

Reviews

Universes. By JOHN LESLIE. London and New York: Routledge, 1989. 228 pages. \$25.00.

Physical Cosmology and Philosophy. Edited by JOHN LESLIE. New York: Macmillan, 1990. 277 pages. \$9.00 (paper).

John Leslie is the philosopher who has most devoted himself to the analysis of recent claims that our universe is fine-tuned for producing life. We already have a massive, difficult, and controversial book on this issue by two physicists (*The Anthropic Principle* [Oxford, 1986], by John D. Barrow and Frank J. Tipler), but Leslie's *Universes* is the first such book by a philosopher. Although Leslie's position is already widely known, since nearly all this material, integrated here into systematic, book-length analysis, has appeared in print earlier, his previous articles were widely scattered or sometimes only exploratory. It is important, therefore, to have the fruit of Leslie's work, across two decades, summarized in one accessible book of manageable length, seriously argued but neither overly technical nor esoteric. In a companion book, *Physical Cosmology and Philosophy*, Leslie has coupled his systematic treatment with an anthology of the principal articles in the field. Thus readers have a double opportunity: systematic treatment and/or anthology. Together, the two books are excellent texts for a stimulating class on cosmology.

In *Universes*, Leslie assembles and appraises an impressive array of physical facts, suggesting that the universe "is spectacularly 'fine tuned' for life" (p. 2). If there is to be life, our universe, born 20 billion years ago in the Big Bang, has to be about the size and age that it is and has to be expanding at the rate that it is. Also, it has to have about the homogeneity and heterogeneity that it has. If the early expansion speed of the universe had been smaller by one part in a million, the universe would have recollapsed rapidly. If the speed had been slightly slower, no galaxies would have formed, and hence no stars. In the stars all the heavier elements, requisite for life, are constructed. Either way, there would have been no life.

Four forces hold everything in the world together and permit all its energetic processes: the weak and the strong nuclear forces, electromagnetism, and gravity. Had the weak nuclear force been even a little stronger, all hydrogen would have turned to helium, and

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the result would have been the absence of water and stable stars to provide the energy for life. For carbon to be created in quantity inside stars, the strong nuclear force could not have deviated from its actual strength by as much as 1 percent. If electromagnetism had been even slightly stronger, the stars would have been too cold to encourage life's evolution and would not have exploded as supernovas—would not have distributed the heavier elements forged within stars, elements that are recollected on the planets and that form life on Earth. Gravity had to be “fine-tuned” because the ratio between gravity and electromagnetism is critical for stellar and galactic evolution. These delicately adjusted binding forces range over forty orders of magnitude. The principal particle masses and charges (neutrons, protons, electrons) have to be what they are, or nothing much could be constructed.

Approximately half of Leslie's book is devoted to evidence of this kind (largely quantitative), most of which has come to light in astrophysics and nuclear physics over the last quarter century. These facts are associated with what is called the *anthropic principle*, the idea that the universe is somehow marvelously right for life. Although the term is unfortunate, since it seems to refer exclusively to humans, the principle involves intelligent life anywhere in the universe and all kinds of life on Earth. Indeed, it involves complex structures of all kinds, not just *anthropos*, or human observers. Brandon Carter, who introduced the term, now regrets the unfortunately anthropocentric implications (*Cosmology*, p. 14; *Universes*, p. 136).

John Polkinghorne's definition of the anthropic principle is helpful: “The collection of scientific insights which indicates that a universe capable of evolving systems as complicated as men must have a delicate balance in the structure of its fundamental forces and (perhaps) special initial conditions” (cited in *Universes*, p. 135).

Two features that make *Universes* so readable are Leslie's fertile imagination and revealing analogies—the fly on the wall (a dart hits the only fly on a large wall, and there are no other flies in the vicinity); the fussy fishing apparatus, which catches only fish exactly 23.2576 inches long (which happens to be the only length of fish in the lake); the firing squad made up of fifty sharpshooters, all of whom miss the person to be executed. Leslie rings all the changes on variations of his parables, an interesting illustration of how argument by analogy can illuminate conclusions reached from mathematical equations.

In *Cosmology*, his anthology, Leslie gathers twenty-one readings (eighteen earlier in print) to assemble both a historical and a contemporary collection. These readings too are surprisingly accessible for

so esoteric a topic and literature. They are often short, but Leslie includes both a general and a specific introduction to each article. Thus, the reader is well oriented.

In an opening article, Ernan McMullin cautiously asks, "Is philosophy relevant to cosmology?" Following his tentative yes, there are readings from George Gamow, W. B. Bonnor, and H. Bondi, articles over a generation old. These materials are now dated (as are others by R. H. Dickie and John A. Wheeler); but the dated materials are important because they caution us that, thirty years hence as thirty years ago, things could look different. They also convey a sense of development; and when, from a later vantage point, we see pioneers in the field mixing seminal insights with mistakes, this can help us find the parallel mixture within ourselves. Perhaps we also learn not to take all the present discussion overseriously.

Martin Rees defends a consensus that the universe emerged, many billions of years ago, from a primordial state of high density, the Big Bang, though Jayant Narlikar registers a minority opinion to the contrary. In one way or another, most of the authors address the remarkable way in which the universe which emerges from that explosion is fine-tuned for life, asking about the philosophical issues this raises.

Adolf Grunbaum demurs. There is nothing here that raises issues for a philosophy of religion. Grunbaum is especially allergic to the word *creation*, which he thinks lurks too near the Creator (possibly as *Lawgiver* lurks near the word *law*). He prefers to speak of *origins*, which has no Originator nearby. Grunbaum is determined to call whatever these origins are "natural" and maintains that when we discover that an event is natural (whether necessary or contingent), explanations are over. To use a word he likes, the problem of creation is a *pseudoproblem*.

Grunbaum is a difficult person to startle. If the universe comes into being in an instant, fine-tuned for life and pregnant with 20 billion years of cosmic history, that's natural. Pseudoproblem it may be, but everyone else sees a real problem here, causing them to posit multiple universes, infinite universes, selection effects, anthropic principles, staggering inflation out of chaos, God, and other explanations to solve the pseudoproblem. Possibly Grunbaum's response is as much a biographical report of his imperturbable, resolute naturalism (maybe even his hostility to theism) as it is an analysis of the logic of cosmology. Meanwhile, we discover a pretty super "natural."

Swinburne thinks oppositely to Grunbaum. Given the fine-tuned universe, there is no reason to think explanations are over, and theism is so obvious a possibility that it should be examined before

we invoke more complicated solutions. Anthropic principles that seek to substitute other explanations (a run of universes, some of which are at random right for life; multiple universes; backward causation, by which later-coming humans cause the earlier universe to have started up as it did) “serve only to obfuscate” (p. 166). The facts of the fine-tuned universe “render the existence of God significantly more probable than not” (p. 172). Nature is not all that self-explanatory, and if one is looking for the simplest set of assumptions about what there is that will give rise to the phenomena we are trying to explain, that assumption is God.

Heinz Pagels joins him, though somewhat cryptically. Pagels dislikes the anthropic principle as “a cozy cosmology” which has no place in strict science; but, religiously speaking, Pagels thinks that “the theistic principle is quite straightforward: the reason the universe seems tailor made for our existence is that it *was* tailor made for our existence; some supreme being created it as a home for intelligent life” (p. 180). Here we should notice that none of the world religions has ever discerned that the world was “cozy.” To the contrary, Buddhists found that the world was unsatisfactory; Christians find grace, but in the midst of a fallen world requiring redemptive suffering.

Another pair of contrasts sets paleontologist Stephen Jay Gould against physicist Freeman Dyson. From the evidence summarized in the anthropic principle, Dyson reaches the conclusion that “the universe in some sense must have known that we were coming”; but Gould pronounces this “raw hope gussied up as rationalized reality” (p. 182). Gould has somewhere learned that he must “always be suspicious of conclusions that reinforce uncritical hope and follow comforting traditions of Western thought” (p. 187). That seems to be how he knows that Dyson is rationalizing, but whether Gould’s own resolution is bias or logic is not examined here.

George Gale posits cosmological fecundity: multiple universes besides our own, perhaps spatially multiple to ours (existing in distant realms), or temporally multiple (existing at other times), or in other dimensions beyond the four we experience, or contemporary universes multiplied as our universe at each moment splits into further universes. Cosmologists do not lack fecundity themselves. They can get not just a particle out of a vacuum fluctuation or a quantum event; they can get a whole universe (Edward P. Tryon’s article). Indeed, they can get not just one universe but an ensemble, an infinity of them, either by more fluctuations or by runaway expansion. The universe is the only free lunch, at which all possible dishes are available (*Cosmology*, p. 199; *Universes*, p. 8). John Wheeler

repeatedly reprocesses the universe (Big Bang, Big Squeeze, Big Bang, Big Squeeze), although he thinks that we cannot have any evidence of universes before or after our own. Mostly what is infinite here seems to be cosmological imagination. That there are other worlds in which Napoleon won Waterloo, and that these have a faint possibility of jostling our world (*Universes*, p. 91), is science fiction, not science. There is no evidence whatsoever for such a claim.

There should have been in the preface a note of caution and perhaps a plea for humility. Any scientist who thinks he or she knows what happened in the first microseconds of the universe, now 20 billion years old, is at least as presumptuous as any theologian who thinks he or she detects a God behind it all. "God" is a modest assumption beside an alternative "theory of everything." Alternatively, it is difficult to tell when we are getting scientific myths or latter-day versions of the creation stories of Genesis 1-3, and when we may be getting latter-day versions of the Tower of Babel story in Genesis 11, with humans storming the gates of Heaven. Cosmology is the logic of the cosmos; philosophy is the love of wisdom. Both are honorable pursuits, always with the Socratic reminder that those are wisest who know their ignorance.

A problem with these readings is that wary readers are left to themselves to form whatever sense they can of what is reasonably well settled (as is the expanding universe and many of the fine-tuned phenomena) and what is sheer speculation (as is our universe splitting into myriads of others at every moment or being reprocessed in 80-billion-year cycles). There is a danger that untested speculation will be too readily believed because of the seeming authority of these experts. When these experts write, it is difficult to tell the difference between well-accepted notions, on which considerable reliance can be placed, and the current and quite provisional research concerns of a particular astrophysicist or cosmologist. Much of this material reads as much like science fiction as like science, but the imaginative part is so commingled with science that one gets lost in the "twilight zones." It all "has an air of magic to it" (Paul Davies, *Cosmology*, p. 231). "Nature's miraculous jar of energy" (p. 231), otherwise called a "vacuum" or even a "false vacuum," is too much like Elijah's miraculous cruse of oil, except that Elijah only got oil from nowhere. Paul Davies gets a universe.

Logicians have long taught us that we need premises adequate for our conclusions; scientists now claim to get a universe out of nothing. Maybe what they really mean is that there is creation after all. The energy pit out of which all comes can look like no-thing from one perspective (as Buddhists have often said), like chaos from another,

and like a divine spirit brooding from still another (as Genesis said). Those who persist in calling everything *nature*, no matter what, might want to spell *nature* with a capital *N*.

The vast numbers of fine-tuned coincidences, the vast improbabilities with which they are said to occur (one chance in “one followed by a thousand billion billion zeroes, at least” [*Universes*, p. 28]), the brief compass in which they are presented, and then foot-noted to some esoteric specialist—from all this one concludes that there is something important here, but often the detail inspires little confidence. Much of this is as speculative as it is fine-tuned. These speculations look like facts, but we (readers) can only take them on faith. Indeed no one, Leslie included, has worked through all these computations.

Leslie concludes *Universes* with a useful chapter on how the design argument looks now, followed by a chapter on God. “It is high time we philosophers took the Design Argument seriously. Whether the evidence of fine-tuning points to multiple universes or to God, it does do some exciting pointing” (p. 198).

Leslie holds that, before the evidence of contemporary physical cosmology, there are two really implausible responses, made by others, and only two plausible responses, which he appraises. The first, least plausible response is to say: Well, that’s just the way nature is. This in effect is Grunbaum’s route. If matter appears out of nothing, that’s natural. Leslie replies that if cherubim or the Koran were suddenly to appear *ex nihilo*, it would not do to accept them as being natural, nor *a fortiori* will it do to accept as just natural a well-designed universe (much more startling than cherubim or a Koran) suddenly appearing from nowhere.

The second response, though superficially plausible, is tricky, and looked at more closely is implausible. One replies that the anthropic result is unsurprising because we already know, before we look, that observers must be in an observer-producing universe. Initially, that seems as though a survivor, after the bomb blast, were to wonder why he or she alone survived and all others were killed, when non-survivors never wonder. But that analogy misleads; it is more like wondering after surviving a firing squad when all fifty executioners miss. “The truth, in itself tautological, that all living beings must be in life-permitting universes, *is interesting* because our universe’s life-permitting nature *does seem to depend on fine-tuning*” (*Universes*, p. 134). We do not know before we look that the life-permitting universe is as fine-tuned as it spectacularly is; so “unsurprising” is an implausible response.

Leslie maintains that there are only two plausible responses: God

or multiple universes (p. 190). “While the Multiple Worlds (or World Ensemble) hypothesis is impressively strong, the God hypothesis is a viable alternative” (p. 1). “My argument has been that the fine-tuning is evidence, genuine evidence, of the following fact: *that God is real, and/or there are many and varied universes*” (p. 198). In some moods he seems almost to adopt the multiple-worlds account. “So my tentative conclusion is that God has no clear advantage over World Ensemble plus Observational Selection” (p. 149). (Leslie delights in nineteenth-century capitals.) Nevertheless, in the end, he opts for the explanation of cosmology in God. “So I need to say why the God hypothesis strikes me as non-silly, and even as every bit as plausible as the many-universes theory” (p. 161).

Is the multiple-universes account plausible, as Leslie thinks? I certainly have no objection to there being other universes. This one is grander than we had thought, and I hope there are others; nothing in theism implies that God has created this one universe only. To the contrary, much in Judeo-Christian theism suggests that one universe would not be enough for such a gracious and creative God. In that sense, God and multiple universes are not mutually exclusive alternatives. One can have both. Just as I welcome the discovery of other forms of life on Earth, and would welcome the discovery of other planets with life, I would welcome the discovery of other universes.

What seems implausible to this reviewer, though plausible to Leslie, is this: Some, almost as though they were driven to seek a naturalistic, godless account, seem determined to disregard the one explanation that stares at us and to invent myriads of other universes, for which we have little or no evidence, to make this one explanation stop staring. They posit enough other universes until this one can be explained as a random universe from a large ensemble. They may plead that this is the simplest explanation, but it is difficult for me to think so. Surely that is to refuse a simple, tidy explanation in favor of a messy, complicated one. Short of considerable evidence for them, many universes cannot be the logically preferred explanation, unless there is something highly illogical about a God hypothesis. You really have to dislike the idea of a Creator behind the creation if you are willing to posit a myriad other creations to avoid such a Creator.

Leslie, when he posits God, means God “as described by the Neoplatonist theological tradition. God is then not an almighty person but an abstract Creative Force which is ‘personal’ through being concerned with creating persons and acting as a benevolent person would. To be more specific, Neoplatonism’s God is *the world’s creative*

ethical requiredness" (p. 2). Leslie wants to make it clear that this "ethical requiredness" is not "a replacement for God": "it itself is God" (*Universes*, p. 167). It helped me to think of this as a fundamental axiom of the generation and conservation of value: If you find values in the world, and a Universe-system of great value startlingly arranged to project these values, the simplest explanation is to detect a requirement for Value behind the creation.

I did not find it clear why, from among the many forms of theism, Neoplatonism is the best fit for the anthropic principle. Leslie seems uncomfortable with the personalism in most classical theism; and there is an understandable tendency for cosmologists, lost in the vast reaches of space, time, and energy, to opt for creative forces over a personal God. On the other hand, if one is looking for a primal cause adequate to the creative effect, it is, after all, conscious and intelligent beings, "observers," who have been so remarkably produced by this fine-tuned universe, and if one wants a premise adequate for this conclusion, the logic seems to need "observer" qualities as much as "Creative Force" in the character of this God. I agree with Leslie that we may not have to posit a Valuer everywhere that we find value; on the other hand, the Ground of all values need not be denied the highest kind of value (conscious experience) that we have reached.

Leslie's *Universes* is written with a good deal of philosophical courage and much originality, virtues rather rare in contemporary philosophy.

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The Biology of Moral Systems. By RICHARD D. ALEXANDER. New York: Aldine De Gruyter, 1987. 301 pages. \$18.95 (paper).

This book, which presents a theory of the evolution of morality, is built on the assumption that human behavioral predispositions, including those giving rise to morality, are products of natural selection that favor individual maximization of inclusive fitness.

The first chapter reviews basic biological theory, which forms a background to the theory of morality, and in many ways is a review of Alexander's earlier book, *Darwinism and Human Affairs*. A number

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of basic points of evolutionary theory are explained and discussed; two are most important, for purposes of understanding morality: the ideas that (1) human interests are reproductive in character and (2) that individuals' interests are necessarily in conflict. Conflict is inevitable because human beings evolved to strive for the reproduction of their own genes and because no two individuals are genetically identical (identical twins aside). However, owing to kinship or potential reciprocal altruism, interests can also be shared. Thus human beings evolved to deal with both conflicts and confluences of interests. Also of basic significance is Alexander's theory that human beings evolved to be deceptive about the self-interested nature of their strivings and to appear more altruistic than they really are. Further, they evolved a propensity to deceive themselves so as better to deceive others. Thus the self-interested nature of our behavior tends to be hidden even from ourselves.

Chapter 2 presents the theory itself, whose gist is as follows. The primary threat to survival and eventual reproductive success for individuals in evolving human populations was between-group competition, and the greatest success in this competition fell to those who were most successful either in acquiring allies or in associating themselves with larger and better-united groups. One way of accomplishing this was indirect reciprocity. In a system of direct reciprocity, A helps B with the expectation that B will respond by helping A. In a system of indirect reciprocity, A helps B with the expectation that C or other third parties who observe A's beneficence will respond by helping A. Moral systems, which according to Alexander's theory are systems of indirect reciprocity, have the effect of diminishing the destructive impact of within-group conflict and thereby allowing the formation of larger and better-unified groups to deal more effectively with between-group competition.

Indirect reciprocity arises when individuals are able to observe the behavior of others in a wide range of social interactions. They can then choose as allies those who have consistently demonstrated a propensity to behave in ways which are beneficent to others. In other words, they can choose allies on the basis of reputation. Once this situation arises, it is advantageous for an individual to build a good reputation. Behaving in a helpful way toward another not only increases the chance that the individual who has been helped will reciprocate (direct reciprocity) but increases the chance that third parties who observe the beneficent behavior will seek one out as an ally or be helpful in some other way (indirect reciprocity). Thus helpful acts toward others become a means of reputation building, which is in turn a means of gaining assistance and cementing

alliances with individuals other than the ones helped. Here, also, the evolved propensity to deceive sometimes plays a role. People are helpful to others, but they also, at times, try to appear more helpful than they really are, and under some conditions they deceive themselves into believing they *are* more helpful than they really are.

The human psyche has evolved to guide the individual through the complexity of a system of indirect reciprocity. Among the features of the psyche evolved for this purpose are a self-image, a sense of self-interest, and a conscience. Human beings tend to develop a self-image that guides their behavior. This self-image commonly entails obeying the rules of one's community and in general displaying the qualities that make one a valuable ally in one's society. Humans also tend to develop a sense of self-interest, to help them gain the alliances they need at the lowest cost to themselves, and a conscience that tells them how far they can go in the pursuit of self-interest without damaging their reputation (and self-image).

Alexander sees his theory as in agreement with the view that moral systems are contractual, an idea associated primarily with Rawls. The exact nature of moral rules is not important to members of a society as long as the rules are successful in preventing others from thwarting them in the pursuit of their interests. Different sets of rules may be equally successful at this. Systems of moral rules are established through processes of debate, compromise, and agreement and are part of the history of every society.

In addition to explaining the theory, the second chapter covers some closely related topics. There is a detailed discussion of the many routes by which organisms can gather and expend resources for reproduction, mating effort, parental effort, and so forth. These strivings can be pursued in a number of ways. For example, one can gather resources to consume in order to grow or enhance one's own survival; this is labeled *direct somatic effort*. One can also give resources or aid to someone else, expecting reciprocation in resources that will help one's own growth and survival; this is labeled *indirect somatic effort*. Or one can give aid to someone else expecting the beneficiary to respond with aid to one's children; this is labeled *indirect parental effort*. These various types of strivings are classified in an elaborate scheme under the heading "Atoms of Sociality." There is also a very interesting examination of Kohlberg's theory of the development of moral judgment in the light of Alexander's theory. In many ways, chapter 2 is the core of the book.

Chapter 3 compares Alexander's theory to earlier discussions of morality by philosophers and biologists. Most earlier works on morality have not seen human interests as ultimately both reproduc-

tive and inherently in conflict. Also, most earlier theories, in contrast to Alexander's, do not see moral behavior as ultimately self-serving. Chapter 4 explores implications of the author's theory for issues such as abortion, the rights of the moribund and comatose, and the arms race. New insights are suggested, based on the assumption that conflicts of interest lie behind such debates about moral issues and that these interests are generally obscured by the propensity of human beings to deceive themselves about the self-interested nature of their strivings. The final chapter reviews the central points of the book.

Alexander's is a theory about the selective advantage that caused morality to evolve in the human species. It is not a theory about exactly what form moral rules should assume. Since moral systems are contractual in character, they can assume different forms, and the theoretician cannot predict in advance exactly what rules a society will come to accept. Thus the theory does not in any simple and direct way tell us how particular moral dilemmas should be resolved. On the other hand, if it is generally recognized that individual interests play a crucial role in debates about moral issues, it may be possible to discuss these underlying interests more openly. This, in turn, might make it easier to resolve such issues in ways that are acceptable to a larger number of people. Such a benefit, however, would have to come sometime in the future, when the majority of people are willing to accept the idea that moral rules are ways of resolving conflicts of individual interests.

The issues raised by the arms race are especially problematic when seen from the point of view of Alexander's theory. The survival of our species is in jeopardy if we cannot find a peaceful way to resolve disputes among our largest social groups: nations. However, if moral systems evolved to unite groups for purposes of competition with other groups, it will be difficult to unite the species as a whole, which is what peaceful resolution of international conflict calls for.

Alexander's book is a thought-provoking exposition of a very exciting theory. It opens many avenues for further debate. For example, how can moral systems be seen as contractual when there are, in most societies, wide disparities of power and the propensity of the powerful to devise rules that suit their interests at the expense of the less powerful? How can the coercive element be reconciled with the idea that moral rules are contractual? Another question, of course, is, How do we evaluate this theory? Alexander's previous work on human sociality has always emphasized testable predictions which can be used for theory evaluation. However, this is less true of this book, and it is not easy to see how testable predictions can be

derived from this theory. Ingenuity on the part of future researchers will be necessary.

The book is not easy reading. Alexander is more concerned with explaining thoroughly and precisely all the complex issues involved than with producing a readable text. The reader needs to work his or her way through the book slowly, with many pauses for reflection and digestion of abstract statements, but it is well worth the effort. There are enough new ideas in this book for several books.

Nor is it a book that evokes primarily pleasant images. Human beings are seen as self-interested and deceptive by nature, and morality is seen as a tool for between-group competition. However, the fact that the theory paints an unpleasant picture does not make it wrong or diminish its usefulness as a potential explanation of morality. Every scholar and scientist who is interested in morality and is willing to explore the idea that morality is a product of evolution should read this book.

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An Interpretation of Religion: Human Responses to the Transcendent. By JOHN HICK. New Haven and London: Yale Univ. Press, 1989. 412 pages + xvi. \$35.00.

Professor Hick's Gifford Lectures, published here in an expanded version, present a systematic interpretation of the phenomenon of religion that gathers all the key elements of his previous writings and arranges them into a picture of religious pluralism. It is fascinating to see how the earlier elements, worked out before Hick's well-known turn from a confessional Christian to a pluralist perspective, are woven into the final theory.

The linchpin of Hick's theory of religion is the pluralist hypothesis itself—the suggestion, that is, that all the great world faiths represent valid, culturally mediated responses to pressure on human consciousness and the life of transcendent ultimate reality. The main religious traditions of world history are deemed equally valid in two senses: they reflect and convey genuine aspects of the ultimate, and they have the potentiality of transforming adherents from egocentric to

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reality-centered lives, in both individual and communal ways.

The five main parts of the book are organized around this hypothesis. Part one ("Phenomenological") is a broad picture of the soteriological priorities of all the great world faiths and their ultimate cosmic optimism. Part two ("The Religious Ambiguity of the Universe") sums up Hick's antifoundationalist rejection of natural theology. The theistic arguments, though inconclusive, show the rationality of theism as an interpretation of reality. Equally, Hick's well-known theodicy is held to show that the fact of evil is not a conclusive disproof of theism. This rationally irresolvable ambiguity is in fact required by Hick's understanding of faith as the interpretive element in religious experience. This is the subject matter of part three ("Epistemological"), which contains a robust refutation of nonrealist approaches to the analysis of religion and, at the same time, a basically Kantian exposition of the inaccessibility of the noumenal Real as it is in itself. Only its "phenomenal" appearances, filtered by the interpretive schemata of particular religious traditions, are available to religious experience. Hick's concept of "eschatological verification," originally developed as a way of showing the meaningfulness of Christian God-talk, is at this point redeployed to suggest the possibility of a variety of postmortem verifying experiences that will put religious cognition beyond all doubt.

This leads naturally to the development of Hick's hypothesis of religious pluralism in part four, for the Kantian distinction between noumenon and phenomena allows Hick to suppose that ultimate reality—the Real—is manifested in different ways through the great traditions of world religion. Theistic religions convey the ultimate in and through "personae" of the Real, such as Krishna or Yahweh; nontheistic religions convey the ultimate through "impersonae" of the Real, such as Brahma or Sunyata. The notion of unmediated, mystical experience of the Real is rejected on the grounds that mystics within the different traditions still bring their culturally specific concepts to their various kinds of unitive experience.

Part five ("Criteriological") returns to soteriology, for it is soteriological effectiveness that might enable us to grade religions and express preferences. However, Hick argues that, from an empirical point of view, all the great religions produce both sanctity in individuals and communal liberation (although different faiths are at different stages in the latter task). The problem of conflicting truth-claims in religion is resolved by regarding different doctrines as complementary myths, equally productive of soteriological efficacy in human life.

There is no doubt that this interpretation of religion will prove extremely attractive to many people in an increasingly interrelated world community, for it seems counterintuitive that only a single strand of the world's religions is salvifically efficacious for human beings whose participation in that strand is, for the most part, contingent upon where they were born. Hick has developed a way out of this dilemma that has, at first sight, considerable plausibility from the metaphysical, epistemological, and theological points of view, as well as from the all-important practical religious point of view.

Let us, however, examine the five main parts of Hick's argument more closely. Hick's recognition that what he calls "post-axial" religion—the great world faiths—are to be distinguished from archaic religions by their concern with transformation of the human condition and by their ultimate cosmic optimism may be acknowledged as basically sound. Of course transformation, whether spoken of as salvation or liberation, is a pretty vague concept. These are umbrella terms for very diverse diagnoses and purported remedies, and whether they can all be assimilated or regarded as complementary is the subject of detailed analyses in parts four and five. Similarly, "cosmic optimism" covers a multitude of views, some more dynamically and eschatologically oriented than others. Hick makes a valiant effort to see such hope for the future in Oriental traditions (commonly contrasted with those of Semitic origin). But again, we may suspect that his judgment depends on the vagueness of his concepts. One thing is clear and persuasive, however. Hick is surely right to insist that the great world faiths are not just ways of life. The transformations they promise and enable are integral with their conceptions of the universe and its destiny. There are truth-claims in religion that cannot be ignored.

The second part of the book should be extremely interesting to philosophers of religion caught up in the foundationalism/antifoundationalism debate. Foundationalists argue that a good case can be made for a religious worldview (usually a theistic one) in Indian and Western contexts. The case may not be conclusive, but the arguments of natural theology are held to carry such weight as to incline the inquirer toward belief. Antifoundationalists, such as Hick, argue that religious *and* nonreligious views of the world are equally possible and plausible options, since the universe is immutably ambiguous.

Hick has much of interest to say about the rationality of religious belief, and he makes a good case that the challenge of evil to theism is not a decisive argument against belief in God; but the antifoundationalist stance is controversial on at least three counts. First, the view that faith *requires* the world's irresolvable ambiguity may be

questioned. Some ambiguity seems a necessary condition of a free and responsible faith commitment; but a probabilistic argument does not compel belief, still less trust. Second, the view that irresolvable ambiguity is necessary tends to lead to prejudice or carelessness in natural theology. There is more to be said on this score than Hick allows, as Swinburne and Mitchell (among others) have shown. Third, there is something fishy about the view that, though theistic arguments carry no persuasive conviction, they demonstrate the possibility of a theistic interpretation. For the internal rationality of theism surely contributes to its persuasive power.

A fourth point may be added. The theory of irreducible ambiguity, first worked out by Hick in his antifoundationalist interpretation of Christian faith, is now deployed in a pluralist context. A whole range of religious views are allowed their own rationality—but no persuasive power across either their mutual borders or the border between belief and unbelief. The internal rationality of theism is now held to have no more persuasive power *vis-à-vis* impersonal monism than *vis-à-vis* naturalism. This is doubly implausible and really plays fast and loose with reason and cognition alike.

This leads us to part three and Hick's epistemology, which also was developed before Hick's pluralist turn. Its Kantian, even idealist, elements lend themselves readily to the new multifaith context, for all religious worldviews can be construed as cognitive templates through which basic religious experiences are given shape and form. So much is now held to be contributed by the communally formed religious mind that the religious object—the ultimate or Real, whose presence and pressure at the heart of things gives rise to the religious responses of mankind—recedes into unknowability apart from its experienced, transformative power. Indeed, it is such a religious experience, in nearly all cases construed as experience of a reality greater than can be conceived, that still makes Hick an opponent of the even more radical antirealist interpretations of religion currently on offer (such as those of Don Cupitt). Whether this appeal to experience, unsupported by reason or revelation, can bear the weight of Hick's apologetic against antirealism is one of the chief objections to his enterprise.

Part four's defense of religious pluralism is crucial to our assessment of Hick's interpretation of religion. Here the Kantian epistemology—the positing of a basic but unknown noumenon behind the culturally shaped phenomena of the different religions—is applied to the most fundamental divergence in the history of religions between faiths that think and experience the Real as personal and faiths that think and experience the Real as impersonal. Those of us who believe

that ultimate reality has been disclosed or revealed as personal will be very unwilling to concede that the God of theistic faiths is only one (or more) phenomenal manifestation(s) of an ultimate reality, beyond both personality and impersonality, that manifests itself (themselves) in other traditions as impersonal. This difficulty points to the basic flaw in Hick's position: the interpretation of personal and impersonal religious faiths as equally valid responses to an unknown Real cannot possibly stand as a theory about the history of religions. It can only be a new worldview, acceptable to neither a Christian nor Theravada Buddhist faith, competing with them and with older faiths for the allegiance of human beings in the modern age.

The Kantian epistemology, which permits advancement of this new hypothesis, can and must be challenged. Culturally conditioned concepts are not just contributions to a preparation for consciousness of inherently unknowable data. This is no more acceptable in religion than in science or sense experience. Human concepts may be limited and partial, but they are fashioned in and through the pressure of reality upon the knowing mind. We learn, by experience and reflection, that the world about us possesses real qualities, which our concepts try to capture. In science, this understanding of the world is refined, corrected, and enlarged through a contrived interaction with the constituents of the world. We learn, from religious experience, revelation, and rational thought, that this human-producing world is the creation of a mind and heart of love that has entered our condition to make Himself known and to rescue us from our predicament. No more in the religious case than in the scientific or the everyday case can reflection on the realities with which we have to do be relegated to the status of myth.

That myth is the status of all purported religious cognition is clear from part five of Hick's book, where the sole criterion is again declared to be soteriological efficacy, spelled out in terms of sanctity of life and ethical goodness. Hick's verdict that all world faiths pass these tests and cannot be graded empirically is controversial. A number of devices (comparable to Ptolemaic epicycles!) are called upon to sustain this bold generalization, such as allowance for the fact that different religions are at different stages of historical development. Genuine comparison becomes impossible when such devices are used to explain away differences, say, in social ethical concern.

Although the "practical" is primary in Hick's criteriology, the theoretical bent of much of his work in the philosophy of religion also becomes open to question. If conflicting truth-claims among religions are to be resolved by treating them as complementary myths, equally productive of sanctity and goodness, what is the point of

Hick's defense of realism in religion, his arguments for the rationality of theism, his theodicy, and his stress on eschatological verification? If the Real behind all religious phenomena is unknowable or vague, what difference of any substance remains between Hick, the purported realist in religion, and Cupitt, the antirealist? If he is serious about eschatology, can Hick maintain that all religious expectations will be met in the hereafter, or that different expectations do not matter where the guidance of life and the inspiration of sanctity are concerned? Similarly, do not differences in purported revelation—say, the character of Jesus Christ—make a difference for the kind of sanctity and action evoked?

The more one ponders this apparently plausible and attractive interpretation of religion, the less persuasive it becomes. Hick's theory does not do justice to the place of either reason or revelation in religion. It does not reckon with the actual beliefs of men and women in the historical traditions of faith. It does not attend to the differences made by the claimed disclosures, in history and teaching; and it fails to present a plausible, unitary account of the destiny of all creation.

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