpinning of the overall worldview she strongly supports, with a branching hierarchy of sciences having separate natural science and human/social science branches at the higher levels, and with theology as the topmost level of both branches, providing both the ultimate metaphysical level of the natural sciences and the ultimate moral level of the social sciences (as described in *On the Moral Nature of the Universe*).

In her present thought in this area, Murphy focuses on the idea of *supervenience* as the key to progress (Murphy 1999b). I agree with her broad approach, and in particular with her strong defense of nonreductive physicalism against causal reductionism and reductive materialism, but in the end I am still open-minded as to whether deploying the concept of supervenience—developed by her in a useful and interesting way—is in fact the magic bullet that solves it all or rather is, in the end, simply relabeling the central issues without solving them. That relabeling may be useful to do in order to get down to the main issues but may not by itself resolve the problem.

There are major technical issues here related to the functioning of hierarchical structures and the higher levels of emergent order that, in my view, still need clarification based on a detailed understanding of the way top-down and bottom-up causation work in such structures (compare the discussions in *Chaos and Complexity*). Most of the current discussion on complexity theory fails to adequately tackle these issues, which are covered to some degree in writing on the computer side by people such as Grady Booch, who is engaged in the investigation of the object-oriented approach to computing (see, for example, Booch 1994), and by the large literature on neural networks, genetic algorithms, and the like. These issues and their implications need further creative investigation that takes fully into account the technicality and complexity of top-down and bottom-up action in multilayer hierarchically structured systems, while also recognizing the importance of developing concepts such as supervenience that will capture some of the essential content but not all the complexity that is covered in these more detailed investigations.

With regard to the fundamentally important related human and religious issues addressed by Nancey Murphy, the first question is whether real free will, in the sense required for moral obligation and ethics to have the requisite normative meaning (again, an issue she has discussed with clarity and weight), can be attained in a hierarchically structured complex system where strictly causal laws attain at the micro level and control by bottom-up action what happens at the macro level. She seems to argue (at least by implication) that this is so, and while her argument is persuasive in many ways, in the end I feel a fundamental sense of unease, a suspicion that the obvious answer—that free will is an illusion in such cases, and hence morality does not exist in this hypothesis except in the reduced sense of a social convention with some biological underpinnings, which is much less than true morality (as she emphasizes effectively)—has been sidestepped without a fully adequate alternative explanation. Further development of her line of thought will be important here.

The second question is one that has exercised her mind for decades, namely, the issue of divine action: How can divine action that is truly meaningful in the theological sense take place in a world governed at the micro level by strictly causal physical laws? Here (rejecting the “chaos” option), she previously took a logically possible but unpopular position, namely, that quantum uncertainty was a crucial key to the “causal joint” that enabled meaningful divine action to take place (see her article in *Chaos and Complexity* [Murphy 1995], supported by the articles there by Thomas Tracey and myself [Tracey 1995; Ellis 1995]). I now get the impression that in the current paper (Murphy 1999b), without explicitly repudiating that previous position, she has in fact drawn back from it in her discussion of religious experiences as categorized by Carolyn Franks Davis. While the discussion of the various categories offered by Franks Davis is clear and helpful, in the end in this paper Nancey Murphy characterizes the religious content of such experiences as being due to the context and interpretation, given ordinary sensory input. The conclusion is, “I want to suggest that religious experiences do not depend on any special faculties over and above ordinary human emotional and cognitive faculties” (Murphy 1999b, 568).

That may be so, but such a conclusion bypasses the issue of why we can believe that a particular religious interpretation is in some sense correct and preferable to other interpretations (such as Dawkins’s and Atkins’s views that religious interpretation is all self-deception). Without some explicit causal joint associated with revelatory experiences, there is no channel of input available to God to make good the actions of the Holy Spirit, the Inner Light, or whatever one likes to characterize such experience as, in the workings of the human mind. It is all internally generated in response to a particular context, and even given the social mediation that takes place, there is no reason to believe the religious interpretation is the one that one

should follow—perhaps to the extent of losing one's life for it—rather than one of the alternative interpretations.

I feel some more clarity is required here. Is Nancy Murphy abandoning her previous strongly held position on the reality of religious experiences as a means of knowing the mind of God? If not, how do these experiences convey meaningful messages or at least “pre-intimations” (Dennis Edwards's phrase, 1983) of the will or wishes of God? Has she moved to a pure natural theology (one knows the mind of God through the actions of the laws of nature alone—there is no channel of revelation apart from nature)? There seems a tension between what she writes in this issue of *Zygon* and what was set forth in her article in *Chaos and Complexity* (Murphy 1995). I suggest further development and explication of what is meant here. Hopefully this will vindicate a reasonably strong position by supporting the religious interpretation given to the whole spectrum of religious experiences.

I have considered here three major themes in Nancy Murphy's thought. The great challenges are in developing further her themes that the religion-science interaction is two-way rather than one-way; that a kenotic ethic is desirable and in some sense practical at a social as well as an individual level; and that nonreductive physicalism is indeed the answer to the worrying questions that arise from current neuroscience investigations of the brain that seriously threaten to undermine our view of ourselves as human. In each case, she has carried out her aim of bringing substantial philosophical resources to the debate and succeeded in throwing new light on the issue, but further elucidation is in order; some suggestions have been made here as to what might be useful in this regard.

In my view, Nancy Murphy is one of the most creative and interesting workers in the field of science and religion today. She has an excellent mind, with a tremendous ability to get to the heart of the matter in a way that cuts through to the core of the issue. She also builds on her considerable philosophical and historical knowledge without compromise on rigor. I look forward to the future development of her program, which is well thought out and constructive in its approach.

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