THE PLACE OF FAITH IN A WORLD OF FACT

by Emerson W. Shideler

Abstract. The relation of religion and science is presented in terms of the interrelationship of domains generated within a reflexive real world concept by status assignment. The domain of religion is articulated by the concepts of ultimacy, totality, and eternity, which are boundary conditions on all status assignments. The domain of science is a status assignment, that of determining the facts and constraints of the real world, and is articulated by the concepts of empiricism, objectivity, and order. The interrelationship of domains is illustrated by examining the concepts of order, disorder, entropy, evil, freedom, creation, and resurrection.

Shailer Matthews is reported as having once defined an epigram as a half truth so stated as to infuriate those who hold the other half. Following Matthews's great example, I announce the thesis of my presentation at the beginning in a pair of epigrams that will probably succeed only in infuriating all those who hold each half of the truth: Religion is concerned with our status in the world, not with the kind of world it is; science is concerned with the kind of world it is, not with our status in it.

My epigrams do not pretend to define either religion or science or to identify their essence. Neither do they quarantine religion and science from each other by making one the realm of faith and the other the realm of fact. These are the half truths being rejected on both sides. Instead, my epigrams identify a domain for each, and the rest of the paper will be an exegesis of these domains and their possible relationships, with some reference by way of illustration, to the concepts announced as the theme for the conference.

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Domains

The relation of religion and science is a species of a very old problem, at least as old as the wanderings of the Children of Israel in the wilderness, when they became aware of the contrast between their hopes and their actual situation and came complaining to Moses, "We remember the fish we ate in Egypt for nothing, the cucumbers, the melons, the leeks, the onions, and the garlic" (Num. 11:15). Apparently manna did not make as well seasoned a dish as they desired.

If the problem were not still relevant, there would be no place for a journal of religion and science. Traditionally, of course, the problem has been identified as the question of the relation of faith and reason. Current debates over so-called creation science exhibit unresolved issues, and neither the testimony nor the opinion in the recent case in Arkansas have contributed to clarification of the issues despite the eminence of some of the witnesses.[1] Just as Thomas Aquinas was confronted, so are we confronted with an autonomous scientific enterprise that no longer thinks of itself as thinking God's thoughts after him or needs the hypothesis of God.

Attempts to resolve the issues range from the demand to choose between religion and science, as in the controversy between creationism and evolution, through various forms of faith knowledge and knowing in contrast to, and supplemental to, knowledge by reason and empirical experience, to various forms of quarantine which confine religion to the internal, subjective, ultimately irrelevant interior life of persons, while science deals with the real, objective, external world. A somewhat different form of resolution demythologizes the content of religion to make it conform to the findings of science[2] or constructs a cosmic myth culminating in the Omega Point on the foundation of evolution (Teilhard de Chardin [1959] 1961).

I propose that we look in a different direction to domain analysis, with particular attention to status assignment, on the impertinent, if not arrogant suspicion, that the current answers are unsatisfactory because the questions have been badly stated. Domain analysis is a way of getting a different look at the problems, in the hope that we can pose some new questions for the old answers.

Despite the imagery, a domain is not a geographical territory, like a slice of pie. It is a conceptual construction, for domains are not empirical objects. Domain analysis is not an empirical investigation to discover what religious people or scientists do. Without a prior identification of the domains, how would one know whether a given behavior belonged to religion or to science or to some other domain? A domain analysis does not answer metaphysical or ontological questions, although it has

usually been assumed that the goal is to achieve correct answers to these questions.

Concepts

There is an old baseball story, familiar to many of you, which will bear repeating as a way of identifying the philosophical subsoil that supports the procedure I propose. After a particularly close and exciting game, three umpires were relaxing at a bar and reminiscing about the game they had been umpiring. The first umpire said, "Some are balls and some are strikes, and I calls 'em as they are." The second umpire pondered that remark while he took a long pull at his bottle of beer, and then said, "No, some are balls and some are strikes, and I calls 'em as I sees 'em." The third umpire finished his beer, turned to his colleagues and said, "No, some are balls and some are strikes, but they ain't nothin' 'til I calls 'em."

One of the principal ways we appropriate, that is, have access to, understand, and interact with, the real world is by giving things their names. There are some remarks from Confucius (An. XIII, 3), as well as Jewish and Christian scriptures for this. You will remember in the second creation story beginning in the second chapter of Genesis, the account continues, "So out of the ground the Lord God formed every beast of the field and every bird of the air, and brought them to the man to see what he would call them; and whatever the man called every living creature, that was its name" (Gen. 2:19).

Giving things their names can be understood as assigning them their place in the world, assigning them their status (cf. Confucius An. XII, 11). Status is the concept of position within a domain. Balls are different from strikes in the domain of baseball, not so much because they are different things or in this context different proceses or events, but because they have a different status, and it is their differing status that makes them different events. In baseball, at least, a thrown ball is not simply a ball thrown regardless of where it goes, for the different statuses assigned to the alternatives in large measure determine the character of the game.

More broadly, giving things their names can be understood, conceptualized, as the behavior of using concepts to gain access to whatever surrounds us, and the ubiquity of language, both among human beings and in our individual lives, means that conceptualization is one of our most important forms of behavior. The fundamental question thus becomes that of the adequacy of the conceptual schemes we use to gain access to and participate with the real world.

Conceptual adequacy requires coherence. A coherent concept of the real world requires an appropriate conceptual place for the actor, ourselves, whose real world it is. The system must be reflexive to provide a conceptual place in the picture for the one who creates the picture. The alternative is the anomaly of a concept of the world in which the one who conceived the world is merely an incidental and derivative effect. What is needed to make the system work is the person concept, the concept of one whose behavior and history is characterized by intentional actions. We humankind are exemplars of the person concept, but almost certainly not the only instances in the universe. Dolphins probably qualify. I am sure my dog does, and God is the supreme person. Of intentional actions, making status assignments within the real world is central for our purposes here, and many of our behaviors appropriately fit this category, although we are not accustomed to using it to identify our behaviors. In brief, to be a person is to have a certain status, the status of making status assignments, and this is not circular, but necessarily reflexive.

Before we turn to a discussion of the domains of religion and science, the concept of fact must be identified. Whatever else a fact may be, to be a fact is to have a certain status. The popular usage of the concept fact assigns it a truth content, which leads both to the anomaly of "true facts," and to the trivialization of fact to mere information. Facts function as constraints, and this is the clue to the concept of fact. Facts have the status of being constraints. Ordinarily the term constraint means constriction, limitation, boundary, and this is not inappropriate. But constraints are not necessarily barriers. If the rungs of the ladder did not constrain you as you climbed, you would be in big trouble. So, fact as information is likewise constraint. Why else be concerned about getting the facts? The question about facts, therefore, is what kind of specific constraints they are and whether indeed the purported constraint operates as claimed. In other words, the question about facts is what constraints do we acknowledge and observe.

Religion

To generate a domain is to identify the elements that belong to it, and to identify the key concepts that articulate the domain. More precisely, to identify a domain means to specify what qualifies as a fact within that domain. While it may sound a bit strange on first hearing, I would suggest that this job has possibly been done more adequately for science than for religion, because we have tended to identify the domain of religion with certain theistic affirmations and institutional forms. These content definitions so dominate our notions about religion for example that after a fascinating lecture on the healing theory

in Navaho sand painting, which had been billed as a lecture on native American religion, a friend could remark, "But that was a lecture on medicine, not religion." Our Western religious history has so influenced our expectations about the institutional forms religion should take that sometimes anthropologists have had difficulty identifying anything religious in the cultures they studied, because nothing fit their Westernized expectations.

The job of domain identification has been better done for science because we have had to be much more self-conscious about what we were doing, particularly since much of the development of science, at least in Western culture, has occurred in relationship to, if not in competition with, a firmly entrenched religious system. Activities once within the domain of religion are now autonomous activities so that for most of us the problematic area is religion rather than science, and the domain proper to religion threatens to shrink to the vanishing point.

Three concepts articulate the domain of religion: ultimacy, totality, and eternity. Each is a boundary condition. Religion might be defined as the domain of boundary conditions, because boundary conditions impose the necessity for a different kind of move than the pattern of moves appropriate short of the boundary. This meaning for boundary condition differs from the usual sense of setting limits or identifying parameters. In the boundary condition move, one affirms a different status for oneself, and every other object, relationship, process, or state of affairs acquires, is assigned, its proper status in relation to the same boundary concepts.

Ultimacy is the boundary condition on all significance, justification, or valuational sequences. Totality is the boundary condition on all ranges of relevance, contexts, frames of reference. Eternity is not infinity, eternity is the boundary condition on all time-bound perspectives.

We are familiar with boundary condition moves, although they usually have different names.[3] A familiar example appears in esthetics when after a series of explanations of the esthetic virtues of a particular work the admirer finally says, "I like it." The move here is from reasons based in a presumably public realm of esthetic judgments to one's own taste, and however sophisticated or philistine it may appear to be, from this there is no appeal. The fact of this move—some would call it a retreat—may be the reason why we tend to consign esthetic judgments and matters of taste generally, to a private, subjective realm where reason and reasons do not operate. Whether this is a fair assessment of esthetics is a quite different matter and not relevant here. The point is the move at the boundary. For many people religion fits the same pattern and rests on the same move. When one is pressed for warrants

for his affirmations, one finally moves to that unassailable ground, "This is what I believe," and one's belief becomes its own warrant. The move has a theological name, grace, and it is called grace precisely because whatever reasons there may be are secrets hidden in the nature of God, so that all we can say is that God is the answer, and we accept grace with gratitude and without explanation.

The experience which many would consider to be the essence of religion, at least the paradigm religious experience, what Rudolph Otto (1931) calls the Holy, the Numinous, and Mircea Eliade (1959) the Sacred, may be understood as an ultimacy boundary condition move. Awe, fear, fascination, and the sense of the mysterium tremendum, warn that the usual patterns of response to something new will not serve. Probably the classic statement of this boundary condition move comes to us in chapters thirty-eight through forty-two in the book of Job, where God speaks at last to Job: "Where were you when I laid the foundations of the earth?" and there follows one of the magnificent creation hymns in the Bible. Job has the conversation with God he has been demanding, but the confrontation was not what he expected. He had no words to answer God's questions, and the stance he had maintained against his friends would not serve. At the end all he could say was "I had heard of thee by the hearing of the ear, but now my eye sees thee, therefore I despise myself and repent in dust and ashes" (Job 42:5-6).

Ultimacy

The concept of ultimacy is the concept of that which is of the highest value, of most worth, or of the greatest significance, of that beyond which there can be no appeal to anything else for further justification, explication, or being. The ultimate is that which is itself the end of the road because it defines and establishes all other categories. They have their meaning and significance, their status, in relation to the ultimate.

A distinction must be maintained between the concept of ultimacy and a given identification of the ultimate. In most religious traditions, with Buddhism as a possible exception, the ultimate is identified in theistic terms as God, and it may sound blasphemous to suggest that there could be something that lies prior to God. But here we are talking about concepts, not beings, and the conceptual question is what is the quality that makes God really God and not some idol instead. Ultimacy is the answer (Tillich 1957, 10). Paul Tillich sensed this problem in talking about the God beyond God, a phrase intended to underline the distinction between the God we have specified in our concrete description, and the Ground of Being which is beyond that kind of characterization (Tillich 1952, 182-90). H. Richard Niebuhr (1943), in an insuffi-

ciently appreciated book, *Radical Monotheism and Western Culture*, makes the same distinction by insisting that the God we worship, the God we think we know, is inevitably an idol because the God that can thus be concretely characterized, if not domesticated and localized, cannot be the God of radical monotheism, because such gods are not ultimate. In a different phrase, which has almost passed into the language, "ultimate concern," Tillich recognized ultimacy as the crucial element in religion (Tillich 1951, 14; 1957, 78-80). But he blurred the category of ultimacy by turning his attention to the necessity for the object of concern to be genuinely *the* ultimate, else one could not be ultimately concerned (Hamilton 1963, 90-91, 110).

To suggest that God is sexually identifiable by using personal pronouns is to make her/him less than ultimate. We have no neutral singular personal pronouns, only impersonal ones, probably because all the persons we know can properly be sexually differentiated, except for God. Lately women's liberation theology has properly made us aware that the concept Man can no longer be considered generic enough to embrace women as well without further qualification. Why not then simply use impersonal reference to God and be done with it? The answer lies in whether personal or impersonal is the more ultimate category, and it can be shown, I think, that personal is a more ultimate category than impersonal.

The proofs for God, all of which are variants on the cosmological proof, the first-cause argument, gain whatever persuasiveness they have from the underlying category of ultimacy as a boundary condition, and the arguments themselves are a clear, if not obvious, boundary condition move. A self-caused or self-subsistent world seems a contradiction in terms because everything in our world can be referred to a cause other than itself. When that causal chain can be finally anchored in God as the originating, first cause, then one has identified a causal agent about which no further question of cause or basis of derivation is appropriate for one has reached the ultimate, in this case named God. The ultimate is that about which, by definition, no further questions are permissible.

Totality

The logic of the concepts of totality and eternity is similar. The concept of totality is not a picture of everything. That is what a metaphysic might provide by identifying the fundamental stuff that constitutes the whole picture. In contrast, the concept of totality is that any given phenomenon is to be understood, that is, its meaning and significance are given, by its relationship to the totality of things. It is a holistic conception, expressing a whole-part relationship. Any limited, partial,

or circumscribed concern or interest, however legitimate it may be in its own terms, is identified as limited by being set against the concept of totality. Actually most of the time our interests and concerns are quite limited, often because our span of attention stretches no farther, but often enough because we have intentionally excluded anything beyond the immediate and specific goal. I am not suggesting that we abandon carefully controlled, deliberately limited, experimentation. The totality category says instead that whenever we are satisfied that that limited kind of concern is complete and sufficient in itself we have assigned the wrong status to such limited concerns. Without that reminder, warning if you will, we might continue to be satisfied with limited concerns, with small projects that tackle only the immediate problem, with values and objectives that reach no farther than our individual wants, with a science and a religion that are carefully quarantined against each other.

The universalist claims of many traditional religious movements express the category of totality. The ecumenical movement with its thrust toward church union is much more than the desire of ecclesiastical bureaucrats for larger territories to rule. Its real power comes from the recognition of the contradiction between the universal claim of the Gospel and sectarian, even denominational barriers to full fellowship among Christians. Ecumenism turns the category of totality into a theological principle.

The totality boundary condition move is from observer to actor. If the story is to be complete and if totality authentically guides our thought, then we who tell the story are an integral part of the story; and the story must be told in such a way that our participation in it, and responsibility for it, are coherent with the story. In short, the conceptual structure must be fully reflexive. Here is the religious implication of Immanuel Kant's critique of metaphysics, although his concept of rationality prevented him from carrying his criticism far enough. Recent moves in the epistemology of science deal with the same issue (Prigogine 1980).

In this move from observer to actor more happens than just a shift in point of view and a changed perspective, as when a photographer moves sideways a few feet to get a better angle. We are now not only part of our story, we are responsible for it. That shift emphasizes the question central to the religious domain, namely our status in the world. What stance do we take? What kind of actor do we choose to be? In more traditional religious language this is a form of altar call, and response has often been called conversion. When we have made this move, we will be relieved from asking what Arthur Peacocke (1971, 142) has properly called misleading questions about when and how minds can inhabit mechanical brain tissue; and we will no longer be in the

status of the mysterious ghost outside the machine. Here is the basis for challenging reductionist tendencies. A reductionist account does not say the wrong things, because our behavior, for example, can be described as a physiological expression of the operation of gears and levers communicated by electrical and chemical transactions, or as energy degradation. Instead, this way of talking and thinking cannot say enough, and the totality concept makes the gap evident.

Eternity

The third category, the concept of eternity, has the same logic. Eternity, however, is not indefinite time; it is not an infinite extension of any time sequence or series. The concept of eternity does not merely extend any perspective or process indefinitely into the past or interminably into the future. Eternity is not a time concept in the sense that it comes at the end of some series of moments or events, as the concept of infinity more plausibly does. Rather, eternity stands outside time as that perspective from which the whole of time-bound events and experience is to be seen, a perspective from another dimension. This is not a psychological category; it is a logical category. One might argue about whether in fact any person can sufficiently escape from his time/space-bound world to see things from some other perspective. That is certainly the question about the possibility of having any kind of visual experience of a cube rotated through a fourth dimension at right angles to the other three. Whatever the answer to that question, the logical category still stands, and all one has really said is that judgment claiming an eternal perspective is suspect. But now we are talking about infallibility, not logic.

There is a perspective that transcends our local and immediate concerns, from which the pressures and attractions of the instant take a different shape. From it events are seen *sub specie eternitatis*, in Spinoza's words, under the aspect of eternity which stands outside time. Meaning and significance are not determined by, or measured by, just what comes before and after, and still less by the height of excitement or fear in the present moment. In the long run some things do seem not to be very important; in the light of eternity they may not be important at all, and other things are of the greatest importance. Eternity casts the light by which the proper status of things can be discerned.

One of the difficulties with the concept of eternity is that it has been swallowed by the notion of the afterlife. Instead of constituting a perspective from which things are given their appropriate status, it has become a specific content relating to what happens after this earthly span of years is completed. This move makes the concept again a time-bound concept with eternity designating only whatever follows

present existence, presumably indefinitely. Indeed, for many people a firm belief that some kind of existence in eternity follows this one has become the touchstone of true religiousness. They would be unhappy with the meaning of the concept given here. But whenever one says that God is outside of, and not bound by, the time process in which we live, one employs the eternity concept. God, as the Psalmist says, does see with a perspective different from our own, and "a thousand years are but as yesterday when it is past, or as a watch in the night" (Ps. 90:4). Using the concept of eternity, the endeavor to see things *sub specie eternitatis* is not claiming to have God's sight, or to have been given some gift of conceptual levitation that lifts us out of ourselves. Our ordinary activities are brought into the religious domain when the concept of eternity orders their relationship and defines their significance, that is, sets their status.

As with ultimacy and totality, eternity requires a boundary condition move. The move is from an immediate, short term, to a long term, universal view. But it involves more than merely lengthening the time span. It is a move from part to whole, and more especially again from observer to actor, the move from witness to creator. The move is from a time-bound perspective which sees the process unfolding step by step, to a stance outside time where the whole is complete from the beginning. Indeed, the use of the term *beginning* is misleading because the Creator is the context within which the beginning occurs. At our human level, the point can be unpacked by asking when and where a building, a piece of music, a pot, a stage play, begin. No chronological answer is satisfactory, although one could probably date the first drawing, the first notes on music paper, or the hour the clay went on the wheel, but a lot of preparation preceded that moment, and there is still the firing and the glazing, the performance of the music, or the staging of the play. All these stages in the creative process can be stated in time sequence terms, yet the relation of the creator to his work is not of that sequential or serial nature. In his vision the Creator sees the completion before the beginning, and the whole is outside sequential time, for the beginning contains the end.

Creation without eschatology is incomplete, and it is eternity that holds the two together. That we do not often see the end in the beginnings we make, marks one of the differences between ourselves and God, and that often the end is not what we anticipated, and the fulfillment less than we had hoped, even less than we had visioned, marks the difference between our creative powers and God's. In different words, the boundary move is from participant to initiator, a move from third person to first person being, and this can only happen from inside as the status choice we make.

How we choose what moves to make or refrain from making defines our place or our status in the world, and this is the action, the behavior, we have assigned to the domain of religion. The boundary concepts of ultimacy, totality, and eternity confront us with the kinds of boundaries that require a different self-declaration move when we recognize them. Worship, for example, fairly clearly exhibits this process of status affirmation. In worship we assign ourselves a status in relation to whomever or whatever we worship. What this conceptual structure does, therefore, is make explicit a conceptual pattern that not only applies to traditional religious forms, teachings, and institutions, but also provides a vehicle for relating the domain of religion to the domain of science.

Science

In my original epigram, science is concerned with the kind of world we have, that is, with giving us the facts of the case and with identifying the constraints within which we live. It does not follow that getting the facts is a simple matter of gathering them like so many mushrooms, for some may be toadstools. Much of the development of science may be said to be the development of methods to distinguish one from the other. Emphasis properly should be on methods, for the scientific domain is not a museum collection of recorded facts or preserved specimens. Yet the accepted results of scientific endeavor are so massive that information retrieval has spawned a whole technology of its own.

This content view of science takes the same shape as the correlative view of religion as a system of institutions and beliefs. Certainly there is a body of assured results from the several sciences, and we may ignore them at our peril. This success has itself generated another kind of misunderstanding that applies the term *science* or *scientific* as an honorific, so that doctrinal orthodoxy has become enshrined in science also. The point is simply to say that to use the term *science* for what we approve of answers no questions, and likely begs some. Science *per se* is not good, and it is not bad to be unscientific, just risky. There is good science and bad science just as there is good religion and bad religion. In both domains the distinction is methodological.

It is unfortunate that the sciences, particularly the behavioral sciences, have not yet been freed from the model of nineteenth-century physics as the paradigm. This has tended to obscure the fact that there are several sciences, and that although we can speak of the domain of science, it is not a monolithic monochrome. Underlying the variations among the sciences, three concepts may be noted to identify a domain that has larger boundaries than those marked by current academic specialties. The first is that science is empirical; the second is that

science is objective; and the third is that science is systematic. All three may seem too obvious to warrant mention, because we take them for granted. Yet the border skirmishes between the securely anchored sciences and those activities seeking to invade the homeland, or claim the flag of science for themselves, turn on variations of these concepts. More debates seem to turn on questions of system or order than upon the empirical issue, although this has often been used as a weapon against religious claims. More recently objectivity has become subject to reassessment.

The concept of empiricism is not a way of choosing one avenue of knowledge among several; instead it anchors the sciences firmly in the real world. This simply means that not everything that can be talked about belongs in the domain of science, but the question of eligibility is to be settled on its merits in the given case, for the limits of the real world are not predetermined by the term empiricism. Fairies do not seem to me intrinsically any more imaginary than quarks, particularly for one who enjoys Shakespeare's "A Midsummer Night's Dream," but I have no technology to recommend to study them. The empirical anchor in the real world means as well that explanatory principles must be integral to the state of affairs being studied so that they can also be studied by the same methodology. Empiricism has often masked a covert materialism and mechanism that says unless the phenomenon can be captured in mass, quantitative terms, it cannot be considered authentic. But this issue is metaphysical rather than methodological.

Objectivity is closely related to empiricism, and like empiricism, often conceals—when it does not explicitly assert—a realistic and sometimes materialistic metaphysic, and any criticism of objectivity raises the red flag of solipsism. That a consistent solipsist would have no audience and nothing to say to it seems not to occur either to the defenders or to the opponents of this empty notion.

Objectivity may mean no more than—but as much as—that science is honest. Should not all human activities be honest? It is worth noting that we never ask about honesty in animal behavior. The scientific community, much more than other communities, has developed sanctions to maintain the integrity of the scientific enterprise. A principal way of being honest has been to assign a detached, impersonal status to the observer so that the phenomena could speak for themselves uninfluenced by the observer's participation. It is now recognized that this kind of objectivity, rooted in a concept of external relations and possibly a materialist ontology, is impossible to attain or maintain, although the appearance of it can be attained at the gross level. Subjectivity is not the alternative, and objectivity need not be abandoned when the person becomes part of the story and there is still the empirical anchor for scientific work.

Systematic knowledge is the third concept, and this I take to be the function of theory, to be the systematizing pattern. The history of science could be written in terms of shifts from one organizing, ordering principle to another. This may be what Thomas Kuhn means by paradigm shift.

The organizing clue, in different words the explanatory scheme, is expected to accomplish at least two goals. One goal is to provide a coherent pattern of relationships among the elements in the state of affairs being investigated. Ordinarily we are satisfied when we can identify a cause-effect linkage among the factors. This is usually the answer we are looking for when we ask of a loud noise, "What happened?" and often as simple an answer as "The wind blew the door shut," will suffice. But it does suffice because it is shorthand for a very complex, and to some degree already familiar, configuration of a state of affairs in which wind, open windows, swinging doors, and heedless children fit coherently into a world of family relationships, housing codes, barometric pressure, weather, climate, the seasonal orbiting of the earth around the sun, cloud physics, and sun spots, as well as the family dog, who wanted out to chase a squirrel, who was invading the bird feeder that was part of the children's science project at school. Any one of these elements, and others unmentioned, could be taken as the starting point or center for a different configuration of a state of affairs, and perhaps for a specific branch of science, and could serve as some kind of stopping point for the question, "Why?"

Much of the time simple chain linked cause-effect answers will not serve, because we are aware of a much more complex and interrelated world than earlier science envisioned. Yet the expectation for such simple answers persists and continues to cause trouble and confusion about what "scientifically proved" means when a statistical correlation is the best answer available. Similarly, the expectation for a deterministic answer persists, the kind of fixed one-to-one linkage between events exhibited by a billiard ball universe. Celestial mechanics does work, and for many people we cross the boundary between art and science when we attain the mechanical, deterministic monotony of a stamping mill turning out pennies. Things seem much more complex than this, but the possibility of some kind of indeterminacy, either in our knowledge or in the nature of things, opens no gaps to slip God into, and to attempt to do so confuses the domains.

The other goal of systematization is to suggest further questions for exploration. Here is the power of the evolutionary idea. Not only are biological species genetically related and have a history, but everything from automobiles, which started out with buggy whip sockets on the windshield, to civilizations, religions, and the cosmos itself, have evolved and have a history.

Priority

It is now increasingly recognized that science is not the bloodless logic-machine of popular myth, scientific reports, and courses in scientific method. In scientific writing, as elsewhere, the argument and the pattern of the finished paper bear very little resemblance to the actual process by which the data were accumulated, the ideas captured, and the sentences composed. Some ideas have even come in dreams. The range of interests, concerns, and curiosity, as well as inspiration, that stimulate and support the scientist's work represent the person, the human dimension that surrounds science and is not derived from it.

The human activity of being scientific is not part of the formal structure of science itself. How one is a physicist is not part of the subject matter of physics; how one is a biologist is not a topic in biology; indeed, how one is a psychologist is not a topic in psychology. In general, philosophy of science is not a topic in any of the sciences, but belongs to philosophy instead.

By contrast, the human activity of being religious is formally, as well as humanly, a religious question. It is a human question because the choice of status and role, specifically the move at the boundaries of ultimacy, totality, and eternity, is a commitment to a way of life. Formally, status assignment orders the possibilities offered by reality, thus giving to each activity and relationship its importance and meaning. But value, significance, meaning, and authenticity are not given in the nature of things, simply to be read off by observation. Not even the constraints that facts are can be said to be fixed and given independently of their assigned status as facts. Facts do not become such merely by virtue of being; indeed, simply to be is already an assigned status, and probably with the implicit commitment that such things are to be taken seriously.

The two domains of religion and science are thus much more subtly related than as two contiguous territories or parallel activities having some kind of unexplained complementarity. The domain of religion, unlike science, has no specifically religious body of facts. There can be no Christian biology, Christian astronomy, Christian psychology, or even Christian history, although there is a history of Christianity. In other words, the Christian practitioner of any of these arts has no special body of facts because he/she is Christian that is denied to other workers. All facts fall within the domain of the sciences. But this is a status assignment, therefore science itself gains its status by assignment. Moreover, status assignments implicitly, when not explicitly, invoke the boundary concepts of ultimacy, totality, and eternity. Thus all aspects of life, including science, fall appropriately within the domain of religion. The fundamental religious question becomes the

actual ordering of life and its possibilities. The religious question is the kind of ultimacy invested in any order and its factual constraints by the status assigned to one's self and to all other elements and relationships. It is in this context as religious questions that such topics as order, disorder, evil, and entropy should be placed. A few comments will indicate how it would go.

Order

The problem of order consists in the ultimacy and the status we assign to the particular order in question. We are inclined to invest certain orders with special privilege as being the way things really are. Here we have the natural law tradition in both theology and science. The first and second laws of thermodynamics seem to have that status today, and this may be a wise commitment to make. They may describe the way the world really is here and throughout all the vast reaches of the cosmos. But to say this confers on the concept of energy and the laws of thermodynamics a status not unlike the status traditionally reserved for metaphysical principles. It is easy to take that short step across the deep chasm that divides the fact on one side that things can be described in a certain way, that is, set within a particular order, from the conclusion on the other side that that is the way they really are, so that other descriptions are unnecessary, inappropriate, or wrong.

Chaos—if the term is permissable at all—might be defined as that state in which nothing can happen because everything happens: all possibilities, including all contradictions, are simultaneously present so that they cancel each other out. I am not sure that the term *randomness* is strong enough for chaos. From chaos order is generated by the presence of constraints that foreclose some of these possibilities, thereby allowing others to be realized. Disorder occurs when the constraints of a given order are replaced by a different pattern of constraints, as when the impatient loser at chess avoids a checkmate by upsetting the chessboard. From the perspective of the ordered world of the chess game this new state is disorder, with the chess pieces on the floor and the game abandoned. That this new order is disorder in any ultimate sense assumes that certain orders are intrinsic to the nature of things, and for these to change would alter the proper character of the universe. Instead, what is disorderly represents a different order that one rejects or resists in the name of the original pattern.

Whether this is evil depends upon the order one calls good, for evil also is a status assignment. Shifting the constraints to generate a new order, in the old terms disorder, can often be very painful and involve great loss. The affairs of the natural world often seem guided by constraints that evince no awareness of, or concern for, our conve-

nience and survival. To call these events evil, however, seems to me to invest a particular order with more ultimacy than it deserves. I find evil easier to identify in the behavior and intentions of persons who sometimes act from ill will and malice and who often even when intending the good accomplish only its frustration.

Entropy

Entropy raises more complex questions, for in the concept of entropy science describes a world order, in Edwin Hiebert's words, in which "entropy increase corresponds to a decrease in the available energy. The net result is that in all natural processes some energy ends up being unavailable. An equivalent statement would be to say that systems in nature move spontaneously from order to disorder, from lesser to greater randomness, or toward a state of maximum probability" (Hiebert 1966, 1051). The problem is quickly stated in Arthur Peacocke's words: "... science raises questions about the ultimate significance of human life in a universe that will surely obliterate it. However far ahead may be the demise of life in the cosmos, the fact of its inevitability undermines any intelligible grounds for hope being generated from within the purely scientific prospect itself" (Peacocke 1979, 329).

Entropy precipitates a specific and a general question: specifically, what status shall be assigned to entropy? Is it an ultimate constraint, that is, a fact? Second, and more generally, what is the source and basis for meaning? Both questions find answers in what has been said about status assignments. Making entropy an ultimate constraint assigns more finality to our scientific concepts and procedures than past history of science would seem to support, although we do not now have an alternative science. The second question is the more important one: meaning does not come from the pictures we draw or the conceptual schemes we create. Instead, these express meanings, for we declare meanings in the status we assign to ourselves and other things, including entropy.

Lest this seem to be a cavalier dismissal of the facts, it must be said that we do acknowledge certain facts as constraints that cannot be set aside. Many events occur and situations arise that no amount of effort or intending can alter or prevent. For these the concept of status assignment seems little more than conferring an honorific title on cooperating with the inevitable, and determinism lies not far down this road. But to cooperate with the inevitable is nevertheless a choice and a status assignment. If entropy is possibly applicable to the entire universe, then entropy is one of these constraints that cannot be altered. It

stands as the boundary condition on hopes and expectations even though the time when entropy will be complete is unimaginably distant.

At that boundary a new move is required because beyond that boundary there is only the silence from which no echo returns. The move required would seem to be similar to that at the ultimacy boundary. It is the move epitomized in the words of Job when at last he was given the confrontation he demanded, and he replied: "I despise myself and repent in dust and ashes" (Job 42:6). It is the shift away from expectation of fulfillment in continuity of being and explanatory pattern.

The move can lead to at least two different possibilities. One is the mystery of the unknown and unknowable, for there is no answer to the question of what there will be instead when everything is gone, when all motion and change have come to a final halt. Those who say that God is the answer have not given us a piece of information. They instead declare their faith that persons, among whom God is the ultimate Person, who have the power to dream dreams and to construct patterns of explanation that show how everything does finally run down, are really at home in the universe after all, and that our full meaning is not imprisoned in an explanation whose only place for us is as effects of witless causes. This move at the boundary makes the person the context for the mystery rather than the mystery the context that defines the person.

There is another possibility. Entropy, rather than being the destruction and denial of the infinite progress for which the world was made, may be understood instead as the goal toward which the creation moves. There is a mystical tradition very prominent in Buddhism and Hinduism, and found also in Islam, Judaism, and in the Christian mystical tradition of Saint John of the Cross, *The Cloud of Unknowing*, Jacob Boehme, and Thomas Merton, which points in a very different direction than inevitable evolutionary progress to greater complexity. The goal of this kind of mysticism is union between the devotee and the ultimate so that all sense of separateness, all distinction between self and God is obliterated. The goal is that bliss indescribable that comes only when all movement of the self has been absorbed by the ultimate. All questioning ceases, all thought comes to an end, for one has been received into that which transcends all thought, question, or action. No sense of selfhood remains in that ecstasy of absorption into the ultimate. In a slightly different form, all motion ceases and the cycle of rebirths comes to an end in the transcendence of all desire in Nirvana. In Christian terms it is the union of self with God, to know in one's self the full meaning of Jesus' statement, "I and the Father are one"

(Jn. 10:30). This mystical goal sounds very much like a religious statement of entropy, or entropy sounds very much like a purely physical statement of the mystical goal of union. For in both all motion ceases, and the ground upon which any distinctions could be made has been taken up in the bliss of Nirvana.

Creation

If the end is a mystery, so also in the beginning, and the notion of creation by God should be seen as a boundary condition move. The causal sequence either dissolves in infinite regress or it anchors on something outside that sequence, namely God, and in the starker statement, *creatio ex nihilo*. Although it takes the form of a causal statement, God's creation of the world is not at bottom an answer to a question about causes. If it were this, then the next inevitable question, Who made God? would be legitimate instead of ridiculous. The creation doctrine is not an explanation of origins; it is instead a status assignment. To say God created the world does not provide a piece of information that corrects other erroneous notions about where things came from. God's creation of the world declares its—our—value and significance, and this is a different significance than would maintain if the world had had some other source of being and meaning. While the verbal form is causal, God is not to be construed as a Cause among causes, nor as the Cause of all causes. To do so domesticates his being and significance to simply another element among the many in the configurations scientific study presents. In different words, this move means that science and the scientific account of cosmic, biological, and human history are not the context within which God and his creative activity must somehow find residence. Instead, the reverse maintains: God's creation is the significance context within which we assign science its proper status, namely, that by science we discern the constraints with which we must live.

One more comment on creation will bring it into conjunction with the concept of entropy. The apparent status assigned to things, ourselves, by the running down of the universe, that all things end in that silence which has no meaning and which returns no meaning or value, contradicts the status assigned to the world in the creation doctrine. This does not mean that one fact contradicts another fact. It does mean that the boundary condition move we make when confronting the mystery of the beginning is equally legitimate when we face the boundary of the end, whether it be our own individual death or the final winking out of the stars.

Resurrection

This brings us to the most troublesome concept of all claims or purported facts, the teaching of the resurrection of Jesus Christ. No event, not even the Virgin Birth claim, so completely intermixes the two domains as the events celebrated at Easter. Within Christianity the resurrection of Jesus Christ is celebrated as a historical event, invested with the same historical authenticity as the exodus from Egypt celebrated in the Passover of Judaism. As such it clearly falls within the domain of science. To assign it the status fact in the domain of science is a significance assignment which falls in the domain of religion. So far there is nothing new, for the same dual character can be identified for any fact. The difference is that as a scientific fact the resurrection of Jesus Christ is peculiarly intractable, while to withdraw it from the scientific-historical domain by assigning some different status, such as another myth of the dying-rising god, undercuts, if not denies, the claim of Christianity to be a historical religion and not merely an event in history.

The resurrection as a fact in the scientific domain presents a double problem. Since the resurrection is a unique event, no experimental investigation is possible. Historical study of the records is all that remains, and they yield little information. The other kind of difficulty is that there is no category into which the resurrection fits comfortably, and the Shroud of Turin is no help. Saint Paul himself was aware of that problem and tried to turn it by talking about the resurrected spiritual body which replaces the physical body (I Cor. 15:44). Saint Paul's way of talking exposes the problem, namely, to find a way of talking to express the boundary condition move the resurrection claim really is. The irony is that if the resurrection could be anchored in our scientific world view, as apparently the studies of the Shroud of Turin attempt to do, it would no longer be the resurrection at all, but merely another medical tour de force. Neither is it the annual spring renewal of life after the drabness of winter, a renewal appropriately symbolized by the Easter rabbit who lays the colored, hard-boiled eggs.

The resurrection is another creation claim. It represents the same answer to the same question, the same move in the presence of the same boundary condition. In this light the resurrection claim makes still more obvious how we trivialize the creation idea when we construe it merely as the first in a causal series, the answer to the question, Who pushed the start button? Both creation and the resurrection univocally say that meaning, significance, and value are not drawn from a state of affairs. They are given to a state of affairs by a Person as the essential expression of His—our—creativity. Into the desolation of the crucifix-

ion of Jesus Christ comes the declaration that death, this death, is neither the meaning of life nor the fulfillment of God's purposes.

Freedom

Freedom is the other face of creativity. Much could be said of freedom. Perhaps no more needs to be said than to call attention to the anomaly of free beings exercising their creativity to create patterns of explanation to show that they are not free. Neither freedom nor creativity can be construed as derivative. They are to be understood as the power of being from which all else flows. To be creative is to be free, and to be free is to be creative. We have confused both ideas by confining creativity to acts of special genius and freedom to an artificial state of detachment, if not isolation, from surrounding relationships, as if one were free only when no external relationships were present. Freedom is the power of being and is not something to be demonstrated. Freedom is the grounding concept which makes any demonstration possible (von Wright 1974).[4] So also creativity: to be creative is not to be invested with special imaginative genius, it is the active expression of one's being.

One exercise of that power of creativity and freedom generates conceptual structures, interpretive configurations, by which we gain access to our real world. Rather than being a special gift reserved for a few, creativity can appropriately be identified at every level, for every being can become the creative center of a configuration of the world. God also can be understood in the same pattern. By his own being God calls the world into being around himself, and we give meaning to our world and define our status in it by referring it to God's being. Equally correctly all this could be described in terms of the concept of freedom, for it is in freedom that we act to appropriate our world by assigning a proper status to ourselves and to the other elements in the state of affairs which is our real world. One very important status is that of being a fact. What we identify as fact, with the aid of the powerful apparatus we have created in our sciences, becomes the kind of world in which we live and move and have our being.

Faith

Finally we return to the point of our starting. What then of faith in this world of fact? Faith is not to be construed as a content. Faith also is to be construed as an action, the power of being in creative freedom, the kind of action whereby we declare who we are. Faith is the power of being that enables us to give meaning and value to our existence and to the world and its facts. Faith becomes another name for the power of freedom that makes creativity possible.

The place of faith in the world and its facts is unequivocal. It is faith that orders the facts, for let it be noticed that the distinction between facts and their meaning, if you will, the distinction between fact and faith, is not given in the nature of things. It is a distinction that we make, and making it is an act of faith. Whether evolution is the gift of being in freedom, or the rebellion of self-seeking autonomy depends on what order and meaning we set the facts within. Whether entropy is the bliss of peace at last or the cold silence of a dead love depends on how we read the patterns of the world. Whether we humankind are the crown of creation, or a cosmic accident, or fallen angels depends on how we read our destiny in the stars. The title with which I began should be revised; it should read: "The Place of Facts In A World of Faith."

NOTES

1. The case was tried from 7 to 17 December 1981, in the United States District Court of Judge William H. Overton, who delivered his opinion on 4 January 1982, declaring unconstitutional the Arkansas law providing for the teaching of creation science in the public schools.

2. The assurance that science now tells us how the world really goes enabled Rudolf Bultmann confidently to demythologize the New Testament by separating myth from fact. Ralph Burhoe is preeminent among theologians for whom science sets the parameters for what can be said theologically.

3. Paul Tillich (1951, vol. 1, 111-15) in his account of ecstasy is clearly describing a boundary condition move without giving it the correct name because he is concerned with states not behaviors.

4. In his *Causality and Determinism*, Georg von Wright has framed an extended argument to show that determinism could be demonstrated to be the case only if it is false, that is, only if freedom maintains.

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