

Book Review

J.P. Wesley, *Selected Topics in Scientific Physics* (Benjamin Wesley, Weiherdammstrasse 24, 78176 Blumberg, Germany, 2002), ISBN 3-9800942-9-4, 402 pp. + XXVI, 35 figures, 219 references, US\$50.

J.P. Wesley is one of the gems of our age. He is the very model of an independent thinker — the man who wears no man's collar. Physics has always had its dissidents — among them the numerous contemporary dissenters from the worldwide Grand Unified Consensus of Academic Authority enforcing the standard theory, the big bang, the expanding universe, the theories of relativity, cosmic inflation, quantum measurement, etc. But, of the dissidents alive today, James Paul Wesley is unquestionably the patron saint. At his present age of 82, and going strong, he still adds volumes to the roster of his printed works, which include such merciless assaults upon orthodoxy as *Causal Quantum Theory*, *Progress in Space-Time Physics*, *Classical Quantum Theory*, *Foundations of Mathematics and Physics* (edited with U. Bartocci), *Ecophysics*, and *Selected Topics in Advanced Fundamental Physics*. Now comes *Selected Topics in Scientific Physics*, a capstone summarizing and recapitulating many of his previous heresies.

Wesley has chosen the term “scientific” physics in his title to distinguish his work from the “irrational” physics of the Establishment. This may be putting it a bit strongly, since the “accepted” theories mentioned above seem to this observer almost top-heavy with *rational* deductions from dubious premises. They appear to demonstrate how far off the main line a train can run that starts down a weed-choked siding on rusty rails of logic. Combine false premises with relentless logic and a compulsion to “agree with observation,” and (ta da!) there you have Ptolemaic physics — a tissue of philosophically correct ad hoc-ery loosely pinned together with adjustable coupling constants. Such is the standard theory, whose touted *success* (like that of its medieval prototype in the history of planetary dynamics) stands squarely — for another thousand years of academic medievalism? — in the way of understanding or even formulating nuclear dynamics.

Still, there is no denying that Wesley has a point in characterizing important aspects of what we now call physics as irrational. Many serious theoretical physicists seem to have yielded to the temptation to play guru in respect to the early minutes of “creation,” or

even to create their own “many universes.” The thought that physicists can now outdo God by many-to-one, or trespass on the ontological preserves of religion, seems to have gone to their heads. They overlook the fact that what lies beneath their sky-hyped outpouring of exciting new insights is not any real success in describing nature, but the desperation that hides failure behind a smokescreen of frenetic imagination and deep mathematics. For there exists as yet no decent theory of nuclear forces — and from that fundamental, gross, and bitter failure springs the profession's need for the great “China Wall” of camouflage that passes today for fundamental physics.

The diverse topics covered in Wesley's book include evidence for absolute space, cosmology in a nonexpanding space, his own version of gravity theory, electrodynamics, induction, the Ampère force law, neomechanics (Wesley's high-speed particle mechanics), thermodynamic ordering, ecological physics, causal quantum physics, and Wesley's cogitations on such philosophical and sociological questions as, Has scientific physics a future? How do irrational physics beliefs become accepted and perpetuated? On all these topics he has original and significant thoughts to offer. This is not to say that I agree with all of them. But his arguments are challenging, well informed, and closely reasoned. I found myself cheering for much of what he has to say. But, of course, being a dissident myself, I could not agree with everything — since it is the inherent nature of scientific dissidence that it is born and dwells (and dies) in the individual human spirit, not in the *Zeitgeist*, and thus can draw no strength from consensus. In this it differs from political dissidence, which is just a politics of minority consensus.

Many of his topics will be of interest primarily to specialists, but his application of thermodynamics to ecology should be of fairly general interest. I am not qualified to judge, but it appears to me that Wesley has practically single-handedly founded a new field of science that he calls *ecophysics*, addressed to explaining and analyzing the remarkable local decreases of entropy manifested by the emergence of life forms into a lifeless universe. “Heterotrophes,” he tells us, “have evolved to serve autotrophes.” (He is not strong on defining terms, and I won't try to do better here.) Population and territoriality are typical subtopics. Specialists in such subtopics may find his views too simplified, and others may feel that he goes too far,

e.g., in exorcising religion. I, on the contrary, feel that he may not have gone far enough toward recognizing the role of primitive religions in fostering the genocidal “wars of the tribes,” with their delicate balance of ingroup love and outgroup hatred — leading to that persistent same-species predation that generated fierce selective pressures favoring growth of surplus brain size in one subspecies of the great apes. Other predator species adaptively honed themselves against their prey species; *homo erectus* honed itself against its own species, thereby becoming *homo sapiens*.

In reviewing a book of such broad scope it is necessary to make choices. I can merely give personal impressions, weighted by my own biases. The evidence Wesley adduces for absolute space is persuasive but, to me, far from conclusive. I was never attracted to absolute ether theories, and “a man convinced against his will is of the same opinion still.” (Underlying it all, there certainly must be a physical ether, and that ether will become a suitable subject of future physics — but I question that it will define an absolute state of motion and opine that it will be restless, nowhere “at rest.”) However, I agree heartily with his arguments against universal expansion as the explanation of the observed astronomical redshift, and against the putative big bang. There are aspects of the latter theory (such as inflation) that are too silly for the nonexpert to swallow. Although I do not know what “infinite” space means, I agree with Wesley that some form of steady-state universe looks like the best bet. Concerning cosmology in general, however, these are early days. A prudent scientist would wait for the basic physics to be developed before venturing into such an extrapolator’s paradise. Thinking about cosmology before understanding the proton is like setting out to build an internal combustion engine before discovery of the wheel. If they want to reconstruct astronomy, physicists and mathematicians should go away for a couple of thousand years and return with better materials for the job. I would say “return with humility,” but we’re talking scientists here.

What Wesley has to say about electrodynamics, induction, and the Ampère force law I thoroughly second. This cannot be said too often — the closure of Establishment minds on these topics being one of the scandals of the age. Concerning “Wesley gravitation,” however, I am less enthusiastic. To me, it seems too Einstein-like in that it adopts the Einstein assumption of speed- c retardation of all distant actions. That as-

sumption may be true, but it ain’t necessarily so. Neomechanics is “relativistic” mechanics without space-time symmetry. I like this and agree with it for the most part. Wesley’s treatment of thermodynamics rests on his “primary law for thermodynamic ordering processes,” namely, “Statistical thermodynamic systems maintained at an absolute temperature T open to a cold sink at an absolute temperature $T_0 < T$ proceed toward states of lower entropy or greater thermodynamic order.” If this sounds exactly backward, read what he has to say. I think you may find yourself compelled toward his view. Wesley’s prose makes little attempt at persuasion; it is so didactic that one can agree with it only against one’s will — but give it a try. Although you will probably emerge “of the same opinion still,” it will leave you — unlike a 007 martini — shaken, if not stirred.

Although I cannot endorse Wesley’s attempt to return quantum physics to its classical “trajectory” origins, I also cannot agree with him more when he attacks that amorphous nonesuch known as *quantum measurement theory*. This is the black lagoon that breeds such monsters as the “many-worlds interpretation.” The fact that one can still today find savants trying to domesticate this nightmare-creature tells everything that the layperson needs to know about the fundamentals of quantum mechanics (QM): They are a mess — of the sort that only an expert could love. My own prejudice is the exact opposite of Wesley’s: Rather than turning the clock back to solve the problems of quantum description, I interpret the restricted but real successes of QM as a warning sign putting our species on notice that the limits of our environmentally conditioned intuition have already been reached at the atomic borderland — and that to progress beyond that into the nuclear domain we shall have to become “more quantum” in our thinking, not less.

Should you buy this book? Well ... the page gluing is none too durable, so if you read the book more than once it will become a basket case. But, compared, for example, with Kluwer publications, the price is definitely right; and if challenging new physics ideas per dollar is a figure of merit you will find no better way to spend your money. (The contribution of Michael H. Brill to the preparation of this review is gratefully acknowledged.)

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Dr. Phipps studied physics at Harvard University as an undergraduate and as a doctoral student under Prof. Norman Ramsey, for whom he wrote a molecular beam experimental thesis. His subsequent work for the U.S. Navy included various forms of operations research (system analysis) and research administration. Upon retirement he has turned his interests once more to experimental physics, primarily in the area of electromagnetism, and to conceptual problems such as alternative relativity theories. [A more complete résumé appears in *Phys. Essays* **8**, 274 (1995).]