

On Over-Weighting the Bottom Line

David Baltimore

Most universities are nonprofit institutions and like to think that makes them fundamentally different from profit-making ventures. They are and they aren't. Their goal is not maximizing a bottom line but rather serving the public interest with education and research. But financially, they need to at least break even, which generally requires that they maximize their multiple sources of income. So they are businesses, and when viewed financially, they often are hard to distinguish from profit-making enterprises.

This perspective was, I believe, at the heart of the recent judgment in the case of *Madey v. Duke University*. In that October 2002 decision, a federal appeals court reversed a lower court and held that a university is not generally entitled to an exemption from obtaining licenses to patents that affect its research endeavors. The appeals court found that all of the research activities of a university serve to further its "legitimate business objectives" and therefore are no different than the activities of a for-profit company. The appellate decision explicitly stated that the lower court had "attached too great a weight to the nonprofit, educational status of Duke University." It said, "The correct focus should not be on the nonprofit status of Duke but on the legitimate business Duke is involved in." Just recently, the U.S. Supreme Court refused to hear the case, so the judgment will presumably stand, although the lower court still has to interpret it.

Derek Bok, a former president of Harvard University and previously dean of its law school, provides a similar perspective in *Universities in the Marketplace: The Commercialization of Higher Education*. He focuses on four activities of universities that have significant commercial rationales: competitive athletics, scientific research undertaken to enhance net revenues, technology transfer, and what I will call "non-core education" (continuing education and distance learning). Bok's concern is that the magnitude of these activities either distorts

or threatens the mission of universities. His is a purist stance: anything that distracts from the primary goals—education and research—of a university is suspect. A cynic might say that although that's a fine stance

for the president emeritus of Harvard, lesser institutions are living on a thinner edge. Nonetheless, Bok is speaking for the high vision of the university world, a perspective all institutions should hold dear.

It is hard for universities to keep their financial picture in order. Tuition is one of the few sources of hard money, and for institutions that have a need-blind admissions policy, that source is not constant. Other sources of revenue—such as endowment income, gifts, technology-transfer revenues, and ancillary activities—are inconsistent. With a downturn in the economy, all of these suffer. Running a university to break even is a constant struggle, so Bok's purist stance can be seen as a denial of the realities of university administration.

Bok constantly refers to revenue-enhancing activities over and above tuition increases or attraction of research dollars as making a "profit." Because a nonprofit institution, by definition, makes no profit, this is clearly his attempt to color revenue-enhancing activities with a commercial brush. As I noted above, universities are not uncommercial, but it is important to see their budgets as a whole and not to denigrate particular aspects as "commercial."

Bok's noirest bête is athletics. Here he sees major dangers for the university with little real up side. In his analysis, he draws heavily on the seminal study by James L. Shulman and William G. Bowen, *The Game of Life: College Sports and Educational Values* (Princeton University Press, 2001). Shulman and Bowen document the pernicious effects of athletics in great detail, and Bok reiterates many of the points they make. Their study is clearly the touchstone

of his thinking on the subject, and it colors his view of the other issues he tackles. It is my opinion too that big-time athletics, as practiced both in large universities and small colleges, is a foreign body of professionalism inserted into what should be an amateur environment. And I agree that it is in need of serious rethinking. However, the major uproar from alumni that ensued when Swarthmore College struck football out of its programs shows how hard it is to attack this problem, even at elite, small colleges.

Bok does say that in the realms of research, technology transfer, and non-core education, the universities have generally been more aware of the potential conflicts with their traditional values. He is basically afraid that these areas of revenue enhancement will go the way of athletics, becoming so ingrained into institutional practice that there is no way to govern them within the framework of such values. This is a real worry and one against which the academic world needs to be constantly vigilant. For instance, technology transfer, which admittedly only generates net revenue in a few schools, could become an end in itself for a university and thus lead to external guidance of the research

directions of the faculty. Or the university might lower the bar covering corporate review of research, maximizing corporate funding of research while compromising core university values of openness and access. A particular danger is that marginal research activities and investigators can become overvalued at the expense of more solid investigations.

Bok is quite skeptical of the promise of non-core education (what he calls education for profit) as a revenue generator for major universities. He notes "all the brave talk of rendering residential campuses obsolete seems definitely premature." But he is also worried about how poorly students at major universities are often treated by faculty. He asks the rhetorical but provocative question, "might not competition and the lure of profit be the only forces powerful enough to break through the thick crust of faculty inertia and bring about some real progress in university teaching and learning?"

I have been watching the university scene for more than 40 years and have tried to be alert to universities compromising their core values. I have been impressed that, at least at the major research universities, their revenue-enhancing activities have not seriously dis-

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torted such values. Universities have become more complicated, but the administration, faculty, and students have been aware of the need for vigilance and have exercised it. Not to say that there have not been people taking advantage of the generally permissive atmosphere of universities—that has certainly happened. But it is the exception, not the rule.

Universities in the Marketplace is well written, even eloquent at times. It presents interesting history as well as contemporary analysis. However, the book is short on data and misses the chance to put the issues within the context of the overall picture of university finances. It also does not give a wide view of the diversity of universities and colleges that exist in the United States. I would recommend the book for laying out important issues, but I wish Bok had given them deeper consideration. He has lived with many of these issues at Harvard, notably in the early days of biotechnology, and he could have drawn more on his personal experiences.

The *Madey* decision and Bok's book together remind us that our vaunted higher educational system sits within the same capitalist framework as the rest of American life. It serves a high ideal—the discovery and dissemination of understanding and skill—but it does so facing the same strains as any business striving to stay solvent.

PHILOSOPHY AND BIOLOGY

A Bridgewater Treatise for the 21st Century

Robert T. Pennock

Why do certain features of nature, particularly the complex adaptations of the biological world, seem to call for explanations in terms of purposes? Why is it common to speak of biological objects using functional language, as though they were artifacts? Some have tried to turn such apparent design into an argument for the existence of God. William Paley's watchmaker analogy is probably the most famous example. Though attempts to rationally ground theistic belief are not particularly important for most religions, in some places and periods natural theology took on a special import.

Darwin and Design
Does Evolution Have a Purpose?
by Michael Ruse

Harvard University Press, Cambridge, MA, 2003. 381 pp. \$29.95, £19.95, €29.95. ISBN 0-674-01023-X.

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An early 19th-century expression of this religious argument is found in the Bridgewater Treatises, a series of books endowed by the Reverend Francis Henry, earl of Bridgewater. He set aside £8000 for the project, a sum that translates to about \$650,000 today. The endowment funded selected scholars to show how the wise and benevolent design of God was revealed in the complexities of the natural world. Peter Roget, Secretary of the Royal Society, approached the topic through animal and vegetable physiology. William Whewell wrote on astronomy and physics. William Buckland found Genesis supported in geology. Others saw evidence of God in their own sciences.

Now at the beginning of the 21st century a similar series, though with slightly more ecumenical elbowroom, has been endowed for a comparable figure—\$700,000 for seven books on science and religion—by the Templeton Foundation. Philosopher of science Michael Ruse was one of seven recipients of this award, and his *Darwin and Design* is the happy result.

The book takes as its question: Does evolution have a purpose? One could ask for no better guide for an excursion through the conceptual history of the ideas of design and purpose as they relate to biological adaptation. Ruse has been exploring the back roads of this terrain for most of his career. He has covered much of this material in previous writings, but in *Darwin and Design* he brings all the relevant pieces together and considers them afresh. This has to be the best of Ruse's many books, and it is hard to imagine how a better one could be written on this subject. With an understated erudition spiced with good-natured wit and occasional sly ribaldry, Ruse moves easily and assuredly among biology, philosophy, history, and theology. He misses neither the forest nor the trees, capturing the broad sweep of ideas, and periodically honing in on a telling detail from the personal correspondence of an important historical figure.

This is a lot of territory to cover, and readers with different disciplinary backgrounds may find some chapters rough going. Scientists' eyes may start to glaze at some of the philosophy, as when reading Immanuel Kant's take on design: "Strictly speaking, we do not observe the ends in nature as designed. We only read this conception into the facts as a guide to judgment in its reflection upon the products of nature. Hence these ends are not given to us by the Object." Nonscientists may balk as Ruse marches through the work of Bates, Morgan, Fisher, Ford, Wright, Dobzhansky, Mayr, Simpson, Wynne-Edwards, McDonald,

Reznick, Hamilton, Smith, Lewontin, Trivers, Wilson, Gould, Dawkins, and Kauffman with mention of a couple of dozen lesser-known names along the way. (Thank goodness that the sex lives of Davies's dunnocks enliven things in the middle.) Many will find the fine points of Catholic or Calvinist theology too esoteric for their tastes. However, it is worth following the tale through in its entirety. All these threads serve to fill in a complete picture, and Ruse nicely ties them all together by the end of the book.

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the move to a designing mind. Ruse clearly explains how Darwinian evolution blocked that second move, by providing the answer to the question of biological purpose: "Natural selection produces artifact-like features, not by chance but because if they were not artifact-like they would not work and serve their possessors' needs." The language of intentional design now serves only as a handy metaphor.

Ruse quickly dismisses the recent attempt to resurrect Paley's argument by Intelligent Design creationists such as Phillip Johnson, Michael Behe, and William Dembski; they warrant only a brief discussion in the final chapter. Ruse reviews and extends some of the many arguments that have been given against Behe's "irreducible complexity," Dembski's explanatory filter, and appeals to the purported problems of "complex specified information" and the no-free-lunch theorem. Behe's view, he concludes, is "pure and simple fantasy"; Dembski is "just plain wrong"; and their Intelligent Design movement is already regarded, even by theologians, as an "embarrassment."

We have learned much in the two centuries since Bridgewater, and Ruse shows that natural theology is no longer viable. However, he does not disparage the impulse that led to it. There is indeed awe to be found in biological adaptations, which might be expressed in a new "theology of nature" that "appreciates the complex, adaptive glory of the living world, rejoices in it, and trembles before it." He quotes Mayr, who once told him, "People forget that it is possible to be intensely religious in the entire absence of theological belief."

As the first of what may become known as the Templeton Treatises, Ruse's volume has set a standard that will be tough to match.