

Chapter 10

Consciousness and Evolution

If being alive is being conscious, then our study of the evolution of life must include the story of consciousness. In this chapter, I will suggest that consciousness is an impetus that is seeking to remain conscious and become more conscious. Sometimes consciousness may choose to become less conscious. But in either case, if life is conscious and consciousness makes choices, evolution is surely affected by those choices. How do we tell this story?

The classical theories of evolution describe evolution in terms of the causal factors of surviving in specific environments in which species survive. Classical theories also describe evolution in terms of the chance factors of mutation within the genes of the evolving species of life. Less attention has been paid to the role of conscious choices in the process of evolution. The facts of evolution can, in very large measure, be explained by causal factors and chance factors, but if consciousness has always been present in living beings, consciousness is also surely part of the explanation of evolution.

We need, therefore, to stretch our imaginations beyond the explanations of causality and chance when we tell the story of evolution. It is a bit too much to say that consciousness, through its evolutionary journey, chooses to develop eyes and ears and a sense of smell in order to be more attentive to its environment. It is bit too much to say that consciousness, through its evolutionary journey, chose to developed legs and arms and fingers in order to be more responsive to its environment. Yet these statements contain a fragment of truth. We need not assume that the whole of evolutionary development was an accident, though much of it certainly was. We need not assume that all of the whole of evolutionary development was environmentally caused, though much of it certainly was. So, let us assume that some aspects of evolutionary development can be and need to be explained by choices, by conscious beings making choices. How can we train our minds to see this more clearly?

Here is a simple illustration. Let us say that some adult birds, for no cause at all, choose to move to a different environment. This move was not accidental. It was chosen. Another environment might have been chosen. Then, this choice had consequences. The descendants that survived and flourished were those that were best adapted to that chosen environment, eating its food, escaping its enemies. At the end of this process we see birds, let us say, with a particular shape of beak. It is too simplistic to say that this species of bird choose their shape of beak. Nevertheless, it is true to say that the choices that adult birds made were part of the explanation for why that particular beak come into being.

Thomas Berry in one of his speeches made this basic point with respect to why we have both horses and bison. Both types of large grass-eating mammals came into being in very similar environments starting with gene pools that were also similar. Why then did some of this gene pool become horses and some of it become bison. Horses became horses, says Berry, for the love of galloping. The bison branch chose butting instead. Both choices worked well for the survival and flourishing of these two branches of life. Now of course these statements of Berry's are a sort of poetry. It was surely true that the pre-horse and the pre-bisen did not know how this basic direction was going to work out. They did not plan it. But choices were made. In the emergence of the horse clan perhaps the females just liked gallopers better than butters. In other words, consciousness does not plan or control its future evolution. Consciousness simply tries experiments in living. Some experiments survive and some do not. But consciousness trying things is choice, not a chance or a cause. And choices matter.

We may also theorize about how much influence the adult experience has on the mutation of genes. Does the trial and error process within adult consciousness have some influence on the probabilities of changes in that animal's genetic structures? This process may look like random chance, but with consciousness being a factor, perhaps useful change has the capacity to be faster than a process of complete randomness. And this is what we often see in the archeological record – rather sudden rapid changes taking place that stretch the theory of random mutations to its breaking point.

Also, it is helpful to point out that “randomness” is just a concept in the human mind. Perfect randomness is not found in the real world. As chaos theory shows us, chaotic processes are never perfectly random but possess some measure of order operating within the apparent chaos. And nowhere in the real world is the factor of chance altogether absent. Perfect determinism, like perfect randomness, is not how our cosmos works. Cause and chance mingle together as modes of explanation of real world process. In the real world of living beings, consciousness also enters the mingle. Uncaused choices do take place, choices that are not even probability determined outcomes. To what extent choice is a factor in evolution remains open for further investigation.

Whatever such investigation shows, three things are true: Our living beings are caused. Our living beings are an accident. And our living beings are chosen. If consciousness is indeed what makes living alive, then choice must play some part of the explanation for how the evolution of life has worked out and how it is still working out. All three modes of explanation are valid. We need not say that having three modes of explanation is inconsistent. We need not insist that one of these modes of explanation must cover our entire view of evolution. When we insist on having the consistency of a single explanation, we are arbitrarily choosing that guess. We are probably choosing it in order to believe that the human mind has a capacity for correspondences with Reality that it does not have. So, let us be more humble. Let us accept the rather obvious truth that the human mind is a finite development and that Reality is only fragmentarily understandable by this amazing and yet puny human capability we call “mind.” Our mind uses cause, chance, and choice because all three of these modes of explanation help us construct our sense of reality and predict outcomes well enough to enhance our survival and well being. It is not necessary for our well-being to have one consistent explanation that covers everything. And any claim that our biology is wired to seek a completely rational explanation of everything is mistaking biological wiring for an arrogant human choice.

In what we call “human history,” choice clearly plays a major part in that “story.” We choose to remember our past in a specific manner. We choose to anticipate our future in a specific manner. These chosen memories and chosen anticipations guide our choices in the living now, choices we make toward those future “nows” that we hope to experience. The evolution of prehuman life took place without this human awareness of choice making (this aware history-making intentionality), nevertheless choices were constantly being made by living beings, and those choices surely affected evolution.

In the evolution of life, the human mind confronts mystery, enigma, uncertainty, the unknowable unknown. Life is an enigma. Consciousness is an enigma, unknown in its fullness, inexhaustible in its mysteriousness. Choice is not reasonable; choice is uncaused, and nonrandom. Choice is arbitrary in a way that no probability numbers can predict with reasonable validity. “Choice” is a word for consciousness in action. Consciousness manifests its presence through choices.

The Origin of Life on Earth

Our scientific community has explored this planet's history deeply enough to have a fairly accurate picture of when life began on this planet. About three and a half billion

years ago, single-celled life forms appeared. These simple cells had no nucleus or any other organelles within their membrane. These single celled life forms are called "prokaryotes."

Over a billion years later, some of these simple cells formed the more complex cells that are called "eukaryotes." Eukaryotes amount to communities of simple cells (prokaryotes-type organelles) within the single membrane enclosure of the Eukaryotes. One of these interior structures, the "nucleus" contains the chromosomes and genes. The familiar amoeba is an illustration of this development. The life of the amoeba has evolved since its first appearance and is still evolving, but as a form of life it is very primitive. If we look at it closely we get some clues as to what life is and how it arose on this planet.

We see its nucleus swimming in a fluid with millions of other simple life forms, each of which now depend for their survival and thriving upon the whole cell. They make their contribution to and they receive their needs from this overall complex organization. At some point in the deep past the ancestry of these many life forms choose to cooperate together rather than live separately. Yes, there were chance factors. Yes, there were causal factors. And we can also visualize that each of these organelles of life within the complex nucleated cells has its own sensitivity and response-ability. Further this sensitivity and response-ability played some role in the coming into being of this complex nucleated cell type.

Biologists have attempted to explain the functioning of such cells in a mechanical manner. They imagine that the genes in the nucleus control the life of the cell like a computer program. Or to use another analogy, we commonly view the genes as the brain of the cell, an unconscious mechanical brain that determines causally all the parts and functions of the cell. But upon more careful observation we find that these genes are turned on or off by a very large number of switch-like entities. The study of these entities is being called "epigenetics." "Epi" means "over." These overlords or "switches" are manyfold larger in number than the genes. Now, this question arises: Who tells these overlords what to do? Who turns these switches on or off? It turns out that the skin or enclosure of the cell contains the sensors and responders of the cell. The skin or membrane of the cell turns out to be the brain-like feature of the cell. This skin takes in the environment and chooses what responses the whole cell needs to make to escape danger and select food. This skin also makes choices about the internal organization of the cell. The evolution of this single celled life form is in part conditioned by the choices made by its skin. And this includes changes made in its genes. So the evolution of the cell is not simply a matter of accidents of gene mutation. Rather the possibilities for gene change are in part selected by the skin's "consciousness" of what is needed for survival and thriving. The skin of the amoeba is alive with choices being made for the entire organism. And each of the tiny sub-cells or organelles that comprise the millions of subparts of this organism is also alive in a similar way. Each has its skin. The life of the amoeba is at least this complex. Indeed, the complexities are difficult even to imagine.

Nevertheless, let us imagine further. About a billion years after the first eukaryotes (amoeba-like beings) came to be, these complex cells began working together in multi cellular organisms. Our human body is an example of that development. The human body has whole cells that specialize in being our skin. Those skin cells communicate our sense of touch to our nervous system and brain. We might say that our brain and nervous system is an evolutionary development of the function played by the skin or membrane of the amoeba. Our skin is part of our brain. Our eyes and ears are part of our brain. The amoeba was blind and deaf; it got by with a sense of touch, and perhaps taste and smell. Clearly the senses of the amoeba were fewer in number than ours and very elemental compared with ours. Our evolution has greatly expanded that aspect of

aliveness we call “sensing the environment.” With this expansion has come an expansion of our consciousness. Or we might say that consciousness in our evolutionary story participated in making choices that made for an increase in consciousness. We can meaningfully theorize that consciousness has the propensity to not only survive and thrive but to expand the intensity of its consciousness.

When the first simple cells joined to make complex nucleated cells, they expanded the intensity of consciousness. When nucleated cells combined to form multicellular organisms, they expanded the intensity of consciousness. The evolution of our species demonstrates not only an expansion of relative brain size, but an expansion in the intensity of our consciousness. We might even speculate that it was the expanding consciousness that kept opting for an expanded brain capacity to handle the thrust of that expanding consciousness. We need to assume that the story of life is at least this complex.

All this means that life forms are not the victim of their genes. Rather, genes are developed to pass along the experiences of conscious living. Genes are not the brains or the consciousness of a cell. Genes are the gonads of the cell. And the evolution of the gonads is in part a product of the choices made by that skin of consciousness. And consciousness is the essence of being alive. Without consciousness an organism or a cell is just a rotting collection of complex compounds.

So how did that very first simple cell come into being? All our attempts to tell this story in a mechanical way do not succeed. All our efforts to create life from unlife have failed and in all likelihood will continue to fail. Some of the complex molecules appearing in living cells might come into being through physical processes, but how can we be content with the explanation that the appearance of an enclosure of such compounds within a skin that is sensitive and responsive was somehow caused by unliving causes. Indeed, we must at least consider that if we are working with only the axioms of physics we have locked our minds into a box of reasoning that can never build a meaningful scenario for the appearance of an living enclosure – a skin that can take in what it needs to produce the ever-more-complex compounds it needs to survive, thrive, reproduce, and evolve. It is not beyond the bounds of plausibility to assume that these complex happenings of living forms required “choice.”

So, we arrive again in the presence of the enigma of consciousness. Even if we cling to the story that a select number of the solids, gases, and fluids on this planet possessed the capacity for springing into life, we are asserting that these materials are strange indeed, more strange than the concepts of physics can express. We can just as easily suggest that consciousness is some sort of sixth force in the structure of cosmos, waiting to happen when conditions are right. Gravity and electromagnetism are also strange forces. Einstein’s explanations of the nature of gravity is still quite baffling to most people. And electromagnetism, of which light is one aspect, is even more baffling. Is light propagated as waves through some kind of medium, or is light a stream of specifically sized energy packets. We have sophisticated mathematical elaborations for both pictures. So what is light really? The scientific approach to truth cannot come up with one image for light. Light is unimaginable in a singular consistent way. Life may be equally unimaginable within the bounds of any rational system that human minds have or can ever create.

Not only is consciousness enigmatic to the human mind, but the scientific approach to truth cannot even observe consciousness directly. Science is restricted to observe only behaviors of and reports from conscious beings. In order to see consciousness in operation, we have to use the contemplative approach to truth. That is, we have to look within our own conscious being and report what we observe in our own inward experience. This is contrary to the objective and public nature of the scientific approach. Contemplative wisdom can be objective in the sense of being honest reporting, but

such objectivity is not the same as public facts that can be tested scientifically. The behaviors and report of consciousness can be public facts, but not consciousness itself. Consciousness has to be inquired into contemplatively by consciousness. At the same time the scientific approach to truth does assume the consciousness of the scientist about whose consciousness the scientist, as scientist, is responsibly silent. And the scientific approach does encounter in the functions and evolution of biological life that unapproachable enigma of consciousness. The scientific knowledge we have about biological life can provoke us conscious beings to imagine an enigmatic presence of a reality we call “consciousness” or “aliveness” – the same consciousness and aliveness that we can contemplate within.

Finally, it is important to say that our having to use both the scientific approach and the contemplative approach to elaborate the presence of consciousness does not mean that Reality has two realms, the material and the spiritual. No, we can quite easily assume that there is only one realm, that we are merely looking at this one realm in two different ways. The material/spiritual duality of realms is a picture in the human mind, a picture that has become exceedingly doubtful in its application to what is Real. This picture has had some meaningful uses in the past, but it has worn out its usefulness in the actual living of millions of people today. Indeed, the very words (“material” and “spiritual”) have become misleading to us. The good news is that the war between the material and the spiritual is over – because there never needed to be a conflict between the truth held in each these two concepts. Humanity had always been experiencing not two realms but two approaches to the same unity. We cannot interpret our so-called spiritual insights as something material, as some materialists attempted to do. And we cannot interpret our so-called material experiences as something spiritual, as some spiritualists attempted to do. That discussion has reached an absolute dead end. In the words “material” and “spiritual” we have two companion illusions fighting each other in an endless and futile battle. From now on we will be creating some confusion whenever we use the words “material” or “spiritual.” We need to assign these words to the shelf of history as parts of an interesting, but now obsolete pattern of thinking.

The Confusion of Intelligent Design

Including consciousness and choice in our theories of evolution does not justify the theories of intelligent design that are being promoted by persons who oppose classical evolutionary thought because it conflicts with a literal interpretation of the two-story metaphorical writing of the biblical heritage. Intelligent-design thinkers have asked us to notice the complexity of the design of biological organisms and therefore to conclude that this complexity is proof that such designs could not have come about by chance occurrences. Such intelligent designs, we are asked to believe, imply the existence of a Final Designer occupying that assumed upper realm. These thinkers are not using the scientific method of thought; they are simply assuming the existence of a Final Designer from their acceptance of some authoritative source.

Let us examine more closely the thinking that is going on in this intelligent-design discussion. First of all, the word “intelligent” is rooted for its meaning in our experience of our own minds or perhaps also the minds of other animals. When we use the word “intelligent” to refer to Reality as a whole, we are using an analogy from our finite experience to speak of something that has infinite scope. All we have in the way of a direct experience of Reality-as-a-Whole (or Reality with a capital “R”) is the experience of sheer Mystery. So when we suggest that Reality has an Intelligent Design we are extrapolating from our puny concepts of “intelligence” and “design” to a realm that can never be tested scientifically or contemplatively. To say that the Infinite Mystery is a Design is a myth. It is story made up by humans. The story may say something, but it is a story and, therefore, must not be taken literally.

Over seven centuries ago Thomas Aquinas used the term “Eternal Law” in virtually the same way that Intelligent Design is being used today. But Thomas admitted that his “Eternal Law” is not accessible to the mind of humanity. He saw that Eternal Law was an analogy applied to an Absolute Mystery. Here is a paraphrase of Thomas’ thinking, “Let us suppose that there is an Eternal King who promulgates an Eternal Law.” This “supposing” is analogical thinking. The only lawfulness or design we have ever grasped with our minds has been a lawfulness or design invented by human beings. Such lawfulness or intelligent design is finite, a finite creation by finite minds. Thomas Aquinas called such finite designs “natural law” – that part of Eternal Law that the human mind can possess and “human law” – designs invented by humans to render social life workable. Final Reality, the “Eternal Law,” is unknown to us. Final Reality is Sheer Mystery to us. All our experiences of design are partial, finite, limited, and changing. And “Eternal Will” is as good or better metaphor than “Eternal Law.”

We are speaking with analogies whenever we speak about Final Reality with such terms as: law, will, mind, intelligent design, spontaneous generation, random madness, or anything else. Reality with a capital “R” is sheer Mystery relative to our human experience. And Reality is infinitely beyond the capacities of our human minds to grasp. We can talk about Reality in stories or myths, but if we do not notice that we are creating myths, we veer into illusion.

If we admit that we are doing analogical thinking, then such thinking is at least honest. And such honesty includes the admission that we are creating a sort of poetry about a Mystery of which we know nothing, rationally speaking. If we speak of knowing God, we have to be pointing to how consciousness experience bumps up against Sheer Mystery. In such a way, our poetry may be expressing some inner realizations of our relations to Sheer Mystery. But our poetry is not science. Our poetry may be a witness to some inner truth, or our poetry may be an expression of some superstition. In either case our poetry is not science; that is, it is not literal truth.

As I will maintain throughout this book, religion has no quarrel with science when science is understood to be the creation of theoretical summations of what can be observed through the human senses by a community of observers. With these “outward” observations the scientist can widen his or her experience of that Final Mysteriousness about which scientific work creates a partial knowledge. But anyone claiming a “discovery” of intelligent design for the whole of Reality is not doing science. Such thinking is “pseudo-science,” that is, it is actually an authoritarian religion seeking justification for itself through the practice of an incompetent view of science.

Consciousness and the Complexity of Life Forms

The complexity of life forms does, however, make implausible the claim that life emerged exclusively by chance mutations. The quickness with which new species have arrived suggests probabilities that are so low that it becomes a stretch to make chance our only means of explanation. Seeing consciousness as a third factor (in addition to cause and chance) in the story of evolution opens our minds to far more plausible explanations of what happened and is still happening in the evolution of living forms.

Life has been and is conscious. It makes choices. And these choices speed the emergence of survivable species. Like chance happenings, choices can create organisms that turn out to be mistakes in terms of survivability. But choice can do better than chance because it is a determination made on the basis of inputs from the environment sorted out in the lived consciousness of adult members of a species.

But however all this may be, my brief journey into evolutionary theory has been taken merely to open our imagination to the rather astonishing implications of seeing consciousness and choice as the very essence of aliveness. We move on now to observe consciousness more closely with the inner eye of contemplation.