

Think Pieces

with Philip Hefner, "A Fuller Concept of Evolution—Big Bang to Spirit"; and K. Helmut Reich, "How Could We Get to a More Peaceful and Sustainable Human World Society? The Role of Science and Religion"

A FULLER CONCEPT OF EVOLUTION—BIG BANG TO SPIRIT

by Philip Hefner

Abstract. The concept of evolution challenges us to an ongoing effort to interpret its significance. The challenge has several dimensions: (1) to calm the debate that divides Americans in arguing whether evolution is at odds with biblical traditions; (2) to integrate evolution into one's personal philosophy of life or religious faith; (3) to note the importance of the story form for rendering evolution; and (4) to evaluate evolution as a creation story. Evolution is portrayed as a drama in five acts: cosmic, biological, cultural, moral, and spiritual. The discussion concludes with reflection on humans as co-creators whose task is to become the storytellers of evolution. The author presents this interpretation as a fuller concept of evolution.

Keywords: co-creator; culture; evolution; faith; morality; spirituality; story

NEED FOR A FULLER CONCEPT OF EVOLUTION

Even though the idea of evolution, having been in the air for at least two centuries, is now firmly ensconced in our intellectual repertoire, the challenge to probe its significance and interpret it broadly continues to engage us. My intention is to enter that engagement by elaborating on what I call a fuller concept of evolution. I begin with some basic assumptions.

- (1) Evolution is the subject of intense debates and bitter controversy in the United States today over whether evolution is at odds with biblical traditions. Much of this controversy is misguided, in my opinion, and even ignorant. This has had serious consequences for our schools, for school teachers, as well as for students,

Philip Hefner is Professor of Systematic Theology emeritus, Lutheran School of Theology at Chicago, 5550 S. Shore Drive, Chicago, IL 60637; e-mail: philnevahefner@gmail.com.

and it has poisoned the atmosphere in which science and religion try to carry on a conversation. We need to get beyond this.

- (2) I want to present evolution in a way that can integrate the theory of evolution with our own personal philosophies of life, the way we put our personal worlds together and speak of the meaning of our lives. For those of us who count ourselves as religious, evolution should be integrated into our faith. After all, because evolution is a dominant paradigm for our understanding the world and our own lives, and because it impacts our lives even when we are unaware of it, it would be unhealthy if we could not make evolution a part of our basic outlook on life.
- (3) When we speak of this evolving world, or nature, even in its complexities, relying on a range of sciences, we tend to talk about it in stories. When I first began to think about religion and science, some forty years ago, only philosophers and poets spoke of this world as a vast, interconnected story, beginning with the Big Bang and continuing into the future of the universe. Now scientists themselves do this, and some of them speak in the terms of the eminent biologist E. O. Wilson as the Evolutionary Epic. Under the rubric of “Big History,” this story is being implemented in a growing number of high school and college curricula.¹
- (4) Another way to put this is to say that evolution is not only science, but it is also becoming a creation story—even among scientists. Evolution is the way we talk about the world and our own origins, taking its place alongside other creation stories—for example, the seven days of creation in the first chapter of Genesis or the Hopi Indian story of the Spider Woman leading humans up from the womb of the Earth onto the surface in the Colorado River basin. In this way, we reflect upon our human origins, our relatedness to the earth. The stories include wisdom about how we should live and what our purpose on earth is. Creation stories speak of deep and ultimate things—what we call “God.” Such themes simply defy the limitations of ordinary, literalistic language. Creation stories are stories of what we might call the “depth” of things.
- (5) The moment that we present evolution as a story, we place ourselves into the story. Evolution is not something “out there,” from which we are detached; it is rather very personal; it is our own story.

THE FULLER CONCEPT OF EVOLUTION—A DRAMA IN FIVE ACTS

The “fuller concept of evolution” that I speak of is such a story—to be more specific, a drama in five acts. In this drama, we see the universe, biology, morality, and spirituality unfold before and within us. Evolution is a vast and many-splendored process. We too often try to narrow the idea of evolution; I want to expand it. When we do, we get a clearer picture of how humans fit into evolution. All of us can thus place our own lives into the story of the Epic of Evolution; it can become our worldview. For those of us who believe in God the Creator, this is testimony to how God creates, how evolution is an instrument of God’s creation. Others may feel no need to bring in God.

So much of what we hear in the public discussion sounds as if evolution is the enemy of morality and spirituality. I offer a different voice, and the image of evolution as drama highlights this difference. We most often equate evolution with biology and Charles Darwin. This is not wrong; biology is one of the most important sectors of evolution. But there is more to evolution than biology and Darwin—and the image of the drama will make this clear.

Act I is cosmic, and it is physics and chemistry. In this act, the evolution of the universe begins in the cosmic singularity, the explosion if you will, that we commonly call the Big Bang, the release of energy that brought into being first radiation, and then subatomic particles, atoms, molecules, on a 13-billion-year journey toward galaxies, stars, planets, and this orb we call Earth. This first act of the drama is the longest that has yet taken place. The following acts take up only a fraction of cosmic evolution.

Act II is biological. The second act of this drama is the appearance of life—biological forms on planet Earth—some 11 billion years into evolution’s story. The chemistry of early planet Earth, some 4 billion years old, produced the primordial soup or the hot vents in which many scientists believe there appeared the sensational molecule we call DNA. There are a half-dozen viable hypotheses about the origin of life, including the idea that it originated elsewhere in the universe and came to earth on a meteorite. Life evolved on its own evolutionary journey, in which, 2.5 million years ago, the genus *Homo* appeared; our own species, *Homo sapiens*, came on the scene 200,000 years ago. Darwin is our chief guide here. His concepts of evolution do not necessarily apply to the other acts in the drama of evolution, but they operate in the biological realm. Other acts of the drama have their own laws and principles.

Act III: ontogeny—each of us is an evolutionary process. Biological evolution forms the context in which human beings emerge. Here we focus on ourselves—each of us, from conception through embryo and fetus stage, to birth, full adulthood and death, is a process of evolution. At this point we see something especially remarkable emerge: the human brain. The brain is fully a biological organ, but it is also beyond biology. The brain introduces a dramatic new factor into the chain of events: culture. Up to this point, the process has been genetically programmed. But the brain requires more and enables more inputs from teaching and learning. We call these inputs, culture. Genes alone cannot make a human; culture is also required.

Just as physics and chemistry become biology, biology becomes culture in our brains. Think of genes and culture as two streams of information that flow together to make a human. Genes and culture are not a dualism, fighting each other. They live together in dynamic cooperation. We are both biological and cultural creatures. We are biocultural. Evolution has made us this.

An intermission: how our brain works. Because culture is largely a function of the brain, we do well to note a basic feature of our brains. The neuroscientists, scientists who study the brain, tell us that the human brain is marked by an ability to construct frameworks and interpretations that deal with the data those brains receive so successfully that they enable the human creature to survive as a dominant species. Our brains are not unique in this respect, but they are more highly developed than brains in other species. In doing this, our brains specialize, as anthropologist Solomon Katz said, in “describing what isn’t there.” Medical diagnosis is an example of this work of our brains. We do not experience indigestion or stomach cancer; rather, we experience sensations that we and our doctors interpret by adding what is not there in the original experience, the diagnosis, and our survival depends on how well we describe what isn’t there in our felt experience. We do not experience our world fully, but only in fragments. Our brain works with these fragments and makes a whole picture of them. This is what enables our survival—if the pictures in our brains are adequate.

Act IV: bioculture becomes morality. When we get to culture, we’re talking about a realm of human freedom and decision. In our culture, in contrast to our genes, we think—we make decisions, we correct our mistakes, we innovate, and in fact *construct* our lives as we go along. There can be no culture without values and decisions. In other words, the process has entered the phase we call morality. *Morality enters the evolutionary process* because of our thinking and deciding. Our thinking and deciding can be good or bad, better or worse. We say that some decisions are “shoulds” and

“oughts,” whereas others are “ought-nots.” This is the stuff of morality. In other words, we cannot live in the culture that our brains construct without morality. Morality is not an outside intrusion into the evolutionary process, it is inherent, part and parcel, of the process.

Act V: enter spirituality. Evolution becomes spiritual. What does that mean? How does it happen? We cannot live adequately with only the here and now—what we can see and feel, hear and smell—what lies just in front of us. We never limit ourselves simply to the here and now. We must have visions of what the here and now can become. *This is the spiritual—our senses deal with what is, our mind deals with what can be.* I call this the realm of the spiritual—the values, ideas, symbols, beliefs, stories of something more that go beyond the here and now and tells us what it can become. This is not fantasy; it has connections with the here and now, but goes beyond the actualities of here and now to the possibilities that lie in the future.

My use of the term *spirituality* is informed by the work of the psychologist Mihaly Csikszentmihalyi. He believes that it is not possible to live adequately in the world only with descriptions of what we know empirically. We also require visions of what the empirical present can become, what its possibilities are. When we envision possibilities, Csikszentmihalyi says, we are in the domain of spirituality. He writes:

Spiritual values, spiritual ideas, symbols, beliefs, and instructions for action . . . point to possibilities to which our biological inheritance is not yet sensitive. The sensate deals with what *is*, the spiritual deals with what *could be*. (1991, 17–8)

Spirituality is the focus on the stories and the myths of something more that goes beyond the here and now and tells us what the here and now can become. Take, for example, our interactions with forests. We can imagine several scenarios of what they can become: a fixed quantity of wooden boards and rolls of newsprint for us to dispose of to our profit or a source of biodiversity, the habitat of many species. Which is truer or more adequate? Or are they compatible? To pick another example, consider workers: Are they just a “headcount,” a cost of doing business that needs to be managed carefully, kept as small as possible, or human beings who are a resource for creativity that also require nurturing? Again, think of sick people in hospitals: Do we view them as so many filled beds that need servicing and cost analysis or as persons to be made whole, whether they live or whether they die?

These examples show us clearly how basic this question of what the here and now can become is to the way we view our world. When we say that spirituality is the focus on the stories and the myths and the rituals

of something more that go beyond the here and now, and when we say that they tell us what the here and now can become, we are speaking of the spiritual in terms of the actual world of scientific facts. The values and ideas of the spirit are not enriching unless they speak of the possibilities, the hope of this actual world in which we live. The story of something more (William James) is the story of this world. And we are always struggling with the question of which possibilities are truer or better, and which possibilities we should work to bring about.

Spirituality is closely related to imagination. One of the most impressive depictions of imagination occurs in the 2001 movie *A.I.: Artificial Intelligence*, when one of the forty-first-century robots speaks about humans. By this time, humans have gone the way of the dinosaur, and robots have surpassed them in most respects. Twentieth-century robot boy David has been in hibernation for two millennia, and when he is awakened, he discovers that he is instantly a “treasure,” because he is the only robot in existence who had direct contact with humans. What is so important about humans? The robots tell David: The greatest gift of humans is that they wish for things that do not exist. *Only humans can believe in what is not actual.* This is the seedbed of imagination and spirituality. We can see that spirituality and imagination are essential for the work of our brains as we attempt to make sense of the world around us.

Spirituality and imagination are central to religious faith. The most important thing about our lives is transformation—what we can become, what the world can become. This is what much religious tradition is about.

This is quite a creation story—a journey from Big Bang and genetic evolution to culture, morality, spirituality, and religion. It is all evolution. I have not said anything that is contrary to scientific understandings of evolution. I have interpreted those scientific facts, but not gone against them. This is important, because so often we are told that evolution is in contradiction to the spirit and deep meaning. Evolutionary descriptions of the world can teach us a great deal about what life is about. Christians might echo the tradition of the two books that this evolutionary description of nature can reveal God to us, if we can see it.

What does evolution-as-creation-story tell us about the deeper issues of life, about ultimacy? For now, I focus on four ideas to think about. If you believe in God, think of these as ideas about God and God’s creation:

- (1) *Matter.* Matter, material nature, is important. The drama I have outlined is all about matter, the material world we call nature.
- (2) *Transformation.* This nature that originated in the Big Bang is an amazing thing. For one thing, it is not static. Nature seems to be woven on the loom of continual transformation—never-ending. So, there can be a future. And it is surely amazing and

unpredictable. Thirteen billion years ago, at the Big Bang, could it have been predicted that a planet Earth and human culture would emerge? The future we imagine will be the same: the future is not a prediction but a possibility born from the womb of transformation. It is popular nowadays to speak of this process as one of emergence. This spectacular process is the womb from which we have ourselves emerged.

- (3) *Creativity*. Nature is itself creative. Creativity emerges in the evolutionary process; and this creativity seems to emerge on its own, without external interventions. This creative activity is found even in the realms of physics and chemistry, not to mention in the realms of biology, the brain, and culture. This is called “self-generation” and *autopoeisis*. Those who hold to belief in God may be compelled to say that evolution as transformation and self-generation is apparently the way God created things—a creation that participates in its own creativity.
- (4) *Human nature*. What does this tell about ourselves? We came into being within the natural order, and we will be transformed and fulfilled in this natural order. This leads us to another challenge: interpreting our own human nature in light of the evolutionary creation story I have presented.

HUMANS AS CREATED CO-CREATORS

Created co-creator is a symbol for understanding ourselves in the evolutionary story. The sketch I have drawn of evolution from Big Bang to Spirituality emphasizes first of all our oneness with the creation, our belongingness to those processes that have brought us into being. This picture makes a difference for several reasons. First of all, it puts our giftedness as humans, our extraordinary brains and our self-awareness, solidly within the evolutionary process itself, our language and symbol using, our souls and spirituality. We are not freaks within nature, nor are we set apart over nature and superior to it. Rather we are a development of natural trajectories of evolution. Second, and perhaps even more important, this drama of evolution describes our vocation, our calling within the creation. We have often subscribed to what I call “the Katharine Hepburn philosophy.” You may recall that in the film *The African Queen*, Kate speaks this marvelous line to Humphrey Bogart: “Nature? I always thought that was something we were supposed to transcend.” I think that line is intended as a put-down to nature. If it was in the context of the view of evolution that I have given, it would mean that we do express a transcending moment, but it is nature’s transcendence in us. *We do not transcend nature; nature transcends itself in us*. Our transcendent gifts are intended to play a role in and for the natural order. Much of the time we act as if having a vocation

within and for the creation is too little for us; we say we are destined for greater things, beyond creation. This is the Hepburn philosophy in a rather arrogant mode.

Let me elaborate on this idea of the created co-creator. The twentieth-century French Jesuit paleontologist Pierre Teilhard de Chardin said that humans are “evolution become aware of itself.” That’s a good place to start for understanding the created co-creator. Consciousness and self-awareness have emerged in the development of the human brain, and we know of no other creature that is as complexly self-aware as we are. But self-awareness is just the beginning. We must act, make decisions, and we are aware that some actions are better than others, some are wrong and others are right, some are bad and others are good.

To this we add what we have already noted about the role of imagination in human life that we can imagine worlds that do not even exist. We could never even prepare a meal if we could not imagine a cuisine that does not yet exist until we create it. We not only look at the recipe; we have an idea in our heads of what the recipe can become. We go to school imagining a future for ourselves that does not yet exist, but that drives our actions nevertheless. We imagine a world without war, without HIV/AIDS, without racial discrimination, without death from diabetes and cancer; we make decisions to bring that imagined world into existence. This is not unusual for us, but it is what it means to be human, and we engage in it every day. It is just this kind of imagining that drives our technology, whether it is the Blackberry, the Internet or medical technology, or cloning Dolly the sheep or smart bombs. We must be creatures of imagination if we are to survive as humans.

Robert Kennedy gave classic shape to this truth of imagination and action in his words: “Many people see what is and ask ‘Why?’ We have a vision of what can be and ask ‘Why not?’” We see that creating requires this kind of imaginative vision. We don’t just rise up and start creating. We act according to the dream that guides us, whether that dream is a recipe or Jesus’s ideal of pouring out his life for others.

Being human involves a great deal of creating, imagining new worlds, and constructing those worlds. We know that this imagining and creating are not just something we *do*; it’s what we are. Co-creating is not just our doing; it’s our *being*. The created co-creator symbol recognizes this. In Teilhard’s terms, this is not just us, humans, working for ourselves, but it is the creation, evolution working within us and through us. But we have to fashion an understanding of what the creation is and what as yet unimagined future is most wholesome.

We did not create ourselves as imaginers and creators; we were created by something greater than ourselves, by evolution, and the Epic of Evolution is our story. We are *created*. We do our creating on behalf of that which has created us; we do it for the sake of the creation itself and its evolution. We

have a destiny, a vocation. Those who believe in a creator God will believe that we create for the sake of God's will. Both those whose belief systems do not include a God and those that do can understand that we are created co-creators and evolution's co-creators.

Let us remind ourselves that the vocation I refer to is written into our ontogeny—Act Three of the drama of evolution—in the interaction between genes and culture, biology and learning, nature and nurture, all of which comes together in that remarkable organ, our brains.

The mandate of our vocation is to use our giftedness within nature and on behalf of nature, nature including our fellow humans. This is what being created in the image of God points to: not that we are superior and above nature, but that we are to express the gracious and wholesome presence of God within the natural order. Trying to figure out what it means to express a gracious presence is the most demanding challenge we face—it is a life-or-death challenge. It is so urgent a calling, because we are so dominant a species today that our creative activity impinges on virtually all other planetary systems—too often in a way that is harmful. It is critical that we give attention to our status as created co-creators and the ways in which we conduct our culture of creativity.

Christians can translate this description of the created co-creator into their own belief system. Others who live in different belief systems can integrate the image of the created co-creator into their own philosophies of life.

MORE THAN SCIENCE—EVOLUTION JOINED WITH RELIGION: A ROLE FOR STORYTELLERS

We have reached the point where we see that we need more than science if we are to understand evolution more fully and deal with it adequately. We need more to come to terms with our own human evolution, our own act in the drama of evolution. This is the phase of evolution that we are responsible for—our culture and its impact on all the other domains of evolution. For most people, this “something more” is found in the world's great religious traditions. As I said at the outset, our task is to integrate evolution into our religious worldviews and into our faith.

I see our situation very much as like that of the ancient Hebrews when they constructed their own Epic of Creation stories. Think of the image of weaving—threads go in two directions, called warp and weft. The warp threads run the length of the piece of cloth, and the weft runs across from side to side. The loom holds the warp threads in place, while the weft threads are woven through them. The Hebrews, we know, worked against the background of the Near Eastern cultural traditions of creation stories, which includes the Babylonian, the Egyptian, and others. They did not start from scratch, but rather wove their own distinctive weft through

the threads of the existing cultural warp. The Near Eastern warp from Babylonia emphasized the process of creation as involving violence and conquest of the forces of chaos. The ancient Greeks also emphasized the preexistence of chaos, which God could not conquer, but to which he acquiesced. The Hebrews downplayed both chaos and violence; their weft speaks of a majestically ordered process that proceeds from the will of God. They spoke of the process created on a moral foundation, tempered by divine love and destined for God's final fulfillment.

In our situation today, scientific knowledge is constructing a natural history that stands as warp to our weft, comparable to the role of the common Near Eastern cultures shared by the Hebrews. Our stories will therefore be scientifically informed, but they will include our weft of divine purpose and love.

This is the fuller concept of evolution that I speak of and that I believe it is vital for us to understand. If evolution is a drama in several acts, we can say that we are in the next act—the sixth act in my reckoning. In this act, we are the playwrights, the poets, who must, like the ancient Hebrews, image, describe, and explain a fuller story of evolution.

We are the storytellers of nature, the ones whose ecological niche includes articulating nature's project. In this, we join the work of the poets. It may well be that not only has evolution entered the stage of morality and spirituality, but also the phase of poetry, in which imaginative frameworks of meaning that can interpret nature are essential for nature's continued life. Evolution, mind, and spirit come together as we humans live out our destiny in this world.

This is a fuller concept of evolution whose time has come.

ENDNOTE

1. See http://en.wikipedia.org/wiki/Big_History for university context. Drees, Willem B. (2001). *Creation: From Nothing until Now* is cited as a text. For the high school context, see <http://www.bighistoryproject.com/>. These sites were accessed 01/10/2012.

REFERENCE

- Csikszentmihalyi, Mihaly. 1991. "Consciousness for the Twenty-First Century," *Zygon: Journal of Religion and Science* 26:7–26.