Science and Religion in Identity Crisis

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Three hundred or so years ago not a few scientists spoke of science and religion as united in a holy alliance. Two hundred years later theologians could do little about the warfare in which science and religion appeared to be locked forever. Today, many theologians and some scientists speak of the mutual integration of science and religion, these two paramount forces in human life.

From both sides all too often mere generalities rather than tangible specifics are offered. This may already indicate a lack of simultaneous competence in both fields. Actually, those generalities suggest that an identity crisis may be enveloping both science and religion, and to an extent far greater than one may suspect.

The religious side of that crisis is easier to diagnose by a mere look at programs of instruction offered in most departments of religion and religious studies, as well as divinity schools and theological faculties. Actual exposure to what goes on in those places can readily bring into focus a feature typical of most of them. Whenever a question is posed, only a multiplicity of answers is tolerated. Even the slightest effort to cut through that multiplicity, within which contradictory stances too are acceptable, is frowned upon as judgmental. The result is the rise of that church where, to paraphrase a remark of Chesterton, each communicant is sharing the other’s unbelief.

A biting portrayal of this pathetic situation was given less than a year ago in a book, The Search for God at Harvard, written by Ari L. Goldman, religion reporter for the New York Times. It may not have been a sound idea at all on Mr. Goldman’s part to spend a full year at Harvard Divinity School to search for God there. Actually, the true target of Mr. Goldman’s search was not so much God as some experience about Him. Such a search could, of course, have ended, even if successful, only in mistaking God’s identity for some religious experience with no real identity.

The variety of religious experiences, to which Mr. Goldman found himself exposed in that prestigious divinity school, seemed to serve the purpose of concealing their true identity. Nothing has indeed changed there since William James, that legendary guru of religion as “experienced,” came up with his own theory about the varieties of religious experience.

Had Mr. Goldman thought, while at Harvard, of William James, he would not have been forced to identify the Christian religious experience as “the most elusive experience” of his early days in the “Div School,” as it is called there in a quasi-affectionate tone: “If, for example, there was a mention in class of the divinity of Jesus, the lecturer would offer an apology to the non-Christians in the room.” No wonder Mr. Goldman found shattered his expectation of encountering some religious experience which he could have identified as “old-type Christian piety.” This piety has always been rooted in clearly identifiable dogmas, but the Div School’s atmosphere was one of “religious relativity,” where “religious truth did not seem to exist” at all. What Mr. Goldman could not find in the classrooms of the

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1 This is an enlarged form of a lecture delivered in February 1991, as part of the program on Science, Technology, and Religious Ideas of the University of Kentucky.

“Div School,” he also failed to find in its imposing Chapel. Whether during the daily Noon service, which he faithfully attended, or at peeks into the Chapel in between classes, Goldman “never saw anyone on his or her knees.” At most, he saw “someone sitting there meditating,” but this did not happen frequently.3

Clearly, the “Div School” at Harvard had not advanced a whit beyond the state of affairs which set the tone at Yale too, as searingly portrayed a generation ago in God and Man at Yale. Of course, that portrayal was possible only because its author, W. F. Buckley, offered an evaluation in terms of definite values, or standards. (Whether these are called dogmas or not, should seem irrelevant. They could just as well be called fishnets.) If Mr. Goldman had any standards, they were the orthodox Jewish practices to which he was viscerally attached and never cared to put on clearly definable intellectual foundations.

This is why he was torn about Roman Catholicism. On the one hand, he felt deeply attracted to the Mass. On the other hand, he could not warm up to dogmatic Catholicism. It is difficult to decide whether he deplored the present status of Catholicism, as he perceived it. Although he seemed to be upset over the Catholic Church’s loss of moral authority within society, he was ambivalent about its cause, “the internecine struggles over authority with Rome and the anti-abortion cause.”4

Only if one is wholly unfamiliar with the long-standing uncertainty of Congregationalists about their own identity, can one voice surprise over the utterly elusive identity of religion in a divinity school and university with Congregationalist roots. The doctrinal atmosphere at Harvard Divinity School reminded Mr. Goldman of that nutshell summary of liberal Protestantism which H. R. Niebuhr had given half a century ago: “A God without wrath brought men without sin into a kingdom without judgment through the ministrations of a Christ without a cross.”5

Such a religion could not be distinguished from Mr. Goldman’s Judaism, to say nothing of reformed and conservative Judaism, except for his attachment to ritual laws. In all those denominations, one can freely wear the p.c. (politically correct) badge, this most effective sedative against the pressing need for true identification.

A p.c. religion will have no problem being integrated with science, though the relation may not amount to more than a convenient cohabitation that can be initiated, acted out, terminated, resumed, and reinterpreted on short notice. Cohabitation is always a dissimulation of the true identity of a rapport, an identity crisis in short. The religious side of that cohabitation can only function as religious syncretism. Thus no real difference will be claimed between nature worship and a worship steeped in the supernatural reality of a Creator free to create or not to create what is called Nature writ large, that is, a universe.

Within that syncretism every form of religion can be accommodated. There polytheism, with its worship of idols, will not appear too distant even from a worship that forbids the making of graven images of God. And when God and nature are fused to the extent in which this is done in pantheism, not only can one’s religion not be identified, but even one’s true identity diminishes to the vanishing point. In no form of pantheism has there ever been a place for that personal immortality which alone makes one’s identity (and one’s religion) meaningful and raises it above the lowlands of mere estheticism.

Syncretism, or the abolition of true identity, certainly foments heavy reliance on verbalism, which is in view; for instance, when pantheism is promoted in the guise of panentheism, or the idea, by itself perfectly orthodox, that God is everywhere and in everything. Syncretism, or religion’s identity crisis, is all too often couched in such noble words as ecumenism, global consciousness, and moral rearmament, to say nothing of such dubious labels as Gaia and New Age.

The so-called “mere Christianity,” first proposed around 1675 by William Baxter, a Puritan divine tired of religious controversies,6 was a symptom of identity crisis. The symptom resurfaced when in 1943 C. S. Lewis

3 Ibid., p. 44.
4 Ibid., p. 276.
5 H. Richard Niebuhr, The Kingdom of God in America (New York: Harper and Row, 1937), p. 193. In this case too, the ensuing vacuum had to be filled: “For the golden harps of the saints [devotees of liberal Christianity] substituted radios, for angelic wings concrete highways and high-powered cars, and heavenly rest was now called leisure” (p. 196). That was, of course, before the commercially “golden” age of

6 Baxter’s “mere religion” was a platform which already to Baxter’s more perceptive contemporaries appeared as one that “might be subscribed by a Papist or a Socinian.” See article, “Baxter, Richard,” in Encyclopedia Britannica, 1991 edition.
resurrected Baxter’s idea in a book, *Mere Christianity*, that made religious history for the latter half of this century of ours. C. S. Lewis could offer but his gut-feeling as to what that mere Christianity was when he said that he meant by Christian faith that “which is what it is and was what it was long before I was born and whether I like it or not.” No more clarity was shed on the subject by his equally elusive definition of Christian belief as the one “that has been common to nearly all Christians at all times.”

This is not to suggest that C. S. Lewis was not aware of the problem of leaving out of “mere Christianity” all items smacking of controversy in order to focus attention on items noncontroversial. But were there such items or tenets? No less importantly, even if there were some, could they be discoursed upon for any length of time without bringing up matters not only controversial but also pivotal for the articulation and defense of points commonly held by almost all Christians?

That almost complete unanimity evaporates like the morning mist once one raises the question whether “mere” Christianity implies miracles. Without talking of miracles in *Mere Christianity*, C. S. Lewis held miracles to be an integral part of the Christian proposition. Otherwise, he would not have defended the possibility, as well as the reality, of miracles against Humeans, erstwhile and modern. Yet, many Christians, who hold high a Christianity restricted to its mere basics, refuse to face up to non-biblical miracles that are much closer to us and far easier to investigate. Nor do they see that agnosticism about post-Biblical miracles is destructive of faith in biblical miracles as well. Still other Christians prefer not to speak of miracles precisely because they want to integrate science and religion, though on terms dictated by the interpretation of science given by most scientists, who have no use for miracles at all.

Some defenders of biblical miracles grant them validity only because they take the spacetime of relativity and the indeterminacy of quantum mechanics for a scientific possibility of miracles. They do not realize that in doing so they do away with miracles as well as with the physics of relativity, which is based on the strict continuity of the physical and for which time is, as Einstein once memorably admitted, a mere parameter of measurements. It seems that they are not sure of themselves and of the grounds, not at all scientific but deeply philosophical, on the basis of which alone one can confidently speak of miracles, and do so in a healthy disregard of science.

It is not even certain that today Christians are unanimous in their belief in creation out of nothing and in time. Christians are a motley lot in their interpretation of Genesis 1. Stances vary from taking it for the relic of preliterary legends to interpreting it in a grimly literalist sense, as is done in creation science. Typically, proponents of creation science make much, as if to cover their own uncertainties, of the uncertainty of various scientific conclusions and of the uncertainty of scientists about them.

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11 Einstein did so under questioning from Bergson, at the Sorbonne, in April 1922. See *Bulletin de la Societe francaise de philosophie* 17 (1922), p. 107.

12 For further details, see my *Genesis I through the Ages* (New York: Wethersfield Institute, 1992), the enlarged text of eight lectures delivered in New York City, under the sponsorship of Wethersfield Institute, in late April and early May, 1992.
Last but not least, there is Christianity’s central belief: redemption in Christ. Newborn Christians all too often do not want to hear about the conceptual certainties of dogmatic definitions achieved in the great christological debates of the early Church. Even within the pro-verbally dogmatic Catholic Church, discourses can be heard about Christ that can only prompt any consistent thinker to part with belief in Christ as the only begotten Son of God. Quite recently an Anglican bishopric was awarded to the Regius Professor of Divinity in Oxford whose scholarly reputation rests on a programmatic rehabilitation of Arius.\(^\text{13}\)

Even Arius held Christ in a much higher esteem than the Roman Catholic authors of two recent lives of Christ. According to one of them, who protests his Roman Catholic orthodoxy, Jesus may Roman Catholic orthodoxy, Jesus may have been a celibate, but he certainly had real brothers and sisters. But that author's religious identity becomes doubtful when he argues that, since historical scholarship proves only that Jesus was a peasant Jew, his divinity can only be had on faith.\(^\text{14}\) He seems to be blissfully unaware of the historic fact that this dichotomy between historic or “scientific” evidence and faith has been a chief source of depriving all too many Christian professions of faith the identity they should have manifested. The very identity of Christ is indeed in widespread doubt among Christian theologians who lend receptive ears to some “experts” on the Qumran scrolls who maintain that Christianity in its earliest form contained nothing essentially new that Judaism at that time did not contain.\(^\text{15}\)

The systematic leveling of Christ to very low human levels is, of course, part of the carefully cultivated uncertainty about sin. Genuine Christian awareness of the reality and seriousness of sin has now for decades been under mounting pressure to align itself with “new” perceptions about sin. One is the view that sin is a psychological infirmity; another consists in not perceiving sin at all. For fashionable thinking there are only so many patterns of behavior. Consequently, any behavior, once it becomes a pattern, that is, once it is acted out by a statistically significant number of people, can claim social acceptance. From there it is but a short step to claims for legal protection and moral respectability, as if legal were equivalent to moral.\(^\text{16}\)

Christian (and Jewish) awareness seems to have come a long way from the injunction given in the book of Exodus: “You shall not repeat a false report. . . . Neither shall you allege the example of the many as an excuse for doing wrong” (Ex 23:112). Too many Christians seem to be worlds removed from those forebears of theirs who accepted cheerfully the truth of the words: “You will be under pressure in this world,” because “no disciple is greater than his master.” Christian theologians are few and far between who have a style with at least a touch of Tertullian's incisiveness: “Christ said, ‘I am the truth’. He did not say, ‘I am the custom’.”\(^\text{17}\) Far many more are those theologians whose “reasonings” illustrate Edmund Burke’s acid remark: “Custom reconciles us to everything.”\(^\text{18}\)

Speaking of Exodus is as good a reason as any to say a few words about the disarray in which Jews of our times find themselves concerning their religion. Varieties of opinion range from literally militant Zionism to no religion at all. I wonder whether Christians, who firmly believe in the personal immortality of their souls and in subsequent resurrection, would find much sympathy among Jews, except for the most orthodox. Cultural conservatism, very popular among some American Jews, can claim social acceptance.


\(^\text{15}\) One wonders what is to be gained on the Jewish side by the claim, most memorably made in this century by Rabbi J. Klausner, that all ethical and religious tenets of the Gospels occur in early Jewish writings. Whatever the identity crisis that should be logically generated by such a claim, it makes it impossible to identify Judaism as a universal religion. This is what Klausner unwittingly admitted, in addition to destroying his claim that Jesus had offered nothing new in the way of ethics and religion, as he wrote: “Jesus came and thrust aside all the requirements of the national life.... In their stead he set up nothing but an ethico-religious system bound up with his conception of the Godhead.” *Jesus of Nazareth: His Life, Times and Teaching* tr. from the original Hebrew by H. Danby (New York: Macmillan, 1926), p. 390. But if one’s conception of the Godhead has nothing to do with one’s religious and ethical tenets, what is their source? One’s national or racial affiliation?


\(^\text{17}\) It was with this phrase that Saint Turibius, the famed Archbishop of Lima (1538-1606), countered gold-hungry conquistadors, who tried to justify their evil ways by invoking “tradition.” See Butler’s Lives of Saints (New York: P. J. Kennedy and Sons, 1962), vol. 2, p. 167. The phrase is fully applicable to many captains of capitalism and neocapitalism.

is not enough. It does not by itself lead beyond this life on earth to an otherworldly compensation for cruel deprivations suffered in this life. That there can be no such compensation was the gist of Norman Podhorroz’s objection after I had spoken in Moscow, in June 1989, before a meeting sponsored by the Soviet Academy of Sciences and Moscow University, on belief in the existence of God as supported by science. In that speech, I also referred to that belief as the only ground on which one can think of an eventual compensation for tragedies whose number, in this life, is far more than legion. And yet I was speaking only of the hundreds of millions of innocent sufferers without saying a word about those-not a few-who never suffer in this life any punishment for horrible crimes.

A millennium ago, leading Muslim mystics such as al-Ashari and al-Ghazzali held that reference to the laws of nature was a blasphemy against Allah’s omnipotence. The leading Muslim rationalists, such as Ibn-Sina (Avicenna) and Ibn-Rushd (Averroes), held that the truly enlightened Muslim can hold the idea of triple truth: The lowest truth, or the truth of catechism, was for the imams; the middle level was for the enlightened Muslim can hold the idea of triple truth: The lowest truth, or the truth of catechism, was for the imams; the middle level was for the highest form of truth, the truth of science, was the privilege of the enlightened. These, however, were to keep that third truth to themselves, lest they suffer the consequences. The medieval Muslim world could not find a middle ground, such as the one worked out by the great scholastics shortly afterwards, concerning faith and reason. Whether modern Muslim intellectuals can work out a satisfactory balance remains to be seen. But they had better recognize that an identity crisis is looming large over their heads, a crisis fueled by science, or rather by the impossibility to live today for more than a few minutes without taking advantage of this or that scientific tool.

As to Buddhism, its numerous varieties may in themselves suggest a chronic identity crisis. Such a crisis has plagued many of those young people in the West prior to their embracing Buddhism as a religion. At any rate, in its classical method, aimed at giving an escape from the self, Buddhism can hardly escape the suspicion that it offers a cure for identity crisis by depriving the self of its identity. In fact, in all the great philosophical presentations of Buddhism, as also in its amalgamation with Confucianism and Taoism, a central place is occupied by the denial of what is known in Western logic as the principle of identity and non-contradiction. No wonder that Buddhism has received a very sympathetic consideration by those who see in the Copenhagen interpretation of quantum mechanics the highest form of enlightenment because that interpretation is taken as equivalent to a physics which too many take for the ultimate in science. To make matters culturally far worse, Niels Bohr lent his full scientific prestige to establish the principle of complementarity as a philosophy that would give better guidance in life than religion ever could.

The principle of complementarity is an integral part of the Copenhagen interpretation. Dime a dozen are the books and articles, written by theologians and scientists, at times together, in which one finds it registered with great satisfaction that science and religion are

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21 As can be seen in such a programmatic identification of quantum mechanics with Eastern philosophies as F. Capra’s The Tao of Physics, first published in 1975. For a list of unsparing criticisms of Capra’s claims, see E. R. Scerri, “Eastern Mysticism and the Alleged Parallels with Physics,” American Journal of Physics 57 (August 1989), pp. 68792.

22 For his exact words, recorded by a confidant of his, see my book, God and the Cosmologists (Edinburgh: Scottish Academic Press, 1989), p. 221.
complementary, like the particle and wave aspects of matter. This claim certainly deserves some scrutiny even within the perspective of this lecture. The claim leaves, in studied indefiniteness, the religion in question. A moderately careful reading of the philosophical works of Bohr, Schrödinger, Max Born, and Heisenberg should easily reveal a conviction common to all of them. To a man, they would protest the claim that the principle of complementarity entitles one to make a rational plea for immortality, to say nothing of revelation, miracles, resurrection, and a judgment pertaining to an eternal reward or eternal punishment. The principle of complementarity tolerates only a religion which is reduced to that sheer estheticism where one is faced with ever shifting moods, styles, and with a perennial craving for fulfillment that never comes.

But the principle of complementarity, as taken for a philosophical and religious panacea, or cure-all, leaves even science, that is, the science of quantum mechanics, in an identity crisis. A priceless glimpse of this was provided by no less an insider than the late Professor Dirac. It tells something of the measure of that identity crisis that what Dirac said in the broadest scientific daylight, the Jerusalem Centennial Einstein Conference in 1979, has been studiedly ignored by the scientific establishment, and by its chief ally, or perhaps millstone around its neck, the establishment known as the philosophers and historians of science. Dirac said nothing less at that conference than that quantum mechanics, as it stands today, will have to be reformulated along the lines of strict predictability as demanded by Einstein: “I think that it is very likely, or at any rate quite possible that in the long run Einstein will turn out to be correct even though for the time being physicists have to accept the Bohr probability interpretation—especially if they have examinations in front of them.”

Clearly, this is not the kind of diagnosis which its subjects would sedulously recall to themselves, let alone to their students. Ostriches love to bury their heads in the sand lest they be forced to face the true nature of their predicament. This is precisely what the champions of the Copenhagen interpretation of quantum mechanics did with respect to its most con sidered appraisal by J. S. Bell, of Bell’s Theorem fame. On the one hand, they have not ceased to recall his famed theorem, which they took for the final proof that ultimately everything is haphazard. Yet all he did was to show that quantum statistics is more successful than classical statistics in coping with a certain kind of coincidence in radioactive emission. Two years later, on finding subtle illogicalities in the “reduction of wave packets,” a pivotal issue in theoretical quantum mechanics, he felt impelled to conclude that quantum mechanics “carries in itself its seeds of destruction.” Theologians, and philosophers of physics, still have to pay adequate attention to this much more profound conclusion of Bell. When they bring it up, they usually display that touch of nervousness such as transpires from K. Gottfried’s very polite rebuttal of Bell’s claim. Theologians who continue integrating their field with quantum mechanics should pay heed. Unwittingly, they may promote their own self-destruction, the ultimate form of identity crisis.

Much has been said about the identity crisis that had beset physics toward the end of the 19th century. Much less aired are the early traces of that crisis. There is much more than meets the eye in an apparently innocent facet of Newton’s Principia. It contains not a single paragraph on the philosophicomethodological questions raised by the fact that he had written not merely a Principia, in itself a grave word, but a Philosophiae naturalis principia mathematica. One would in vain interrogate Newton as to what he meant by nature, by philosophy, and even

24 Recent major biographies of Schrödinger, Dirac, and Heisenberg are particularly telling in this respect.
by mathematics.

Newton may not even have been absolutely sure of himself as a physicist. Otherwise, he would not have spent precious hours in erasing from his manuscripts references to Descartes, lest posterity should suspect that he owed something to the Frenchman. No wonder. Cartesian in France greeted the *Principia* with the remark that for all its fine qualities, it was not physics. What was it? It certainly was not a mechanistic physics insofar as this means mechanistic models, of which the *Principia* was conspicuously void. Only some time later were those models grafted, and in large numbers, on the mathematics of the *Principia*, which ushered in the age of infinitesimal calculus.

Although a rigorous proof of the “limit” did not come until the early 19th century, Newton’s infinitesimal calculus stood for a blissful state of total certainty, with no trace of identity crisis. The next scientifically momentous book with the word *Principia* in its title was published in 1910, under the title, *Principia mathematica.* It did not contain a retraction by its co-author, Bertrand Russell, concerning his earlier description of mathematics “as the subject in which we never know what we are talking about, nor whether what we are saying is true.” Later, Bertrand Russell qualified his agnosticism about mathematics only to the extent of saying that physics is “mathematical not because we know so much about the physical world, but because we know so little; it is only its mathematical properties that we can discover.”

This warning of Bertrand Russell’s should be ample food for thought for those who cultivate other branches of physical science, especially the various branches of life-sciences. Being the most exact among all empirical investigations, physics is eagerly imitated by other empirical sciences. Their cultivators may suffer some identity crisis owing to their being overshadowed by their glamorous big brother, physics. In addition, this remark, if pondered enough, may even bring back to their senses various cultivators of the humanities. For

28 Thus the anonymous reviewer of the *Principia* who wrote for the prestigious Journal des Scavans coupled his praise of Newton’s work as “the most perfect mechanics that we can imagine” with the wish that he would crown it by giving “us a physics as exact as the mechanics.” See F. J. Aiton, *The Vortex Theory of Planetary Motion* (London: Macdonald, 1972), p. 114.

29 By A. N. Whitehead and B. Russell, of course.


whenever psychologists, sociologists, or historians try to imitate physics, and quite a few of them do, they merely reveal symptoms of identity crisis.

This is even truer of philosophers, to say nothing of theologians. The program of a so-called scientific philosophy is a fairly old fad that had such prominent devotees as Descartes, Hobbes, Hume, Kant, and Comte, and produced long-discredited systems of philosophy. The fad of a “scientific” theology is rather new. It produced lengthy treatises about the theology of the world, without a paragraph in them about that world which is the universe. One could also refer to books with “insight” and “method” in their titles, though with no clear guidance in their contents as to what qualifies for insight and in what true method consists. If only such theologians aimed at nothing more than offering a well-argued rational discourse! Neither philosophy nor theology is or can be a science in the way in which physics is one, but both should be eminently rational, that is, well-reasoned, instead of being submerged into endless chains of vague metaphors and new-fangled buzzwords.

Seeing their own field as a discourse that demands utmost attention to clarity and consistency, theologians would discover a curious thing about science and scientists, and in particular about physics. Until about a hundred years ago, physicists could be seen from the outside as safely entrenched in their certainties.

James Clerk Maxwell characterized that state of affairs when, in 1870, he described the Royal Society as “the company of those men who, aspiring to noble ends . . . have risen above the regions of storms into a clearer atmosphere, where there is no misrepresentation of

32 Something akin to the pathological may be on hand when a prominent historian of the antecedents of the American Civil War claims that nothing will be really known about its true cause until the full voting record of the Congress, from the previous thirty years, has been evaluated by a computer. For further details see my forthcoming article, “History of Science and Science in History,” *Intercollegiate Review* 28 (Fall 1993), pp. 20-33.

33 This is particularly true of the so-called transcendental Thomists. For details, see my *Père Marquette Lecture* 1992, *Universe and Creed* (Milwaukee: Marquette University Press, 1992).

34 I am, of course, referring to B. Lonergan.
opinion, nor ambiguity of expression, but where one mind comes into close contact with another at the point where both approach nearest to the truth.35

A quarter of a century later, Maxwell’s electromagnetic theory appeared to have a truth content which resembled Nicolas of Cusa’s definition of the universe: its center everywhere, its circumference nowhere. For this is the unintended gist of Hertz’s famed remark: “Maxwell’s theory is Maxwell’s equations.”36 In other words, nobody really knew what was the true identity of those equations and that theory. Hertz’s definition implied that circularly which bespoke an identity crisis. Today, in this age of string-theory, zero-point oscillations, embryo universes and what not, it is even more difficult to specify the identity relation of each and every part of very successful physical theories with physical reality.

But the true identity crisis of science lies elsewhere. This is not to suggest that in empirical sciences, even outside physics, one could not find momentous traces of identity crisis even today. Evolutionary biology still has to come to terms with two rude jolts that knocked many of its cultivators out of their blissful state of mind. One was the realization, quite recently, that the theory of the origin of life as proposed by S. L. Miller in 1952 cannot cope with the high temperatures which certainly prevailed on the primitive earth three to four billion years ago.37 The other is the evidence of major catastrophes to which the earth is exposed every 26 million or so years, some of which result in substantial extinctions of all life forms.38 The identity crisis that resulted from this is exemplified by the so-called theory of punctuated equilibrium of evolutionary development. At a national gathering of its devotees, the level of consistency was such as to prompt one participant to remark that he would find more intellectual honesty at a national gathering of second-hand car dealers.39

But the real source of identity crisis in science today does not lie with its internal problems, of which it will very likely never run out. For who can give assurance that future decades and centuries hold no surprising discoveries, totally unimaginable today? The real source of that identity crisis lies in the fact that scientists have, to a considerable degree, ceased being the official spokesmen of what science is about. The image of science as entertained by society at large, and even within academic circles, is now determined as much, if not more, by what philosophers and historians of science, and mere science writers, state about science.

The change should seem enormous. A hundred or so years ago, relatively little was written about the philosophy of science.

Authors of such books were usually either philosophers with very little training in science, or scientists with as little familiarity with philosophy. William Whewell, in the 1830s, was the first prominent scientist to write a serious book on the philosophy of science, and he was not imitated until Ernst Mach, Pierre Duhem, and Henri Poincare came along around 1900 or so.

From the 1920s, there was a rapid increase in the number of prominent scientists who wrote books on the philosophy of science. To speak only of physicists, one may recall the names of James Jeans, Eddington, Bohr, Born, De Broglie, Margenau, Whittaker, Schrodinger, Heisenberg and, more recently, Feynman. But the books that really formed the “standard” image about science were written by philosophers, at times with proper training in physics, though at times with no such training. Moritz Schlick was not a physicist, nor was Karl Popper, nor Hans Reichenbach, nor Herbert Feigl. While Thomas Kuhn had full training in physics, this was not true of Lakatos and Feyerabend. Yet it was these who imposed on our culture the view that science is intrinsically uncertain about itself. What can such an uncertainty

37 In fact, as shown by N. R. Pace, “Origins of Life: Facing up to Physical Setting,” Cell (May 17, 1991), pp. 531-33, the mere presence of water could be destructive of the process advocated by Miller. See also the report by M. W. Browne about Pace’s paper in the New York Times, June 18, 1991, section C1.
39 Reported in Newsweek April 8, 1985, p. 80.
breed if not an identity crisis, and a chronic one? No major articles on science contributed by philosophers of science to major encyclopedias would give a fair certainty as to what science really is. There are still some grim inductivists around, as well as some dreamy-eyed Platonizers. Classical positivists, in the style of Auguste Comte, are few and far be tween, but the number of Machists is great, though few of them take consistently Mach’s sensationism which ultimately led him to embrace Buddhism. Most would endorse some form of the idea of science as based on the hypothetico-deductive model. Yet, divergences of opinion abound as soon as one comes to the art of forming hypotheses and to the legitimacy of deductions. With the exception of Duhem, who was a realist and held high common sense as the only consistent starting point, they would have only scorn for T. H. Huxley’s famous definition of science as “trained and organized common sense.”

Many philosophers of science offer explanations of science that border on being nonsensical. Such is the case when science is taken for an exercise in falsification. But, if all that science can do is falsify conclusions, not only the identity of its conclusions is at stake but its very own identity as well. Such should seem an inevitable conclusion unless one is denied the liberty to see the contradictory character of the claim: only such statements have truth-content that are falsifiable, though this truth is immune to the test of being falsifiable. If science is a series of images, of themata, of research programs, what will assure that they fuse into one image, one thema, one program that can be safely identified? That the idea of science as an anarchical enterprise as has found devotees may be symptomatic of the identity crisis that breeds anarchists, intellectual and otherwise. That science has also been spoken of as a game, very clever of course, is characteristic of recent decades when too many young academics had it too well and lost sight not only of the identity of their subject but very often of their own self-identity as responsible human beings.

Intellectually very treacherous is the case when science is identified with a big word that everybody uses and nobody defines. Apart from this, it should be obvious that if science is a never-ending chain of revolutions, this very proposition is its own refutation, because the proposition is offered as not being subject to the kind of change which is revolution understood as radical upheaval. Or should we let some philosophers of science have it both ways, namely, to bank heavily on big words and be cagey about what they mean by them? Those who speak constantly of scientific revolutions should come clean whether they mean more than what is implied in the French phrase, “plus ça change, plus ça reste la même chose,” which is possibly the best account of all political revolutions.

The phrase has a hardly-ever noted philosophical profundity. That depth was covered up when that great apostle of scientific revolutions, T. S. Kuhn, reversed his revolutionary tracks and invoked the principle of essential tension, as if metaphysics could be reinstated through the back door. And even by allowing metaphysics back on stage, Kuhn granted it no more than the role of a mere co-actor, if not an inept complement to the fascinating game of science with quantities.

Yet metaphysics is the very stage which any intellectual performance needs to be acted out. Even the very word metaphysics indicates that it is not supposed to be something juxtaposed. In that case, Aristotle would have called it para-physics and left it aside as something no more worth considering than paralogisms. Aristotle would have felt sympathy for that French phrase. All his philosophy rested on his coming to grips with the problem of identity through change as the safeguard of the sanity of the human intellect.

It is also the safeguard of the sanity of science.
Only if changes are such as to leave somehow intact the sameness of things undergoing change, does one have a ground to speak of science with no identity crisis. For science deals with things in motion, or change, and has a major stake in the possibility that its observations and conclusions transcend the truth of the moment.

Working scientists would fully sympathize. They are also the ones who somehow sense that all the sophisticated assertions about science in much of modern philosophy of science can but foment and promote the malaise which is the perceived identity crisis of science. It is that malaise which is resented by working scientists who, time and again, put studies on the history of science on the X-rated lists. History has always been the favorite hunting ground of sceptics and scoffers. They make the most of the keen observation of Chesterton that history is so rich in data that one can make “a case for any course of improvement or retrogression.”

The identity crisis of science, insofar as it is not turned into an ideology by philosophers and historians of science and by scientists who in their old age wax philosophical, is far less serious than it may appear. The reason for this lies in Bertrand Russell’s second remark quoted above. The remark calls attention to a radical limitation of science, of physics in particular. The science of physics knows both enormously much and enormously little about the material world because it can only know its quantitative properties. Science becomes involved in an identity crisis only when it ignores its own method or when it lets philosophers, eager to promote their agnosticism and subjectivism, take over as the spokesmen for science.

Whereas the cure for the identity crisis of science should seem relatively simple, the cure for the identity crisis in religion is a far more serious matter. At any rate, any theologian who speaks about the relation of science and religion should first come clean as to what religion he stands for. The philosopher must do the same and take the consequences. It seems to me that the art of camouflage, to say nothing of mere chameleonship, is not exempt from the commandment that forbids lies. Identity crisis can have its cure only in total commitment to the words: truth will make you free. One must first identify and remove a vast heap of debris in order to see the very complex and nuanced truth about the relation of religion and science and about their ongoing interaction.

Interaction makes sense only between distinct items, factors, or entities. Distinctness, in turn, can be manifold. Some forms of it impose themselves, some others can make impatient the proverbial system makers who are hell bent on fusing everything into everything and setting the stage for intellectual infernos. Chafe as they may, the fundamental domain of is-or plain existence, to say nothing of the all-important domain of should, or the domain of moral values and standards—cannot be reduced to the far more entertaining and practically useful domain of purely quantitative relations, the domain of science. The domain of unitary knowledge, insofar as it means a one-track knowledge, belongs to the domain of Utopia on earth, which is not the domain of angels.

The only kind of unitary knowledge about which man can profitably speculate is the knowledge of angels. Unfortunately, latter-day theologians are most reluctant to face up to that topic.

Yet by discussing it they would be able to tell modern men (who since Descartes have been trying to play the angel) that mere man must implement his cognitive life in terms of mutually irreducible conceptual domains.

To put it in a perhaps facetious, perhaps slightly blasphemous, but certainly blunt way: domains that God has kept separate for man, man should not try to join together into one single domain. The resulting realm will not be a synthesis, not even a fusion, but a confusion. This confusion is all too evident in the manifold symptoms of the real and perceived identity crisis which for some time has been plaguing science as well as religion. I have spoken so much about diagnosis, relatively little about remedies, and almost not at all about a healthy state, because an effective cure heavily depends on making the diagnosis as full and realistic as possible.