

Origins

Texts for an Inquiry
3rd Edition

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Cover Illustration:

The Dance of Shiva, a Hindu deity, represents the cosmic forces of creation and destruction. This depiction of Shiva is also called Nataraja, Lord of the Dance, and the Four-Armed One. In his upper right hand, Shiva holds a drum, symbolizing the sound which is the origin of existence. His upper left hand holds fire, the element of the destruction of the world and beginning anew. The third hand is upraised in a gesture that means, "Do not be afraid." The fourth hand points to the uplifted foot, which signifies release from illusion. The other foot dances upon the demon of ignorance. Shiva is surrounded by a halo of flames which are the fires of the energy of the universe. The expression on Shiva's face represents serenity and illumination.

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Preface

Origins has been a collaborative project from the beginning. In 1983 West Virginia State College initiated a revision of general studies requirements based on the concept of a "common learning experience." Examining other models of core curricula, our colleague, David Wohl, pointed out a course entitled "The Universe." Public television series such as Jacob Bronowski's *The Ascent of Man* and Carl Sagan's *Cosmos* provided inspiration that an attempt to synthesize the sciences, humanities, arts, and social sciences might be a worthy educational effort.

When we looked at the college curriculum, however, instead of the interconnectedness of knowledge, we found specialization, fragmentation, and students apparently afflicted with amnesia, unable to apply what they learned in one course to the problems and concepts encountered in another course. The college faculty are similarly isolated, unable to speak to each other across disciplinary boundaries, teaching individually in closed classrooms, where the sound of our own voices is frequently the only thing heard—if listened to at all.

There emerged from hours of intense discussion of the definition of an "educated person" the idea of a course which would give the student a map of the curriculum. *Origins* would be a metacourse, not exactly a survey of surveys, but rather a course in which the subject would be the nature of inquiry itself, the ways in which various parts of the college curriculum address both human knowledge and the human condition. The breadth of the course would require planning and teaching by faculty from many disciplines, but the subject would be what all of us, students and teachers, have in common: the need to understand who we are and where we come from. The theme of *Origins* represents one of the oldest and most basic questions for investigation.

The structure of the course was conceived as a matrix, a concept contributed by Bonnie Dean. The "warp" consists of five themes, represented by the major divisions of this book, while the "weft" crosses the disciplines of science, arts and humanities, and social science. The diverse "texture" includes the readings collected here, works of art and music, and films, as well as appearances by guest faculty in the guise of thinkers, artists, and discoverers of the past, such as Einstein.

Aided by a grant from the Fund for Improvement of Postsecondary Education, which supported planning and development, we taught a pilot section of *Origins* in the fall of 1987. Students were fairly tolerant of our inexperience with a team-teaching format, the occasional evidence of chaos, and the mixture of materials, while some were thrilled to be involved in the educational experiment. The number of readings duplicated and handed out proved bewildering. This anthology should make more apparent the unity and interconnections between the separate "texts" of our inquiry.

Carol C. Eich collected readings into a preliminary manuscript. Arnold M. Hartstein selected a number of the readings and illustrations. Bonnie L. Dean contributed an original essay as well as some of the readings. Arline R. Thorn was general editor and wrote introductory essays and other original materials. All of us were so directly involved in the development of themes and sources that few elements of the course can be attributed to one team member.

The editors wish to thank our colleagues, especially members of the General Education Advisory Faculty, the students, and the administration of West Virginia State College, for their support; Patricia Casdorff, Project Assistant for General Education; and Elizabeth Larsen of Tapestry Press, Ltd. for encouraging us to pursue the publication of this book. We also wish to acknowledge the assistance of the Fund for Improvement of Postsecondary Education.



This edition of *Origins* reflects the ongoing efforts of the originators of the General Education 100 course and the faculty who have joined the teaching teams in the 1990s. Selections have been added, dropped, revised, or moved as our experiences teaching the course and listening to responses from students have affected us. In particular, we have merged what were two themes into one, to strengthen the connections among topics and readings and to enhance the students' encounter with what is, for most,

their first interdisciplinary class. We remain committed to our goals of providing students the opportunity to explore, analyze, and discover for themselves the value of this selection of ideas from different cultures, eras, and disciplines.

A number of faculty have added their scholarship and advice to this edition. Jean Anaporte-Easton, Katherine Harper-Morris, René Hill, Kerry Kilburn, Juris Lidaka, Reidun Ovrebo, and Roland Sevy have joined Bonnie Dean, Carol Eich, and Arnold Hartstein. We are also grateful to Arline Thorn, the text's original editor, for her guidance in preparing the third edition.

Introduction

Arnold M. Hartstein

One of the aims of the General Education curriculum is to expose students to material that is culturally and intellectually diverse. It is hoped that this will stimulate students to see knowledge in terms of relationships that they perhaps had not seen before, and that this will in turn translate into thinking that is both creative and critical.

Origins, the course we call "the core of the core curriculum," illustrates this central objective. The course examines the theme of origins—of the universe, of humankind, of language, for example—through the lenses of various disciplines, such as science, art, literature, and psychology. In both content and arrangement, the course challenges students to learn about the world in different ways. Students who are used to taking biology in the morning and English in the afternoon—in other words, students who expect obvious boundaries between disciplines—may well be confused by the course. But that is a healthy confusion, the kind that may precede real intellectual curiosity and growth.

To further illustrate this concern, let's consider for a moment one of the topics taken up in Origins. The section called "In the Beginning: Origin of the Universe" explores basic questions of time and place: Where are we in the solar system? How long have we been here? What is the meaning of time? How does the calendar inform our sense of life? These questions are approached from various points of view: the story of the World Tree gives students a mythic description of the cosmic landscape; diagrams of the geocentric and heliocentric models of the universe suggest a critical shift in our conception of the solar system; the Myth of Proserpine explains the annual disappearance and return of the spring; and a cycle of seasonal poems illustrates the ways in which writers draw on natural imagery to convey human truths. Beginning, then, with fundamental questions about time and place, the course materials spider-web outwards into myth, science, literature, and other disciplines that are brought in along the way.

From my point of view, one of the most interesting aspects of this particular section is the discussion of the seasons. Ask a West Virginian what he or she likes about the climate here, and you probably will hear about the distinctness of the four seasons. Yet despite this obvious love of the natural cycle, students are generally unaware of how closely life is tied to natural rhythms. In our presentation, which uses the music of Vivaldi's *Four Seasons* as a background, science and poetry serve to demonstrate our relationship to the changes in the natural world. A simple diagram illustrates the tilt of the earth as it sweeps around the sun. Many students are surprised to learn that the earth is closer to the sun during the winter than it is during the summer. A brief discussion of equinox and solstice explains the duration of light and dark. These are simple but fundamental observations that help us focus our attention on one of the basic questions in this section—Where are we at a given moment in time? When we turn to poetry, these scientific "facts" take on figurative significance. The natural imagery—of spring and winter, morning and evening, sunrise and sunset—leads to a discussion of archetypes. It is not difficult for students to see that poets and scientists, to a large extent, deal with the same reality: that spring is not only the season of renewed warmth and natural beauty but also of youth and hope and love; that winter is the season when much of the natural world seems to sleep, and that it also suggests human separation and death.

By the end of this section the simple questions about time and place have taken the class into diverse and fairly sophisticated ideas. We also ask students to reflect, in writing, on the way their own lives relate to their sense of seasonal change. In this way we hope to encourage the notion that learning about the world also means learning about yourself.

Origins Matrix

<i>Theme</i>	<i>Science & Technology</i>	<i>Literature</i>	<i>Art & Music</i>	<i>Social Science</i>	<i>Philosophical Questions</i>	<i>Epistemology</i>
¹ In the Beginning: Origin of the Universe—Space and Time	Hawking, Big Bang Theory; Mapping and dating the earth	Creation myths, Poetry of the Seasons	Creation theme in music and art	Social functions of myth	Why am I here? Are we alone? Where am I in time and space?	Tradition, Empiricism, theory, model
² Birth: Origin and Nature of Life	Darwin, fossils, and DNA	The Great Goddess archetype	The human image and form in the arts	The human family; competition and cooperation	Who am I? Where do we come from?	Archetype, Genealogy, Archaeology
³ Mind: Origin of Consciousness	Cognitive Science; neurological research	Stream-of-consciousness	Surrealism and expressionism	Psychology: Freud, Skinner, Piaget	How do we "know"? How do I know myself?	Mimesis, analysis, interpretation
⁴ Symbol-Making: Origin of Language	Writing and numbers	Symbolism in poetry	Symbolism in art: "primitive" and modern	Symbolism as part of cultural identity	How do we communicate?	Semiology, structure
⁵ Individual and Society: Origin of Citizenship	Science and human destiny	Greek drama	Arts of social consciousness	Freedom, justice, and equality; the social contract; human rights	How do we balance group and individual needs?	Dialectic, critical thinking, holistic viewpoints

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Theme 1

*In the Beginning:
Origin of the Universe—
Space and Time*

To see a World in a Grain of Sand
And a Heaven in a Wild Flower
Hold Infinity in the palm of your hand
And Eternity in an hour.

—William Blake

$$E=MC^2$$

—Albert Einstein

If we do discover a complete theory [of the universe], it should in time be understandable in broad principle by everyone, not just a few scientists. Then we shall all, philosophers, scientists, and just ordinary people, be able to take part in the discussion of the question of why it is that we and the universe exist. If we find the answer to that, it would be the ultimate triumph of human reason—for then we would know the mind of God.

—Stephen Hawking

Every mythology has to do with the wisdom of life as related to a specific culture at a specific time. It integrates the individual into his society and the society into the field of nature. It unites the field of nature with my nature.

—Joseph Campbell

There is no new thing under the sun.

—Ecclesiastes 1:9

Time is but the stream I go a-fishing in . . .
Its thin current slips away, but eternity remains.

—Henry David Thoreau

The past in its entirety is prolonged into the present
and abides there actual and acting.

—Henri Bergson

The great obstacle to discovering the shape of the earth, the continents, and the ocean was not ignorance but the illusion of knowledge.

—Daniel J. Boorstin

In the Beginning

Our inquiry begins with the question, why is there anything at all? How did the vast universe come to be? In the night sky, we see a little neighborhood of the universe, but with telescopes we become aware of other worlds, other galaxies, where, perhaps, creatures similar to us are asking the same question. How could the laws of physics produce intelligent creatures who speculate, tell stories, and ask questions such as, why am I here?

The investigation of the origin of the universe involves a scale of space-time that is both staggeringly large and infinitesimally small. Astronomers, detecting quasars 12 to 14 billion light-years away, are peering at the beginning of time. Using giant accelerators, physicists detect elementary particles with odd names like *quark* and strange-sounding properties called *color*, *spin*, and *charm*.

Ancient peoples attempted to explain the origins of the world without the satellites, rockets, telescopes, and accelerators that extend our senses. Their explanations, what we call myths, are sacred stories by which a people may account for their own origin and place in the world. It is inaccurate to regard as myth as primitive science, for myth is a different form of inquiry. The purpose of myth is not to propose debatable proof for explaining nature but rather to describe the relationship of humankind to the cosmos.

Interestingly, Einstein's famous equation, showing that matter and energy are the same, for some theorists and philosophers leads back to "metaphysical" speculations about energy or spirit pervading all existence. The search for a unified theory, a theory that would bring together electromagnetism, the strong and weak nuclear forces, and gravity, affirms the human need for wholeness and the sense that our life is at one with the universe.

Central to that desire to place ourselves in the universe are the continuing attempts of humans to map their universe and chart their sense of time. Today we can describe earth's history in terms of geological eras, but only in the last century did an accurate knowledge of the age of the earth emerge from the study of earth's rocks and land forms. Several thousand years ago in the Near East, astronomers had a quite accurate map of the stars and the apparent movements of the sun, moon, and planets. But they did not know that earth is a body like the moon and planets. From early astronomy came calendars and the measurement of time, but accurate clocks awaited the machine age.

The Norse myth of the world tree Yggdrasil reflects the cosmology of a flat earth, with a "hell" underground and "heaven" above. In other cosmologies, such as that of Claudius Ptolemy of Alexandria in the first century A.D., the earth was imagined as being round, with the sun, moon, planets, and stars circling it, each in its own orbit or "sphere." However, the idea that earth revolves around the sun was truly "revolutionary," even considered dangerously heretical in fifteenth century Europe.

Calendars are based on the rhythms of nature: the alternation of day and night, the lunar cycle, and the annual journey of earth around its star, which causes the change of the seasons. In agricultural societies, seasonal changes were identified with the cycle of the life and death of vegetation, which in turn was seen as resembling the "seasons" of human life. Great religious festivals coinciding with the cycles of harvest and planting came to symbolize death and resurrection. In modern industrial societies, where lighted cities obscure the stars, where dwellings have heating and cooling systems, and where food comes in packages from the store, our sense of connection to nature may be diluted. Yet we still ask the same questions as our ancestors: who are we? where did we come from? where are we going?

