

The Universe and the University

By Thomas Berry

In recent centuries our scientific studies have given us a new understanding of the universe in its origin and structure, in the vastness of its expansion and in the sequence of its transformations over immense periods of time. The unfortunate thing about our studies of the universe is that they have given us extensive information but no meaningful relation with the universe. We have measurements, equations and a vast number of photos of celestial and earthly forms and phenomena. We have an endless number of research papers and articles. We have written about the universe and about the planet Earth. Yet we remain unimpressed by our discoveries except for an occasional exclamation or momentary excitement. It's a kind of childhood delight that disappears the next day. As Stephen Weinberg says at the end of the most extraordinary description of the first three minutes of the emergent universe, "The more we know about the universe the less point it seems to have." Of course, the industrial entrepreneurs know differently. They see the new powers we now have for extracting profit by ruining this beautiful planet under the plea that we are improving life for us humans.

Although it satisfies our curiosity, brings profit to the avaricious, provides questionable improvement in our human situation and gives us Westerners a sense of making "progress" by moving from a more intimate form of life within the natural life systems into a life controlled by technological mechanisms, we can see no significant meaning in the universe itself. We are at a loss as to how we should relate to the universe in anything other than an exploitative role. This makes a rather profound break in the prior relation of humans with the universe around us.

So far back as we have records, humans have sought the deeper meaning of their existence in a profound ritual integration of human affairs with the grand liturgy of the cosmological order. They experienced a pervasive spiritual continuity with the universe. The course of human affairs was coordinated with the sequence of the seasons, with the diurnal sequence of dawn and sunset, with the phases

We are at a loss
as to how we
should relate
to the universe
in anything other
than an exploitive
role.

of the zodiac. There was a single community of existence. Manifested in the phenomenal world was the mystery of the sacred, the mysterious, the unfathomable beauty and wonder and foreboding whence all things came, by which all things are guided, to which all things returned.

Intimate relations with these deeper forces of the universe established personal security in a dangerous world. When an infant was born within the Omaha Indian tribal peoples of America, the infant was taken out under the sky and presented to the powers of the universe in the four regions with the invocation: "O' ye sun, moon and stars, all ye that move in the heavens, I bid you hear me. Into your midst has come a new life. Consent ye we implore, make its path smooth that it may pass beyond the first hill." Then a similar invocation is made to the powers of the atmosphere to the winds, rain, snow, the thunder and lightning. Then to all those beings that inhabit the Earth, and finally to all those beings that dwell within the Earth.

In this manner the infant is introduced to the entire cosmic order and given its place in the universe. The universe became the primary guardian of the child in its course through life. The entire course of human affairs obtained its meaning through participation in the larger community of existence. Not only in tribal cultures but in the earlier civilizations, in Mesopotamia, in Egypt, in India, in the civilizations of pre-Columbian America, we find this continuity of the human with the cosmological order given ritual expression. The great architectural structures were aligned with the cardinal directions. The winter solstice, the moment of return of the sun from its lowest point in the sky, was a moment of special meaning. Special structures were built to identify and to participate in this event.

Especially in China, the coordination of human affairs with the movement of the natural world required that in the various seasons of the year the emperor move to a different section of the palace, that he wear robes suited to the mystical significance of the season, that appropriate music be played. The concern for this coordination of the human with the universe was such that if winter music were played in summer, cosmological disturbance would occur.

We do not expect anything of this nature from our modern understanding of the universe. Yet there is something missing in our relations with the universe and with the planet Earth that can no longer be regarded as

irrelevant. Nor can it any longer be ignored. Something is terribly wrong in human-Earth relations. Since the university is a primary teacher and guide in government and law, in economics, and in philosophical-religious studies, we might look to the university for some understanding of what is happening and how to deal with the situation. In virtue of its pervasive influence over the guiding personalities of the human community, the university has a unique responsibility. Yet, at present, much university teaching in law and economics has fostered these devastating forces. The university can be considered among the foremost dangers to Earth and to the survival of the human community.

Because of human activity, the integral functioning of the planet has become so disturbed, the biological systems so disrupted, that the Cenozoic period, the last 65 million years in the geo-biological development of the planet, is being terminated. What is happening is not simply a historical change or cultural modification. This is an event at a new order of magnitude. We are changing the chemistry of the planet, a chemistry that has been worked out by nature over some billions of years. We are making the planet toxic in its air and water and soil, so toxic that we have suddenly become aware this is affecting reproductive systems, the genetics of vast numbers of living forms on the planet, including the humans. We are terminating many of the life systems, species extinctions of possibly 5,000 to 10,000 annually according to the biologist E.O. Wilson. Yet only recently has there been any indication in university activities that serious attention is being given to this change in its larger implications as regards its larger origins and its more pervasive consequences in human affairs. The need for a total rethinking of the human process and all the basic institutions of our societies seems to be indicated.

What is needed is a transition from the terminal Cenozoic to an emerging Ecozoic Era, a period when humans would be present to the planet in a mutually enhancing manner. The university in all its disciplines, as well as all human institutions needs to make this move. A transformed university might be turned into our main source of guidance and inspiration in effecting a renewal of the Earth and its basic life-systems. The university should have the critical competence for such

What is needed is a transition from the terminal Cenozoic to an emerging Ecozoic Era, a period when humans would be present to the planet in a mutually enhancing manner.

a comprehensive overview. Of the four great establishments, it is in the best position to do so. The other establishments are more severely impeded—governments are too subservient, corporations are too avaricious, religious establishments are too pious.

In making this transition into the Ecozoic Era, we need to recognize that the universe itself is the primary university...

In making this transition into the Ecozoic Era, we need to recognize that the universe itself is the primary university just as it is the primary law-giver, the primary healer, the primary economy and the primary teacher. The human university is the context in which the universe reflects on and communicates itself to the larger human community along with the guidance in the various professions whereby the human process governs itself in law, heals itself in medicine, feeds and shelters itself in economics, understands itself in philosophy, and relates itself to its ultimate transphenomenal origins and destiny in religions.

A basis of understanding has been laid in the scientific studies of the past few centuries. We might even say that the millions of modern scientists have carried out the longest and most sustained meditation on the universe and the planet Earth that has ever been carried out by humans. This meditation has finally enabled us for the first time to tell the Universe Story from empirical evidence and with a refinement of detail that has never previously been possible. Our basic hope for the future lies in a proper understanding of this story. This story does for the modern world what the Odyssey of Homer did for the Greek world, what the Aeneid of Virgil did for the Roman Empire, what the City of God of Saint Augustine did for the medieval Christian world. In each of these cases, the epic narrative gave an identity and an interpretation of the period and also guided the society in the larger direction of its destiny.

So now we can say that the Universe Story is the epic narrative of the evolutionary sequence. In the context of this narrative, the human attains an understanding of itself and of the other component members of the universe. This story, understood as having a meaningful as well as a measurable aspect from the beginning, is the ordering context of our modern world. Earlier universities in the medieval period sought their ordering principle and basic referent in the literary and humanistic heritage from the classical Mediterranean world, in the Christian faith and in Ptolemaic astronomy.

Later the gravitational principles of Newton formed the basis for cosmological understanding for two centuries. Then came the cosmology of Albert Einstein and Max Planck, relativity and quantum theory, when the human observer was brought back into cosmological understanding. Most important was the discovery begun by James Hutton in the 18th century and continued through the work of Lyell that the universe was an evolving process and much older than we previously thought. This sense of time was immensely extended when the discovery was made that the galaxies are even now moving away from each other and that the universe is continuing the expansion begun at its origin moment.

During these centuries of discovery, the division deepened between the sciences and the humanities. The sciences had become mechanistic in their explanation of the phenomenal world. Such a cosmology was hardly relevant to the humanistic teaching of history and literature and the arts, philosophy and religion; although in terms of being completely rigorous in its critical norms it did affect the entire range of studies. The critical norms of scientific realism and statistical methods of interpretation came to dominate the humanities, also sociology and economics. Even law and medicine were profoundly affected by new critical norms.

To relate human affairs to cosmological moments was not difficult in earlier centuries of tribal cultures and the rise of literate urban civilizations. At that time the universe was considered as expressing a complex of personal powers controlling the sequence of seasonal changes moving in an ever-renewing cycle without beginning or ending. Within this abiding context, coordination with human affairs was quite simple. The issue that we must deal with now is vastly different for we see the universe as an emergent process moving, with no preexisting design, through a sequence of irreversible transformation moments that can be seen in general as passing from lesser to greater complexity in structure and from lesser to greater consciousness.

Because the human in studying the universe seems to be outside the universe being studied, there is a general impression that the human is not an integral member of the universe community but is so superior to the other members of the community that the human is in command of the universe in some manner and not subject to the control of the larger community. This holds, of course, primarily in relation to the Earth. If humans have penetrated

so deeply into the origin of the universe itself and the sequence of its unfolding process, it has penetrated even more extensively into the origin and sequence of geological and biological developments on the Earth.

Through this knowledge, humans have learned how to influence the functioning of the Earth, how to use this functioning for human benefit, for protection against the threatening aspects of the natural systems that govern the basic functioning of the planet, and for enhancement of human life in its basic enjoyment. In the European and American worlds especially there has developed a special sensitivity to the afflictions experienced by humans in the chill of winter and the heat of summer, the illnesses, floods and tornados, starvation, plagues, the death of infants and mothers in child-birth and an unending list of personal and community disasters. After the Great Plague of 1347-1349 in Europe, there developed a certain alienation from the natural world.

The entire surrounding world came to be considered as a threat to the human. A deep hidden rage against the human condition developed in the Western psyche, an unwillingness to accept life under the conditions that life is granted us with its immense and ecstatic delights and yet with afflictions too great to endure. There was a certain deep, hardly conscious, determination to take control of the planet so far as humans were able and to remake the planet in a manner more acceptable to human well-being.

This determination to control is in large measure the explanation of the immense and enduring scientific effort to identify how the universe came into being, the sequence of its emergent unfolding with a special reference to the place of the planet Earth in the entire process, its stages of life development and the role of the human. All of this was considered to be "progress," the magic word in the modern Western world. This achievement was measured by increasing knowledge, but even more by increasing control over the planetary process attained through the knowledge.

A new empirical method of understanding had come into the Western thought tradition in the 16th and 17th centuries. The earlier more philosophical deductive method of reasoning was replaced by the empirical method and that has made all the difference. This new method was more observational, more a question of looking at and listening carefully to the universe and measuring the phenomena observed. After centuries of trying to

understand the universe by deductive reasoning from a few philosophical principles, this new method became enormously successful. We found we could even invent technologies whereby the energies of the universe could be controlled and used with enormous benefit for the human. We could burn the coal to drive our railway engines and our steamships. We could take petroleum from the Earth, then refine it into gasoline to fuel automobiles and airplanes that could carry humans and transport materials vast distances in little time.

We were discovering vaccines to control the spread of disease, learning to monitor our physical health and devise measures to preserve health that were never known previously. We learned to mine the mineral treasures of the Earth, the iron ore, the copper, the silver, the gold, on a scale never before possible. We could now cut the forest for lumber at an amazing rate. We discovered electricity and how it could be produced from hydro-electric plants or by coal or oil burning. More recently we learned how to invade the nuclear structure of the atom and use its enormous energies, and still more recently the genetic structures of life itself.

Everything was at our service. Everything non-human existed for use by the human. The finest achievement of the human was seen as accelerating the amount of natural resources taken from the Earth, speeding up their processing, marketing, and consumption and then disposing of their products in the trash heaps that have come to litter the land.

This use of scientific understanding to plunder the Earth was, however, a distortion of the real purpose of the scientific inquiry which was, despite the inability of scientists to explain themselves, to achieve a more intimate human presence to the planet through a more comprehensive understanding. There was a mystical motivation even though this motivation would generally be denied by the scientists themselves. Deep in the genetic structure of the human there is an overwhelming tendency to bring the personal self into a more intimate presence to the Great Self—the Universe which is the Great Self of every particular being in the universe.

Deep in the
genetic structure
of the human
there is an
overwhelming
tendency to bring
the personal self
into a more
intimate presence
to the Great Self.



The story of the universe from the beginning is the account of how the emergence of the entire universe and the articulation of the individual components of the universe are joined in an absolute unity and mutual dependence. The universe and the individual components of the universe are so intimate that neither the universe, nor the individual components are thinkable separated from each other. So too each of the component members of the universe is unthinkable without all the others. So also no phase in the sequence of irreversible moments of the universe could exist without all the others.

This sense of comprehensive community is the basis of contemporary scientific thinking, just as it was the basis of ancient thinking. The difference is that ancient thinking understood all things existed simultaneously from the beginning and from the beginning moved in an ever-renewing sequence of seasonal cycles, while modern thinking understands the universe as emerging through a long sequence of irreversible transformations whereby it has become what we observe at the present time, a sequence of transformations that is continuing even in the present.

In either case, the human is considered as intimately present to the entire universe, most immediately to planet Earth. The destiny of one is the destiny

Saint Thomas
says that the
integrity of the
universe is
“the ultimate
and noblest
perfection in
things.”

of the other. Each individual reality has its own unique value and significance, but the greatest beauty and the supreme value are found in the coherence of the whole, what Saint Thomas has in mind when he says that the integrity of the universe is “the ultimate and noblest perfection in things.” Also when he says that “the whole universe together participates in and manifests the divine more than any single being whatsoever.”

So too the comprehensive evolutionary process from the beginning and over the vast period of its unfolding is a greater reality than any single phase of this process. So at any moment the entire planet Earth constitutes a single community of existence. The difficulty came about when humans, assuming that the well-being of humans depended on the subjugation and exploitation of the non-human, separated themselves out from the Earth community and took a predatory attitude toward the non-human members of the community.

The university needs to teach these principles of comprehensive community. In literature and the humanities throughout the sequence of cultural developments in the various peoples of the world we find a cosmological context. In the Western world we find this in the Iliad and the Odyssey. The controlling forces in the struggle and in the long journey home involve trans-human cosmological as well as human forces. So too the Commedia of Dante involves the entire cosmological order of the universe. Indeed, the power of literary works or of artistic works generally involves the capacity for relating particular events to the powers of the universe. We find this especially in architecture where human structures are oriented toward and in some manner intimately related to planetary and solar and universe coordinates.

In virtue of the same principles of the comprehensive community of the Earth, Law Schools need to teach that the non-human world has rights that humans are morally and legally obliged to respect. Every being has at least three basic rights: the right to exist, the right to habitat, the right to fulfill its role in the great community of existence. These rights deserve recognition in our jurisprudence. To frame a constitution such as the American constitution that grants rights only to humans is to break the covenant of nature that binds the human and the non-human together in a single planetary community. This covenant is broken especially in the protection granted individual property rights against invasion by other humans while no protection is granted to the property itself against the abuse of the owners. The abuse associated with the ownership of humans by humans has long been recognized and a certain abhorrence has developed toward this practice throughout the contemporary world. The corresponding abuses associated with ownership in land have only recently been recognized because of the deep Western commitment to personal ownership of land with no obligations to the land itself.

Beyond this question of the rights of the non-human world, there is the corresponding obligation of humans to obey the laws of the community as regards its own actions. The biological law is that every species should have opposed species or conditions so that no one species or group of species could overwhelm the other species. This law of limitations is imposed on the nonhuman world through genetic coding. The distinctive quality of the human is that it must do by reason what other species do by instinct under genetic determination. Humans have the capacity by intellectual cunning to

by-pass this law of limitations. This shows up especially in questions of habitat. Humans in recent centuries have taken over the habitat of other species on an extensive scale and have thereby disrupted the larger patterns of inter-species relations.

This inherent limitation on the human in its taking over the habitat of other species can hardly be recognized in Western legal processes since Western jurisprudence has no consciousness of a legal structure based on the integrity of the Earth community as the source, the norm, and the purpose of all legal processes. This subject needs much more extensive consideration within university law schools since the violation of the norms of survival of this larger community leads eventually to severe consequences on the human community.

So in the school of medicine there is need to recognize that the well-being of the land is a precondition for the well-being of humans. There cannot be well humans on a sick planet. Only now is this beginning to be recognized although we still consider that we can overcome this situation with our medical technologies and the fixes that we can devise through our medications and our surgical skills. Finally, recent studies are revealing just how far the toxicity of the planet through the refuse from our factories and industrial centers and from the 60,000 chemicals produced by our chemical industries is affecting not only our present population, but the genetic processes whereby future populations are brought into being. This leads again to the conclusion that we cannot make any segment of the Earth community toxic without affecting the entire community, humans included. Just as there is no human economy apart from the Earth economy so there is no human well-being without the well-being of Earth. Human health is derivative, Earth health is primary.

In the schools of science, the study of physics sets the norm of the scientific endeavor because it is the science most concerned with the universe community. Physics becomes the normative reference in the other sciences. Indeed the sciences, particularly the biological sciences, tend to seek a resolution of their ultimate basis in the science of physics. Here scientists seek their answers the ultimate questions of the structure and functioning of the universe. The difficulty is that physics has taken the reduction of things into their component parts as its basic method, ignoring the fact that the parts are revealed in the wholes even more than the wholes are explained by the

parts. Thus the human produced by the universe reveals the nature of the universe just as the component parts of the universe reveal the nature of the human. So too the human in its intellectual and spiritual activities reveal the nature of the universe. If mechanism and measurement cannot account for the human, they cannot account for the non-human. The capacity for intellectual and spiritual manifestation is obviously a dimension of the universe from the beginning. Otherwise it would be an addendum or an intrusion and thus not truly an integral aspect of the universe. The poetry of William Butler Yeats is a dimension of the universe as well as the atoms or the molecules, the seas or the mountains. Only the integral community of the universe can explain any phase of the universe.

The schools of business administration need to teach that the first principle of a viable economy is to preserve the integral economy of the Earth, and this based on the understanding that the human economy is a subsystem of the Earth economy. Quite obviously an increasing human economy cannot endure if it brings about a declining Earth economy. Thus too the absurdity of a rising gross human product and a declining gross Earth product. All the members of the community must progress if any member is to progress in any substantial manner. There is no such thing as a human economy separate from the Earth economy. There is a single economy of the planet, just as there is single health system.

In the Schools of Education there is a need to recognize that the universe is the primary attraction and primary fulfillment of the human mind. Maria Montessori, one of the most prominent educators of our times, explains in her book, *To Educate the Human Potential*, how the child six years old is already discovering the universe. Even at this age, there is need to present to the child the entire universe as the contextual answer to all questions. Instinctively the child experiencing itself at the center of the universe finds a certain security of mind. The imagination is excited; a largeness of soul, a certain nobility in existence is experienced.

So in the religious sphere the schools of divinity need to teach that the entire universe is the primary sacred community. Humans become sacred by participating in the sacred dimension of this more comprehensive community. So too the universe is the primary revelatory experience. Verbal revelation cannot be primary since it is too abstruse for humans to understand in an immediate way. Interpretation of verbal revelation requires knowledge

of the peculiarities of the language in which it is given. It requires acquaintance with the social mores of the people. It also requires knowledge of the specific historical circumstances in which it is given. On the other hand, the universe in its every aspect reveals immediately the mysterious source whence it comes. We need only observe any natural reality or any natural phenomenon to be struck with the wonder and reverence that we identify as the source of religion.

In this new story of the universe, we also have the basis for new liturgies.

In this new story of the universe, we also have the basis for new liturgies. Just as the transformational moments of the seasonal cycle have been recognized and celebrated throughout the human community and on every continent as the mystical moments when the divine is especially manifested in the physical world, so now the sequence of transformational moments in an emergent universe can be recognized as moments when the divine is especially manifested, moments that should be celebrated in appropriate liturgies.

From such slight sketches as these explaining how the various disciplines of the humanities, law, medicine, science, business administration, education and religion all depend on the intimate relations that each of these bears to the surrounding universe, we can see how the university can neither exist nor function or in manner explain itself except as the context in which the universe and the human community come together in an intelligible presence to each other. In this context the unity of the university can be seen in the wide diversity of its disciplines.

