



dinosaurs, radical theories of “the end times” are prevalent, even among some members of Congress. America is becoming “Southernized,” Phillips argues. By that he means fundamentalist worldviews are influencing public policy. The Republican Party is already a “church” in Texas (their 2006 platform explicitly rejects church-state separation), and a theocratic country is one of the many possibilities Phillips sees looming on the horizon. Using the word “evangelical” as synonymous with “fundamentalist,” he writes that evangelicals believe that the “world is at most ten thousand years old ... In considering stem-cell research ... depleting oil or melting ice caps ... (they) have at best limited openness to any national secular dialog” (pp. 66–7).

Part III, 120 pages long, is the most frightening. We may yet solve the energy problem (not without severe dislocations) and the fundamentalists will probably split ranks, for fighting with one another has been their history. But Phillips sees no solutions to the US’s soaring debt; he speaks to history’s “unlearned lessons,” and sees doom and gloom in the future—the near future. Every year foreign bond and stockholders own more of our country. There will come (there has to come) a tipping point. Today, America dominates the world. We do so on the backs of those who came before us; we are squandering our inheritance. It is only a matter of time until catastrophe arrives. The rich become richer while the poor get poorer and the middle erodes. There is no happy ending.

On page 315, discussing the erosion of America’s manufacturing capability, he quotes Randall Isaac, former vice president of IBM Technology and current ASA executive director: “You cannot do effective R&D if you do not have the manufacturing to insure that the R&D is actually relevant. If the United States loses its manufacturing lead, it will lose everything else with it.” I do not recommend this book for light reading—only for serious study.

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pretelomeric sequences as well as inversion sites, where for example instead of 5’ (TTAGGG) it switches to 3’ (CCCTAA), which is what you would expect in the fusion of two telomeres. A relevant citation is:

J. W. Ijdo, A Baldini, D. C. Ward, S. T. Reeders, and R. A. Wells, “Origin of Human Chromosome 2: An Ancestral Telomere-Telomere Fusion,” *Proceedings of the National Academy of Sciences USA* 88, no. 20 (1991 Oct 15): 9051–5.

As for the question of genomic differences between humans and chimpanzees, reports provide differences, ranging from 1.2% to 6% and everywhere in between. This number changes depending on what you are looking for, be it single-base measurements, coding region sequencing, inclusion or exclusion of gene duplications and deletions, etc. Regardless, at a minimum, the difference between the human and chimpanzee genome is at least 1.2%, not 0.012%.

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Life and Energy Are Siblings Entities

Jerry Bergman’s article (*PSCF* 58, no. 4 [2006]: 303–9) on “The American Scientific Affiliation Booklet Controversy” is most revealing, amazingly timely, and tells us that when the ASA leadership approached the nation’s science teachers they really hit the nerve of spokespersons for the atheistic regime. It is time to remind these teachers that we appreciate their efforts to convey the miracles and mysteries of what it is that tells us a newborn will breathe, a grain of wheat will germinate, a dog will return our affection, a stem cell will show differentiation, and all such events that require the presence of the life entity.

There are other good reasons for giving biology teachers a leg up. The courses they teach are generally required and thus may be the final chance to produce a citizenry that has the ability and is inclined to rely on the logic and methods of science when facing problems and making decisions. In this, today’s teachers face intense competition from interests who can afford the services of experts in influencing what people believe and how they arrive at their decisions. It is little wonder that these experts find ways to put down the teaching profession and thereby deny teachers the respect, guidance, and support that this nation provided so abundantly during the first half of the previous century.

It is time to help the teachers of the life sciences to enjoy the success of their compatriots in the physical sciences. Their subject matter is similar. In the physical sciences, the focus is on the properties of the energy entity and the role of these properties in the inanimate world. In the life sciences, the focus is on the properties of the life entity and their role in the animate world. Actually, both life and energy are so similar as to suggest they are sibling entities. Both entities propagate themselves as far as possible in every direction.

Neither entity can be experienced absent interaction with some form of matter. Neither entity can be destroyed and it is equally probable that neither can be created anew.



Author Corrects the “Science or Science” Article

I thank an astute reader for pointing out two errors in my article, “Science or Science: The Question of Intelligent Design Theory” (*PSCF* 58, no. 3 [Sept 2006]: 226–34), on p. 233, second column, first full paragraph.

I meant to say that humans have one LESS chromosome than other primates, not the other way around. The general reasoning is still correct, however. If you karyotype their chromosomes and arrange them next to one another as in the picture below, you’ll notice a strikingly similar banding pattern between human chromosome 2 and two primate homologs. You may notice the remnants of a second centromere in the G-banding pattern of the human chromosome corresponding to the centromere of one of the primate chromosomes. There is also evidence of

And there are special satisfactions in looking upon both entities as being infinite in time and space. For biology teachers to think of life and energy as being sibling entities becomes a challenge that holds great promise. And this is not only because such a challenge is consistent with the first chapter of the book of Genesis. It is most inspiring to think of the animate world catching up with the rate of progress in the inanimate world. Were both entities to receive similar treatment, perhaps humanity can give up behaviors that could very well have been left in the cave, or if you prefer, in the Garden. To pass this challenge along to America's 40,000 biology teachers can be an effective way to recognize the role that their profession plays in our society. It will be up to people who can cope with the complexities of communication but I will gladly provide the first one thousand dollars to finance a first class letter that reminds our biology teachers of the central theme of the "Controversy" booklet and includes appropriate versions of the above ideas.

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Theistic Science: The Metaphysics of Science

A recent letter of mine,¹ which suggests that an entity in nature is either: (1) purely physical, (2) purely nonphysical, or (3) both, viz., physical/nonphysical and considers the existence of the supernatural, was meant to clarify the theistic science put forward by Roy Clouser.² In fact, several authors criticized Clouser's attempt of a theistic science.³ Nonetheless, in a recent letter, Clouser characterizes the "purely physical" as "on a par with talk about square circles."⁴

Clouser's objection that an entity could be purely physical is based on the gedanken experiment of "thinking away the non-physical properties of a thing to see what they have had left when they finished."⁵ Clouser adheres to the philosophy of Herman Dooyeweerd,⁶ to whom even atoms, clearly purely physical entities, can have "biotic, sensory, logical, linguistic, and many other kinds of properties."⁷ Surely, atomic properties, e.g., mass, spin, change, etc., are detected by purely physical devices via physical interactions and such data is ascribed to inherent properties of individual atoms.

Physics deals with the physical aspect of nature. A reasonable start then is to suppose that science is the study of the physical aspect of nature and its subject matter is data that can be collected, in principle, by purely physical devices. Note that only the physical aspects of physical/nonphysical entities are amenable to the study of science. Accordingly, life, rationality, consciousness, etc. are purely nonphysical since purely physical devices cannot detect them. Herein lies the non-reductive aspect of our set-theoretic description of the whole of reality.

Laws of experimental science are generalizations of historical propositions, viz. experimental data. Thus, history is constitutive of experimental science, whereas metaphysics is regulative of it, while formal logic and

mathematics are instrumental to it. Theology is neither constitutive, nor instrumental, nor regulative of science. Hence, theistic science can only be envisioned as supplying the metaphysics that regulates science without creating incompatibility between historical propositions and particular theological propositions.

Consider a book, which is purely physical even if it contains ciphered, rational information. A rational human being, which is a physical/nonphysical entity, together with the book, gives rise to more than just the sum of its parts. By deciphering the information, the human acquires knowledge, which is purely nonphysical.

Similarly, purely physical devices collect data when interacting with other entities, whether purely physical or physical/nonphysical, which the experimenter transforms into purely nonphysical knowledge via data analysis and theory building. Of course, one ought never to forget that human rationality characterizes the whole of reality by nonphysical mental models, abstractions, and constructs that have their counterparts in the real but are not necessarily identical to them.⁸

Scientists deal with secondary causes, not first causes.⁹ The latter involves ontological questions.¹⁰ From the standpoint of the order of being, one can say that without the ontological neither the generalizations nor the historical propositions of the experimental sciences would be possible. However, the theistic concept of creation *ex nihilo* is actually impossible for humans to understand or think since prior to creation there is nothingness, which humans cannot conceive. Only an intelligence, infinitely superior to ours, a super intelligence, can be in the presence of nothingness and make something happen.

It is commendable to attempt to develop a theistic science. For the Christian, two verses would have to be central: (1) "All things came into being through him, and apart from him nothing came into being that has come into being" John 1:3; and (2) "... true knowledge of God's mystery, that is, Christ himself, in whom are hidden all the treasures of wisdom and knowledge" Col. 2:2-3. However, I do not know how to use such revealed knowledge to do science except to require a metaphysics that is regulative of it that is consistent with such biblical verses.

Christ, who is the Creator and source of all knowledge, is the ultimate goal of all those seeking truth in any discipline. It is difficult to know God with the puny tools of science. As we get closer and closer to the truth, our science must merge with our theology otherwise we will be following a false end of our scientific inquiry. I think Max Planck said it best: "God is the beginning of every religion and at the end of the natural sciences." All scientists who have any depth to their work will find the hand of God in nature or else a mystery that they refuse to identify with God.

Notes

¹Moorad Alexanian, "Set Theoretic Analysis of the Whole of Reality," *PSCF* 58, no. 3 (2006): 254-5.

²R. Clouser, "Prospects for Theistic Science," *PSCF* 58 (2006): 2-15.

³P. Le Morvan, "Is Clouser's Definition of Religious Belief Itself Religiously Neutral," *PSCF* 58 (2006): 16-7; H. Halvorson, "Comments on Clouser's Claims for Theistic Science," *PSCF* 58 (2006): 18-9; and