

Reviews on Key Issues in Religion and Science

with Bert H. Hodges, “*Language as a Values-Realizing Activity: Caring, Acting, and Perceiving*”; Claudia E. Vanney, “*Is Quantum Indeterminism Real? Theological Implications*”; and Robert A. Segal, “*The Modern Study of Myth and Its Relation to Science*.”

THE MODERN STUDY OF MYTH AND ITS RELATION TO SCIENCE

by Robert A. Segal

Abstract. The history of the modern study of myth can be divided into two main categories: that which sees myth as the primitive counterpart to natural science, itself considered overwhelmingly modern, and that which sees myth as almost anything but the primitive counterpart to natural science. The first category constitutes the nineteenth-century approach to myth. The second category constitutes the twentieth-century approach. Tylor and Frazer epitomize the nineteenth-century view. Malinowski, Eliade, Bultmann, Jonas, Camus, Freud, and Jung epitomize the twentieth-century approach. The question for the twenty-first century is whether myth can be brought back to the physical world, but in a way compatible with science. The case of the myth of Gaia will be considered as a possible way of doing so.

Keywords: explanation; function; myth; origin; science

The biggest change in the modern study of myth has been not in the disciplines studying myth but in the way those disciplines see myth. The disciplines studying myth have continued to be at once the social sciences—anthropology, sociology, psychology, economics, and politics—and the arts—philosophy, religious studies, and literature. The key change has been from the categorization of myth as like natural science to the categorization of myth as unlike science. Either the subject matter of myth has come to be seen as other than the physical world, or the origin and function of myth have come to be seen as other than explanatory. Or both.

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TYLOR AND FRAZER

In the nineteenth century, if one dare generalize, myth was commonly taken to be the primitive counterpart to science, which was assumed to be almost wholly modern. Myth originated and functioned to do for primitive peoples what science now did for moderns: account for all events in the physical world. One could not consistently hold both kinds of explanations, and moderns, who were *defined* as scientific, were logically obliged to abandon myth. The rise of science spelled the death of myth.

The leading exponents of the nineteenth-century view of myth were not scientists but anthropologists. In fact, they are among the founders of the discipline of anthropology: Edward Burnett Tylor, whose main work, *Primitive Culture*, was published in 1871, and James G. Frazer, whose chief work, *The Golden Bough*, was first published in 1890. For Tylor, myth provides knowledge of the world as an end in itself. For Frazer, the knowledge that myth provides is a means to control over the world, above all for securing food. For both Tylor and Frazer, the events explained or affected by myth are ones in the external world, such as rainfall and death, rather than ones in the social world, such as marriage and war. Myth is the primitive counterpart to natural, not social, science. It is the counterpart to biology, chemistry, and physics rather than to anthropology, sociology, psychology, economics, and politics. For Tylor, myth is the exact counterpart to scientific theory; for Frazer, it is the exact counterpart to applied science. Lamentably, neither Tylor nor Frazer wrote much on science. Still, science is the model by which both decipher myth.

For Tylor and Frazer alike, myth is to be categorized as part of religion, and it is religion as a whole, of which for Frazer magic subsequently comes to be a part, that they see as the exact counterpart to science. Myth attributes rain to a decision by a god. Science attributes it to mechanical processes. For Tylor and Frazer, the explanations are incompatible because both are direct. In myth, gods operate not behind or through impersonal forces but in place of them. God does not set meteorological processes in motion but instead likely dumps accumulated buckets of water on a designated spot below. Therefore one cannot stack the mythic explanation atop the scientific explanation, crediting science with the direct explanation and crediting myth with the indirect explanation. Rather, one must choose between them. Because moderns by definition have science, the choice has already been made. They must give up myth, which is not merely outdated but false. Moderns who still cling to myth have failed either to recognize or to concede the incompatibility of it with science. Tylor, though not Frazer, rails against those who categorize myth otherwise—as ethics rather than as explanation.

In the twentieth century myth was reconciled with science. Moderns, while still defined as scientific, could now retain myth. Tylor's and Frazer's theories were spurned on many grounds: for ignoring myths about other

than the physical world, for precluding modern myths, for subsuming myth under religion and thereby precluding secular myths, for reading myth literally, for deeming the function of myth scientific-like, and for deeming myth false.¹ Yet twentieth-century theorists did not reconcile myth with science by challenging science. They did not take “relativize” science, “sociologize” science, make science “masculine,” or make science “mythic.” No less than their nineteenth-century predecessors did they accept science as the reigning explanation of the physical world. Rather, they recharacterized myth. Now myth was compatible with science by the removal of it from competition with science, which meant by the removal of it, partly or more often wholly, from the physical world.

Twentieth-century theories of myth can be divided into three groups. First are those theories which maintain that myth, while still about the world, is not an explanation of the world, in which case its function diverges from that of science. The true function of myth can range from acceptance of the world to escape from the world. The preeminent theorists here are the anthropologist Bronislaw Malinowski and the historian of religions Mircea Eliade. Second are those theories which maintain that myth is not to be read literally, in which case the subject matter of myth is not the physical world. The true subject matter of myth can range from the impact of the physical world on human beings to human beings themselves. The leading theorists here are the New Testament scholar Rudolf Bultmann, the philosopher Hans Jonas, and the existentialist writer Albert Camus. Third and most radical are those theories which maintain both that myth is not an explanation and that myth is not to be read literally. Here fall, above all, Freud and Jung. As much as the two differ from each other, both deem the subject matter of myth the human mind, not the physical world, and deem the function of myth the experience of that mind.²

MALINOWSKI AND ELIADE

For both Malinowski (1926) and Eliade ([1959]1968), myth is, to be sure, an explanation in part, but as only a means to a nonexplanatory end. For Malinowski, that end is to reconcile humans to disease, death, and other brute aspects of the physical world. For Eliade, the end is to carry humans back to the time of the myth, which is always the past, in order to encounter god. Myth is like a magic carpet.

For both Malinowski and Eliade, myth is as much about social phenomena—customs, laws, and institutions—as about physical ones. For Malinowski, myths about social phenomena serve to reconcile members to impositions that they might otherwise reject. The beneficiary is society, not the individual. For Eliade, myths about social phenomena serve the same magic carpet-like function as myths about physical ones. The beneficiary in both cases is the individual.

For Malinowski, myth persuades denizens to defer to, say, ranks in society by pronouncing those ranks long-standing. A myth about the British monarchy would make the institution as ancient as possible, so that to tamper with it would be to tamper with tradition. In England today fox hunting is defended on the grounds that it has long been part of country life. In the case of physical phenomena the beneficiary of myth is the individual. In the case of social phenomena the beneficiary is society itself.

To say that myth traces back the origin of phenomena is equivalent to saying that myth explains those phenomena. When, then, Malinowski, railing against theorists like Tylor, denies that myths are explanations, he is really denying that myths are explanations for their own sake. For explanations they still are, since only by explaining phenomena can they serve their conciliatory function.

Malinowski never makes clear whether moderns as well as primitive peoples have myths. As modern science provides far more control over the physical world than primitive science does, there are surely fewer modern myths than primitive myths of physical phenomena. If there are none, there can still be modern myths of social phenomena. If not even these remain, the place of myth has been taken by ideology.

Insofar as myth for Malinowski deals with the social world, it turns its back on the physical world. But even when myth deals with the physical world, its connection to that world is limited. Myth may explain how flooding arose—a god or a human brought it about—but science, not myth, explains why flooding occurs whenever it does. And science, not myth, says what, if anything, can be done about it. In fact, myth assumes that nothing can be done about it, and myth preaches resigned acceptance of a largely uncontrollable world. Unlike Tylor and Frazer, Malinowski maintains that primitive peoples, not just moderns, have science, however rudimentary their science is. Myth and science are compatible because their functions are distinct. But Malinowski never tries to reconcile the mythic explanation of the origin of physical phenomena like flooding with the scientific explanation of the recurrence of the phenomena, let alone consider that the primitive scientific explanation surely goes beyond recurrence to origin.

Eliade does not seek to reconcile myth with science by interpreting myth symbolically. He reads myth as literally as Tylor does. And for him, as much as for Tylor, myth is an explanation, though, as for Malinowski, of the origin of a phenomenon rather than of its recurrence. Eliade does not try to update traditional myths. But rather than, like Tylor and Frazer, sticking to traditional, explicitly religious myths, he turns to modern, seemingly nonreligious ones. Still, he does not try to reconcile those myths with science. Instead, he appeals to the sheer presence of them to argue for their compatibility with science: if moderns, who for Eliade no less than for Tylor and Frazer are scientific by definition, also have myth, then myth

simply must be compatible with science. For him, in contrast to Tylor and Frazer, moderns cannot be inconsistent.

Eliade's criterion for myth is that a story attribute to its subject a feat so exceptional as to turn its subject into a superhuman figure. Myth describes how, in primeval, "sacred" time, a god or near-god created a phenomenon that continues to exist. That phenomenon can be social *or* natural—for example, marriage or rain. Where outright gods are credited with creating natural phenomena, "culture heroes" are credited with creating social phenomena. In both cases the mythic feat is creation. For Tylor and Frazer, the feat is recurrence.

Yet myth does more than explain, which turns out to be a mere means to an end. The end is regeneration. To hear, to read, and especially to reenact a myth is magically to return to the time when the myth took place, the time of the origin of whatever phenomenon it explains. Myth works like a magic carpet, albeit one that goes in a single direction. In returning one to primordial time, myth reunites one with the gods, for it is then when they are believed to be nearest, as the biblical case of "the Lord God [']s walking in the garden in the cool of the day" typifies (Genesis 3.8). That "reunion" reverses the post-Edenic separation from the gods and renews one spiritually. The ultimate payoff of myth is experiential: encountering divinity. No theory of myth is more rooted in religion than Eliade's.

Clearly, science offers no regenerative function. Science simply explains. Myth, then, can do things that science cannot. Yet Eliade's main argument for the survival of myth is not that it serves a unique function but that it serves that function for moderns as well as for primitive peoples. According to Eliade, moderns fancy themselves scrupulously rational, intellectual, un sentimental, and forward-looking—in short, scientific. Yet even they, maintains Eliade, cannot dispense with myth.

Plays, books, and films are mythic-like because they reveal the existence of another, often earlier world alongside the everyday one—a world of extraordinary figures and events akin to those found in traditional myths. Furthermore, the actions of those figures account for the present state of the everyday world. Most of all, moderns get so absorbed in plays, books, and films that they imagine themselves back in the time of the myth. If even avowed atheists have myth, then surely myth is not merely acceptable to moderns but ineluctable. It is pan-human. Where Tylor and Frazer assume that myth is the victim of the process of secularization, Eliade argues that no real secularization has occurred. Religion and, with it, myth remain, just "camouflaged."

By contrast to Malinowski, Eliade, like Tylor and Frazer, assumes that primitive peoples have just myth and not also science, so that the issue of the compatibility of myth with primitive science does not arise. But unlike Malinowski, Tylor, and Frazer alike, Eliade argues that moderns also have myth. No more than Malinowski does he try to reconcile

myths of the physical world with science. Instead, he appeals to the fact of the coexistence of myth and science for moderns to argue that the two must be compatible. At the same time he concentrates on distinctively modern myths, which are of social rather than physical phenomena and which attribute events to mere, if exceptional, human beings—to culture heroes—rather than to gods. Still, Eliade ventures far beyond Malinowski, not to say Tylor and Frazer, in making myth universal and not merely primitive.

BULTMANN, JONAS, AND CAMUS

Where neither Malinowski nor Eliade challenges Frazer's and especially Tylor's literal reading of myth, Bultmann and Jonas do. While they limit themselves to their specialties, Christianity and Gnosticism, they apply a theory of myth per se—a theory that comes from the early, existentialist phase of the philosophy of Martin Heidegger.

Bultmann and Jonas not only take the meaning of myth from philosophy but also confine themselves to the issue of meaning. Neither the origin nor the function of myth interests them. Like some armchair anthropologists, they treat myth as an autonomous text rather than as part of Christian or Gnostic religion. But unlike Tylor, they do not even speculate from their armchairs about how myth arose or worked.

Bultmann ([1944]1953) acknowledges that, read literally, myth is about the physical world and is incompatible with science. It should therefore rightly be rejected as uncompromisingly as Tylor and Frazer reject it. But unlike both Malinowski and Eliade as well as both Tylor and Frazer, Bultmann proposes reading myth symbolically. In his celebrated, if excruciatingly confusing, phrase myth should be "demythologized," which means not eliminating, or "demythicizing," the mythology but instead extricating the true, existential meaning of that mythology. To seek evidence of an actual worldwide flood, while dismissing the miraculous notion of an ark containing all species, would be to *demythicize* the myth of Noah. To interpret the flood as a symbolic statement about the precariousness of human life would be to *demythologize* the myth.

Demythologized, myth ceases to be about the world itself and turns out to be about the human experience of the world. Demythologized, myth ceases to be an explanation at all and becomes an expression, an expression of what it "feels" like to live in the world. The New Testament, when demythologized, contrasts the alienation from the world felt by those who have not yet found God to the at-homeness in the world felt by those who have found God. Myth ceases to be merely primitive and becomes universal. It ceases to be false and becomes true. It continues to speak to humans because it depicts the eternal human condition. Consistently or not, Bultmann actually still allows for divine intervention in the physical

world, but intervention accepted on the basis of faith and not proof, which science alone supplies.

Like Bultmann, Jonas (1963) seeks to show that ancient myths retain a message for moderns. For Jonas, as for Bultmann, myth read symbolically describes the alienation of humans from the world as well as from their true selves prior to their acceptance of God. Because ancient Gnosticism, unlike mainstream Christianity, sets the soul against the body and sets immateriality against matter, humans remain alienated from the material world and from their bodies even after they have found the true God. That true God can only be found by rejecting the false god of the material world. Gnostics overcome alienation from this world only by transcending the world. Gnostic mythology can continue to speak to moderns because, correctly understood, it addresses not the nature of the world but, like Christian mythology for Bultmann, the nature of the experience of the world. Hence for Jonas, as for Bultmann, myth and science do not compete. Unlike Bultmann, Jonas is not addressing prospective or present-day Gnostics. But like Bultmann, he is addressing those who would dismiss Gnosticism as merely a pre-scientific explanation of the world.

For both Bultmann and Jonas, myth is not a rival to science. Myth is not about the physical world but is about the experience of that world. Myth describes, not explains, that experience. Gnostic myth does explain that world, but the demythologizing of Gnostic myth discards the cosmogony. Want to understand myth? Read Heidegger, not physics.

A more popular example of the reduction of myth to philosophy is to be found in the celebrated interpretation of the Greek myth of Sisyphus by Albert Camus ([1955]1960), the French existentialist writer. Among the figures whom Odysseus encounters in Tartarus, the part of Hades reserved for those who have offended Zeus, is Sisyphus, whose eternal punishment is to have to push a huge stone up a steep hill, only for it to roll back down every time just as he nears the top.

Homer does not disclose what Sisyphus' misdeed was, and ancient authorities differ. Still, for all ancients, Sisyphus was to be pitied. For Camus, he is to be admired. Rather than embodying the fate that awaits those few human beings who dare to defy the gods, Sisyphus symbolizes the fate of all humans, who find themselves condemned to live in a world without gods. Sisyphus is admirable because he accepts the absurdity of human existence, which is less unfair than pointless. Rather than giving up and committing suicide, he toils on, even while fully aware that his every attempt will prove futile. He, not Odysseus, is the true hero, and his is the only kind of heroism that a meaningless, because godless, world allows. Camus uses the myth of Sisyphus to dramatize the human condition.

The myth of Sisyphus was no less a part of a religion than the myths analyzed by Bultmann and Jonas were—and for Bultmann still are. But Camus, just like Bultmann and Jonas, treats myth as an autonomous text, severed from any practicing, institutionalized religion. For all three, myth is a philosophical tale.

LEVI-STRAUSS, FREUD, AND JUNG

The theory of the French anthropologist Claude Lévi-Strauss (1966) might seem to defy my characterization of twentieth-century theories. Myth for him is wholly primitive yet is not thereby merely pre-scientific, let alone anti-scientific. On the contrary, it is fully scientific. He deems the ordering of things the heart of science, and myths organize the world for primitive peoples as thoroughly as modern science does for moderns. The difference between primitive and modern science is only the level at which each works: primitive science works at the observable, sensory level; modern science, at the unobservable, nonsensory level, such as at the microscopic level. For Lévi-Strauss, ordering takes the form of not merely categorizing phenomena but also categorizing them into sets of logical oppositions—for example, into the opposition between food eaten raw and food first cooked. Lévi-Strauss credits myth with not merely presenting these oppositions, which are actually experienced, but also resolving or at least tempering them. Still, the oppositions experienced in the world stem from the projection onto the world of the human mind, which thinks oppositionally. Thus myth is really about the human mind, not about the world, and Lévi-Strauss's theory therefore fits my depiction of twentieth-century theories of myth.

Freud and Jung offer the most extreme departure from Tylor and Frazer. They transform both the literal meaning and the explanatory function of myth. The subject matter of myth—the human unconscious—is as far removed from the outer world as can be. The unconscious is in humans, not the outer world, and is mental, not physical. True, the unconscious projects itself onto the world in the form of gods and heroes and in turn of myths about those gods and heroes. But for Freud and Jung, a psychological analysis of myth begins with the disentangling of myth from the world. If myth is not about the world, its function will scarcely involve the world. If myth stems from the unconscious, its function will scarcely be something as rational as explanation.

Freud and Jung do not merely take for granted that myth is anything but a literal explanation of the physical world. They and their followers rail against Tylor and Frazer and other “nature mythologists,” who either take myth to be about the physical world rather than about the human mind or, worse, turn myths about humans into myths about the physical world.³ If myth is about the world, then its function can readily, if not

quite automatically, be to explain the world. Before Freudians and Jungians can debate each other on the *psychology* of myth, they must show that myth is psychological in nature.

While Freud analyses myths throughout his writings, his main discussion of his key myth, that of Oedipus, fittingly occurs in *The Interpretation of Dreams* ([1913]1953), for he, and Jung as well, parallel myths to dreams. On the surface, or manifest, level the story of Oedipus describes that figure's vain effort to elude the fate that has been imposed on him. Latently, however, Oedipus most wants to do what manifestly he least wants to do. He wants to act out his "Oedipus complex." The manifest, or literal, level of the myth hides the latent, symbolic meaning. On the manifest level Oedipus is the innocent victim of Fate. On the latent level he is the culprit. Rightly understood, the myth depicts not Oedipus' failure to circumvent his ineluctable destiny but his success in fulfilling his fondest desires.

Yet the latent meaning scarcely stops here. For the myth is not ultimately about Oedipus at all. Just as the manifest level, on which Oedipus is the victim, masks a latent one, on which Oedipus is the victimizer, so that level in turn masks an even more latent one, on which the real victimizer is the myth-maker and any reader of the myth grabbed by it. Here the myth is about the fulfillment of the Oedipus complex in the male myth-maker or reader, who identifies himself with Oedipus and through him fulfills his own Oedipus complex. At heart, the myth is not biography but autobiography.

In whom does the Oedipus complex lie? To a degree it lies in all adult males, none of whom has fully outgrown the desires that first arose in childhood. But the complex lies above all in neurotic adult males who are stuck, or fixated, at their Oedipal stage. For many reasons they cannot fulfill their desires directly. Their parents may no longer be alive, or, if alive, may no longer be so intimidating or so alluring. Furthermore, surely not even the most indulgent parents would readily consent. Any son who did succeed would likely get caught and punished. And the guilt felt for having killed the father whom one loved as much as hated, and for having forced oneself upon a resisting mother, would be overwhelming. But the biggest obstacle to the enactment of the complex is more fundamental. One does not know that the complex exists. It has been repressed.

Under these circumstances myth provides the ideal kind of fulfillment. True, the outer layers of the myth hide its true meaning and thereby block fulfillment, but they simultaneously reveal that true meaning and thereby provide fulfillment. After all, on even the literal level Oedipus does kill his father and does have sex with his mother. He simply does so unintentionally. If on the next level it is still Oedipus rather than the myth-maker or reader who acts, the action is now intentional. The level above therefore partly reveals, even as it partly hides, the meaning below. The true meaning always lies at the level below but is always conveyed by

the level above. By identifying themselves with Oedipus, neurotic adult males secure a partial fulfillment of their own lingering Oedipal desires, but without becoming conscious of those desires. Myth thus constitutes a compromise between the side of oneself that wants the desires satisfied outright and the side that does not even want to know they exist. For Freud, myth functions *through* its meaning: myth vents Oedipal desires by presenting a story in which, symbolically, they are enacted.

In all these ways myths parallel dreams, which, like science for Tylor and Frazer, provide the model by which Freud and Jung analyze myths. To be sure, there are differences between myths and dreams. Where dreams are private, myths are public. Where for Freud myths are limited to neurotics, dreams are universal. But for Freud and Jung alike the similarities are more significant.

Where for Freud myth is limited to what Jungians call the first half of life, for Jung (1967) it involves the second half even more. For Freud, myth involves relations with parents and instincts. For Jung, myth involves, in addition, relations with the unconscious. In the first half of life the goal is separation not only from parents and antisocial instincts but even more from the unconscious.

For Freud, the unconscious is the product of the repression of instincts. For Jung, it is inherited rather than created and includes far more than repressed instincts. Independence of the Jungian unconscious therefore means more than independence of instincts. It means the formation of consciousness, the object of which in the first half of life is the external world.

The goal of the uniquely Jungian second half of life is likewise consciousness, but now consciousness of the Jungian unconscious rather than of the external world. One must return to the unconscious, from which one has invariably become severed. But the aim is not thereby to sever one's ties to the external world. The aim is still to return in turn to the external world. The ideal is a balance between consciousness of the external world and consciousness of the unconscious. The aim of the second half of life is to supplement, not abandon, the achievements of the first half. The function of myth in the second half of life is to reconnect one with the unconscious.

Just as classical Freudian problems involve the failure to establish oneself externally, so distinctively Jungian problems involve the failure to reestablish oneself internally. Freudian problems stem from excessive attachment to the world of childhood. Jungian problems stem from excessive attachment to the world one enters upon breaking free of the childhood world: the external world. To be disconnected from the internal world is to feel empty and lost.

For Freud and Jung, as for Malinowski, Eliade, Bultmann, Jonas, and Camus, myth must be recharacterized to be understood. For Freud and Jung, it should be seen as the expression of the human mind, just incorrectly

cast onto the external world, the world of science. Because Malinowski and Eliade read myth literally, they do not translate myth into other terms. But they do transform the function of myth. Because Freud, Jung, Bultmann, Jonas, and Camus read myth symbolically, they thereby translate myth—as well as, for Freud and Jung, transforming the function of myth.

BRINGING MYTH BACK TO THE WORLD

Where theorists of the nineteenth century assumed that myth could not be dislodged from the world and therefore could not be saved from science, theorists of the twentieth century saved myth from science either by removing myth altogether from the world or by removing it as an explanation of the world. The question for the twenty-first century is whether myth can be returned to the world—but in a way still compatible with science. The postmodern dismissal of the authority of science, evinced in the labeling of science as itself mythic, cheapens both myth and science. Twentieth-century theorizing commendably sought to accommodate myth *to* science rather than to spurn science in the name of myth. I want to consider the worship of the Earth, or Gaia, as one possible way of bringing together myth with science.

Gaia is the Greek name for one of the first four gods in Hesiod's *Theogony*, the Greek counterpart to the Genesis creation myths (1.1-2.4a and 2.4b-3.24). In the *Theogony*, in contrast to Genesis, gods come into existence rather than, as in Genesis, are presupposed. Hence the title of the work: the "genesis of gods." Where in Genesis God is separate from the world he creates—he creates *by* himself but not *out of* himself—in the *Theogony* gods are identical with the forces of nature after which their very names come.⁴ The creation of gods is thus simultaneously the creation of the world. More precisely, the initial four gods—Chaos, Gaia, Tartarus, and Eros—are identical with the forces after which they are named. Where these gods come from, we are never told. Creation myths often begin *in medias res*.

Soon after their creation, however, these four animated forces of nature become full-fledged personalities. Gaia at first bears a child, Ouranos, parthenogenetically, but she then mates with her son to bear the twelve Titans. And next she conspires with her youngest, the Titan Kronos, to castrate his father, Ouranos, when Ouranos next comes to have sex with his mother. Gaia is now a thinking, deliberative figure, whether or not physically separate from the Earth. One can, then, characterize her as a god.

Subsequent generations of gods are separate from the forces that they control. Still later generations of gods, together with depictions of them by later Greek authors, are so human as to be divine only by degree and not kind. Moreover, gods acquire responsibilities far beyond those of the

physical world. For example, Zeus is the god of justice, strangers, and suppliants as well as of the sky and the weather. And he presides over his fellow Olympians as their king. Homeric religion, which is commonly taken to be the epitome of paganism, is much more than the worship of nature, even if what is called contemporary paganism is not. And in most classical myths, natural occurrences, such as rainfall, are incidental to the story, which is at least as much about the human world as about the natural one.

The view of the Earth or indeed of the cosmos as a living entity is ancient. It is found not just in popular Greek religion but also in Greek philosophy, not least in Plato, for whom the world “might be in the fullest measure a living being whole and complete, of complete parts; next, . . . might be single, nothing being left over, out of which another might come into being; and moreover . . . might be free from age and sickness” (*Timaeus* 32D-33A [Cornford translation 1937, 52]).

Modern science has “killed” the notion of a living earth. As the common, popular explanation of events in the physical world, modern science has displaced religion and thereby myth. Both religion and myth have had to undergo retraining to survive. For both, retraining has meant surrendering the job of explaining the physical world to science and doing something else or meaning something else. Thus Dionysus ceased to be taken as a god and became a symbol—either of something in the world, and not just of wine, or of something in humans, as for Nietzsche, a twentieth-century theorist ahead of his time. Myth has frequently been decoupled from religion and has survived in secular form.

THE GAIA HYPOTHESIS

The figures who created the concept of Gaia were the nineteenth-century Scottish geologist James Hutton and, much more, the present-day multidisciplinary English scientist James Lovelock. Both assume that the concept is outright scientific and not just compatible with science.

Noting the contrast between the absence of life on Mars and the presence of life on Earth, Lovelock came to maintain that “the only feasible explanation of the Earth’s highly improbable atmosphere was that it was being manipulated on a day-to-day basis from the surface, and that the manipulator was life itself” (Lovelock 1979, 6). The Gaia hypothesis is the view of Earth “as a complex entity involving the Earth’s biosphere, atmosphere, oceans, and soil; the totality constituting a feedback or cybernetic system which seeks an optimal physical and chemical environment for life on this planet” (Lovelock 1979, 10). In other words, the Earth is a self-regulating mechanism.

In *Gaia* (1979), his first book on the subject, Lovelock writes of the Earth in purposive, or teleological, terms. For example:

We are in fact back at the sink looking for a salt-removal process which must be in some way linked with the biology of the sea if our belief in the intervention of Gaia is well-founded. (Lovelock 1979, 85)

What are we to make of volcanic activity and continental drift? Both are consequences of the inner motions of our planet, but could Gaia also be at work? (Lovelock 1979, 91)

If Gaia has modified the sea floor, it has been done by exploiting a natural tendency and turning it to her own advantage. (Lovelock 1979, 92)

In his introduction Lovelock puts the teleological approach heartfully. The Gaia hypothesis, he tells us, is “an alternative to that equally depressing picture of our planet as a demented spaceship, forever travelling, driverless and purposeless, around an inner circle of the sun” (Lovelock 1979, 11).

Yet Lovelock comes to assert that he has been misunderstood. Now he maintains that “Gaia is an evolving system. . . . It is an ‘emergent domain’ In this system, the self-regulation of climate and chemical composition are entirely automatic. Self-regulation emerges as the system evolves. No foresight, planning, or teleology (suggestion of designer or purpose in nature) is involved” (Lovelock 2005, 12). But then what is left of the Gaia hypothesis, which he later calls the “Gaia theory”?

Lovelock switches to a medical analogy. The Earth is now like an ailing patient, who needs human doctors to save it. Lovelock retains the notion of the Earth as alive, but the earth is no longer a thinking, deliberative entity, let alone one able to cure itself:

The notion of a planet visiting the doctor is odd. It assumes for a start that the planet—in this case the Earth—is capable of being ill, and so is in some sense alive. It also assumes that there is a suitable doctor to visit—one with the knowledge and experience of planetary maladies to give sound advice. A physician, in fact, trained planetary medicine. It is with the need for such a practice of planetary medicine that this book is concerned. (Lovelock 2005, 10)⁵

In later books Lovelock denies that the Earth is even alive the way humans are alive.

Lovelock’s “retraction” aside, there are other objections to the Gaia hypothesis. The most straightforward objection to the earth as a living thing is that it does not reproduce.⁶ The objection to the earth as a living thing that behaves teleologically is that the seeming purposiveness of the earth is explicable otherwise.

In *Unweaving the Rainbow* (1998) Richard Dawkins put the objections to a unified earth with characteristic bluntness. There is cooperation among genes, but only within a species. There is no “universal cooperation,” which is what a unified earth would require.

The forest may seem to work like “a single harmonious whole, with each unit pulling for the benefit of all, every tree and every soil mite, even every predator and every parasite, playing its part in one big, happy family” (Dawkins 1998, 221). But in actuality, the forest is “an anarchistic federation of selfish genes, each selected as being good at surviving within its own gene pool against the background of the environment provided by all the others” (Dawkins 1998, 221–22). Even if the behavior of one species abets that of others, the consequence is unintended.

Because living things do not intend to help the planet, “we are left with the conclusion that individuals work for Gaia only when it suits them to do so—so why bother to bring Gaia into the discussion? We are better off thinking about genes, which are the real, self-replicating units of natural selection” (Dawkins 1998, 224).⁷

If the Earth is not a unified personality, then it is not a god. Any stories about the Earth are not myths, and the “worship” of Gaia does not bring myth back to the world. The Gaia hypothesis or theory hardly, then, reconciles myth with science and so hardly offers a new approach to the relationship between myth and science. While there may be other ways of bringing myth and science together, the case of Gaia is not one. The choices for theorists of myth remain either that of the nineteenth century or that of the twentieth.

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Robert A. Segal. 2008. “Bringing Myth Back to the World: The Future of Myth in Jungian Psychology.” In *Dreaming the Myth Onwards*, ed. Lucy Huskinson, 91–105. London and New York: Routledge.

Robert A. Segal. 2012. “Does the Gaia Hypothesis Bring Myth Back to the World?” In *Science and the World’s Religions*, ed. Patrick McNamara and Wesley J. Wildman, vol. 1, 117–49. Santa Barbara, CA: Praeger/ABC-CLIO.

NOTES

1. To be exact, Frazer, though never Tylor, also sometimes read myth symbolically—as a description, not an explanation, of the death and rebirth of crops. Here the death and rebirth of the god of vegetation are a mere metaphor for the course of the crops themselves.

2. On the course of modern theories of myth, see Segal 1999, 2015.

3. On Freud’s and Jung’s rejection of the views of Tylor and Frazer and other nature mythologists, see Segal 2003, 607–13; 2008, 94–100. On myth for Jung as possibly about the outer world, see Segal 2008, 100–03.

4. To be sure, in the second biblical creation myth God breathes into Adam to give him life, but the rest of Adam comes from dust, not from God.

5. The philosopher Mary Midgley calls a “myth” the version of the Gaia hypothesis which trusts that the Earth will save itself. By “myth” she understands blind faith and anything but a scientific explanation of the origin or operation of the Earth. She pits myth against science. For

her, humans must help save the Earth. See Midgley [1985]2002, 72–75; [2001]2006, 237–59; 2005, 209–10.

6. Reproduction is for Darwin the key to natural selection, which he and in turn Dawkins and other evolutionists set against design.

7. Richard Lewontin sees the “holism” of the Gaia hypothesis as a reaction to the atomism of modern science. Lewontin seeks a middle ground between atomism and the yearning “to return to a [pre-scientific] description of the world as an indissoluble whole.” See Lewontin [1991]1993, 14–15.

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