

IS SCIENCE RELEVANT TO THEOLOGY?

by *Herbert Feigl*

The following remarks intend to outline what I consider the major points at issue. It seems to me that most of the previous contributions to this topic published in *Zygon* have dealt with the implications of current science for theology and religion mainly by way of rather gingerly, halfhearted allusions. The straightforward spirit of the eighteenth-century Enlightenment (e.g., Hume, Kant) needs reviving and "updating." Surely, no one can claim to "know all the *answers*," and—in all humility (I trust this is still regarded as a virtue!)—I wish to set out what strike me as, at least, some of the pertinent questions. And I shall also attempt to give some tentative *answers*. Since I have been asked to do this in very brief compass, the harsh tone and terse style of my presentation will make my contentions appear more dogmatic and intransigent than I should wish them to be.

1. The term 'religion' is used with such a great breadth of meaning as to include even atheistic or non-theistic "philosophies of life"; it covers anything from a *Gefühlsreligion* (i.e., a sentiment of awe; and/or a deep commitment to certain ideals) to the theistic religions that are usually conceived within a theological frame. Hence it is imperative to be quite clear as to whether the questions concern a religion *with* or *without* a theology.

2. There can be little doubt that the experiencing of religious sentiments, or a deep "engagement" either on aesthetic or ethical grounds, can in no way conflict with either the methods or the results of science. Speaking for myself, and quite personally, I have occasionally been emotionally *overwhelmed* by the beautiful in nature (e.g., the scenery of mountains, or of the ocean); by the love, friendship, and kindness of fellow human beings; by the greatness of the heroes of true humanity (humane-ness!); by artistic or scientific creativity; by the "message" of great poetry; and in my case, most especially, by the "message"

Herbert Feigl is director of the Minnesota Center for Philosophy of Science, University of Minnesota.

of great music. Indeed to my way of feeling and thinking, some of the works of such deeply "religious" (in the wider sense) masters as Bach, Mozart, Schubert, Beethoven, Franck, Bruckner, Mahler, Poulenc (and a few others) are among the highest achievements of the human spirit. Several of my well-meaning friends keep telling me that this shows that "deep down" I am a truly religious person. But since I see not the slightest reason for accepting *any* sort of theology (and plenty of reasons for rejecting *all* of them), it can *at most* be granted that I have "religious" *experiences*. In my younger days I felt just a little guilty for "sponging" on the emotions of devoutly religious (i.e., theistic) composers. But I now think that the expression and evocation of feelings, sentiments, and moods is tied to a deeper level of experience than is formulated ideationally in a theologically based religion. The occurrence of such experiences (from the aesthetic through the moral to the deeply "mystical") *can* of course (but need not always) be made the subject of scientific (e.g., psychological or sociopsychological) inquiry. But the mere enjoyment (or suffering) of these experiences can in no way be incompatible with the knowledge-claims of science (or, for that matter, of theology). It is the *interpretation* put on those experiences that makes a difference in this regard.

3. Nietzsche's phrase "God is dead" is now bandied about even in the daily papers and in the periodicals. My first reaction was that neither the truly theistic theologians nor the devoutly religious believers need pay any attention to this recent insurgence of disbelief. At least in the more or less orthodox Judeo-Christian tradition (should one not include that of Islam here too?) the ground of religious (theistic!) *faith* is *Revelation* (as transmitted in the Scriptures); and it has been fairly generally agreed that revelation is totally, fundamentally, different in kind from any sort of empirical evidence that supports the knowledge claims of science. The first move, then, should plausibly be: Let there be "peaceful coexistence" between not only (non-theistic) religious experience, but also, and especially, theistic (theologically interpreted) religion and the enterprise of science.

4. But the situation is not quite so simple. Under the influence of the Age of Enlightenment and of the current Age of Analysis we have come to ask more incisive questions; and we have arrived at a higher level of aspiration as regards clarity, candor, and honesty of thought. This is, indeed, at least partly a result of the propagation of the spirit of the rational, critical approach that is the outstanding, paramount feature of the modern scientific method. The knowledge-claims of science are such that they are in principle susceptible to testing. The

best justification for accepting scientific theories (as in physics, biology, psychology, or the social sciences) is—as Sir Karl Popper so persuasively puts it—that even the most strenuous and severe attempts at refuting them (by experiments, statistical designs, i.e., ultimately by observation) have failed! There is of course no such thing as a *definitive* verification of any theory in the empirical sciences. Such theories must forever be kept, in principle, open to criticism, modification, revision—to the point of total refutation and replacement by an alternative theory. Now, as Bernard Shaw (with some pointed exaggeration) once said: “Religion is always right. Religion solves every problem and thereby abolishes problems from the universe. Religion gives us certainty, stability, peace and the absolute. It protects us against progress which we all dread. Science is the very opposite. Science is always wrong. It never solves a problem without raising ten more problems.” I take this to mean that for orthodox, theologically based religion, there are not—and cannot be—any other standards of critical appraisal than those stemming from an understanding of Revealed Truth; and, in some instances of religious (including mystical) experience. This, however, is no longer the case with the *modernists* in theology—from Tillich, Niebuhr, Bultmann, Bonhoeffer, the Bishop of Woolwich, *et al.*, through the entire spectrum of the demythologizers to the “God is dead” theologians (!) Altizer, van Buren, *et al.*

5. It seems obvious that the spirit of the Enlightenment, of analysis, and of the critical approach has been, and continues to be, a strong stimulus in the modernistic movements. The crucial questions that any honest scientist must constantly ask himself are: “*What do I mean?*” (by the words or symbols I use); and “*How do I know?*” (what I claim to be true—or well confirmed). Now, of course these questions, asked and answered in the empirical sciences in one characteristic way, may or may not be understood in a similar way in theology. The orthodox theologian may well answer that his concept of the deity can be grasped only by analogy, metaphor, or allegory. The *via negativa* of St. Thomas Aquinas and his latter-day disciples clearly imposes severe limitations on the analogical conceptions of a personal God and his attributes of omniscience, omnipotence, and benevolence. Notoriously, the perennial enigma of evil required logical devices by which the theological dogma was made proof against disproof, immune to empirical test, and hence absolutely irrefutable. Even the “man in the street” seems satisfied with the contention that “God’s existence can neither be proved nor disproved”; hence that it is a matter of faith. But do not the words “faith” or “belief” connote that some proposition is held

as *true*? And must one not, in all candor, ask as to whether even the meaning of such words as "belief" or "truth" is the same in theology and in science?

6. Indeed, so great is the positive emotional (expressive and/or evocative) appeal of the words "belief" and "truth" that equivocations of their various (and quite different) respective meanings are almost the order of the day. "Belief" may mean the ordinary, empirically grounded attitude we take toward well-confirmed propositions—be it in everyday life, or in science. "Belief" may mean a radically trans-empirical faith or creed as in the orthodox theistic religions. And "belief" may also mean a wholehearted commitment to an ideal, a "cause," or—as in the "I-Thou" relationship—an attitude of trust, love, and understanding.

I am not saying that everybody is obligated to ask himself what he means by "belief," "faith," "truth." But for those of us who aspire to some measure of intellectual honesty and conceptual clarity, I must say that we have had the tools of analytic philosophy, of the clarification of ideas with us—with ever increasing incisiveness and effectiveness—ever since the times of Socrates, Plato, and Aristotle. Current philosophical analysis—despite many unresolved controversies—at least has awakened us most forcefully to the need of making distinctions wherever there is a danger of confusions, i.e., a danger of giving credit where it is not due (or contrariwise, not giving it where it is due).

7. The crucial issue is, of course, what to do about *transempirical belief*. By this I mean *radically* transempirical belief such as is involved in the doctrines of *Deus revelatus* and *Deus absconditus*. May I reassure my readers that I am not invoking here the notorious positivist (or logical empiricist) criterion of factual meaningfulness. Although I am still of the opinion that this criterion can be formulated in a way that is logically defensible and that enables us to distinguish between (good!) science and (pernicious!) metaphysics, I shall not use it in my critique of theology, because I think I have more effective critical weapons at my disposal. I shall not either regress to the "Warfare between Science and Theology" as it was understood in the nineteenth century. This concerned mainly the clash of the *literal* interpretation of the Scripture with the "facts" of science. This is old hat, *passé*—and largely uninteresting today—for two reasons: (1) The modernist theologians have largely abandoned all fundamentalism and literalism. They have demythologized. (2) Truly open-minded scientists, without in the least giving quarter to obscurantism, readily admit that science (e.g., the theory of evolution) is far from finished; it explains scarcely

any of the fascinating and marvelous *specifics* of the pageant of the species throughout the succession of its stages.

Moreover, the majority of the modernists (certainly the demythologizers) among the theologians no longer look for the "chinks in the armor of science." This sport is quite out of fashion these days, though purely logically I would be the first to admit that a well-reasoned teleological argument should not be dismissed on a priori grounds. I would even go so far as to grant that a sufficiently modernized argument *au* Paley (or Lecomte du Noüy) would be at least worthy of consideration by scientists, philosophers, and theologians. I say all this, I hope it is clear, not for some obscurantist reasons, but rather because I sense an all-too-sanguine attitude in the neo-Darwinists. As long as the explanations offered by the theories of genetics, population pressure, mutations, and survival of the fittest are as sketchy as they are still today, I would plead that the biologists supplement (or supplant) their current theories by better (scientific!) theories. And even if this should become hopeless, recourse to supernaturalistic "explanations" is futile, precisely because "the inscrutable will of God" (just like the Absolutes of Metaphysics, or the Entelechies of the Vitalists) explains *too much*. The facts and regularities of the world as we come to know them in empirical science are equally compatible with monotheistic, polytheistic, Manichaeistic, or Zoroastrian (God and Satan interfering with each other) "explanations." These are mere verbal sedatives, pseudo-explanations—radically different from responsible scientific explanations.

Some parts of Freudian metapsychology are methodologically objectionable for the same reason: No matter what the behavior, the dreams, the conscious experience of a given person, it can all be "explained" in terms of the life force (eros) and the death instinct (thanatos) by suitable (mythological) interpretation of their combined (or separate) effects. This is not science but untestable metaphysics. It amounts to no more than a pictorially and emotionally appealing verbal gloss on the description of the ascertainable facts. The same holds for Teilhard de Chardin's rather poetic rendering of biological, psychological, and social evolution. Père Teilhard, a respected paleontologist, in his *The Phenomenon of Man* has not contributed anything to either the theories of evolution or to the philosophy of biology.

8. Nevertheless, I am far from saying that the concept of a *Deus revelatus* or a *Deus absconditus* is meaningless. I would grant it at least a vague analogical significance (cognitive, indeed—not just emotive!), but I would insist on asking as to *whether there are any good*

reasons for believing *that such a deity exists*. Mere tradition (no matter how glorious); mere emotional need; the message of ancient documents; the persuasive oratory of preachers; the wishful thinking about a hereafter; about a heavenly arbiter of right and wrong; etc., etc., are obviously *no good reasons whatever* for accepting the belief in the existence of a personal god. In fact, to the scientifically sophisticated mind, the more anthropomorphic the conception of the deity, the less credible it becomes. Why should wishful, all-too-human thinking be more trustworthy here than in the modes of primitive magical and animistic thought? Of course, purely personally speaking, I am not unacquainted with the emotional hankering for a heavenly father (why not mother? Roman Catholicism at least provides for that too!); surely, I can feel the tug of the wish for survival after bodily death, especially when thinking of the possibility of a reunion with beloved parents, relatives, friends. I have even a modicum of understanding (empathy and sympathy) of the wish for reincarnation, and even for the ultimate dissolution and universal union in the Nirvana, as they are so beautifully presented in some of the oriental religions. But just because we are now able to "see through" (psychologically, psychoanalytically, etc.) the motivations of these forms of wishful thinking, they become (I am not saying absolutely disproved) extremely suspect and implausible.

9. A few words now about a demythologized theology. Does it still contain any sort of truth-claim? If we go to the extreme limits of demythologization (and must we not, in all consistency, do just that?), what else is left but the *moral message* of religion? Certainly the stern, or alternatively, forgiving, fatherly judge is retained only as a parable or allegory. Jesus, along with Moses, the Prophets, and Mohammed, is then to be viewed as an—indeed exceptional—but still entirely human and highly progressive teacher of morality.

10. Let us finally look at the rather obscure and devious ways in which some present-day scientists and philosophers of science attempt to achieve a rapprochement of science and theology. We are told that the old "objectivist" view of science is obsolete; that the alleged interaction between the human observer and the observed physical situation resembles the I-Thou relationship (Buber) between man and fellow-man, and—by timid suggestion—perhaps also the I-Thou relation between man and God!

The observer-observed relation in quantum mechanics has been a highly controversial matter for forty years. Many critical voices (of physicists, as well as of logicians of science) have been raised against

the "Copenhagen" (complementarity and duality) interpretation of quantum physics. The interpretation actually used in the work of the physicists is guided by the rule due to Max Born, according to which the (square of the modulus of the) ψ in the Schrödinger equation represents a probability for the occurrence of certain micro-events. These probabilities depend quite *objectively* upon the physical conditions of the experimental arrangements. The outstanding quantum physicist, Alfred Landé, has in many publications attempted (I think with some success) to "demythologize" quantum mechanics—to eliminate the (unnecessary) mysteries of complementarity and of the duality of waves and particles. More significantly, it has long been recognized that the alleged "intervention by the human observer" (let alone his—immaterial??—mind!) is a gross misinterpretation. (The interaction between measuring instrument and the measured magnitudes of the physical situation is, of course, important, but the reading of the measuring instrument and its result—as on tape or film—can be performed by the human observer at any time, even long after the "act of measurement.") A similar misinterpretation of the role of the observer in relativistic physics was exposed and removed many years ago.

11. What could possibly be gained for theology even if these were *not* misinterpretations? Are these good scientists clinging to straws while they are sinking in the ocean of a demythologized theology? Are they trying to tell us that the much vaunted "objectivity" of science does not exist; that even scientific truth rests on subjective passion (Polanyi?), subjective estimates (subjectivist probability theory?), in other words on "belief" or "faith"? Are they trying to tell us that science and theology are, "in the last analysis," in the same boat? If so, I recommend that they perform the "last analysis" a little more consistently and conscientiously. I can hardly suppress the thought that these recent forms of obscurantism had better be understood on the basis of the social psychology of current science. Just as the entirely unilluminating dialectical materialism of Russian philosophers is to be understood on historical and political grounds, so perhaps the subjectivistic obscurantism, with its vague flirtations with a theology (of which it is even left unclear to what extent it is demythologized), will finally be explained as one of the minor symptoms of the exasperating tension between East and West.

I shall refrain from repeating what many scientifically oriented humanists have been saying for quite some time. There is no question in my mind that the intellectual vanguard of mankind is already able to adopt an ethics without supernatural foundation or supernatural

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sanctions. Such a scientific humanism must, however, emancipate itself completely from the dogmas of nineteenth-century materialism. A new view of the "place of mind in nature" is in the making. Through the collaboration of scientists and (scientifically trained) philosophers, this perennial perplexity and central issue of modern thought may finally be overcome. (But that is another—and by far too long—story for this occasion.)

Surely, we have to live—and get used to so living—with an unfinished view of the world. We shall never cease to ask new questions, we shall—in all probability—continue to be confronted with all sorts of new problems, theoretical as well as practical. There is no philosopher's stone, there are no ultimate answers. But the endless quest of science; the candid search for knowledge and clarity; and the morally humane application of scientific knowledge are surely something that mankind can and, in all humility, should pursue. If we are not to exterminate ourselves on this planet by the immoral and stupid use of our scientific and technological power; if we are to use this power for the betterment of the human condition—surely, a new age of enlightenment, scientific as well as ethical, is our most imperative need.

CONCLUSIONS

Theology, inasmuch as it is literalistic (fundamentalistic), is incompatible both with the most assured results and the most reliable methods of science. As far as I know, modern Protestant theologies have not produced a coherent account of revelation. The Scripture is not even internally consistent, let alone compatible with the best-confirmed propositions of astronomy, geology, and biology. Hence deviations from the literal interpretation are nowadays clearly unavoidable. What then are the criteria that theologians are willing to use in their reinterpretations of the Scripture? I cannot see even a sketch of a blueprint of a promissory note in this regard. (In science we have at least that much at the beginning of the development of a new theory.) Partly demythologized theology is a questionable halfway house, unclear in content, intent, or truth-claim. Theology completely demythologized is no longer a theology at all; it reduces to a moral message, formulated by the use of allegorical, but essentially exhorting, consoling, edifying, or fortifying language. The current fashion of "God is dead" demythologization is just one of the effects of our age of science and philosophical analysis. Half-hearted attempts to show that the "subjective" element in science opens the door to theology

rest on grave misunderstandings of the scientific method or of the conceptual frame of modern scientific theories.

The existentialist phrases of "ultimate concern," "ground of being," "dread of nothingness," have not been used in any clear and unambiguous way. To my (no doubt, rather simple) mind, "dread of nothingness" means fear of death (some have it, others don't). "Ultimate concern"—even for many church- or synagogue-attending members of our industrial society—is basically the chasing of the dollars! "Ground of being" is a metaphorical phrase that has (to some) a vivid pictorial and/or emotional appeal; but what sort of cognitive meaning is to be attached to it? (Analogical conception in science is legitimate, fruitful, and crystal clear in comparison.)

The much-referred-to religion of great scientists often consists—as in the case of Einstein—in the belief in the order of nature. Einstein's God ("subtle but not malicious") never had anything to do with the moral commandments. Sir James Jeans conceived of God as a super-mathematician. His reasoning was: Since the laws of nature are mathematical in form; and since laws presuppose a lawgiver, therefore . . . (!). This is not only a glaring fallacy of four terms ("law"—prescriptive versus descriptive) but highly anthropomorphic to boot. Jeans surely created God in his (the mathematician's) image! An assertion frequently made by quite a few scientists who wish to avoid anthropomorphism runs something like this: "There must, after all, be a *Power* behind (beyond, back of) the Universe that is responsible for all its marvelous features that we observe and study in the sciences." But this notion of a "Power" is then left entirely unclear; nothing is said as to how the "Power" produces the phenomena of nature. Other current watered-down conceptions of God, like those of some modernists, are merely a metaphorical symbol for something greatly cherished. (For Wieman and Dewey, God is the symbol for the highest ethical and social values.) Full intellectual honesty demands a wholehearted acceptance of a scientifically oriented and philosophically clarified humanism.