Articles

THE MYTHIC POTENTIAL OF EVOLUTION

by Mihaly Csikszentmihalyi

Abstract. This article focuses on the relationship between science and myth. Its author (1) suggests that the theory of evolution provides the most powerful mythic structure for our times; (2) points out the problems that arise from the fact that, historically, evolution became yoked to the earlier concept of material, technological "progress"; (3) argues for an interpretation of evolution that is based on religious and psychological models of human development; and (4) proposes that such an interpretation, in which personal and social growth is seen as the possible outcome of evolutionary forces, may act as a corrective to a myth based on material progress.

Keywords: cultural evolution; directive function; evolutionary myth; explanatory function; myth system; reflective consciousness

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Australian aborigines depended on the rains of the yearly monsoon to replenish their wells and to make subsistence possible. They explained the sudden appearance of clouds, lightning, and rain by saying that Yurlungur, the huge serpent who had created the first man and woman, came back each year to copulate with the sky and generate the water needed for the survival of his progeny (Warner 1958). Many years ago, in a dark cave on the Gargano peninsula in Apulia, in southern Italy, I touched the depression in a flat boulder allegedly made by the footprint of the Archangel Michael when he came several hundred years ago to rid the countryside of the plague. All around the walls of the deep cavern the local people had hung thousands of silver hearts, legs, and hands to thank Michael for healing them from the results of accidents and diseases.

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We immediately recognize the stories of Yurlungur and the Archangel Michael as myths—that is, as explanations that people without scientific training, or at least a healthy dose of skepticism, have given to some event or experience that they thought was meaningful and inexplicable. For the Australians it was the all-important rain that had to be explained; for the Apulians it was the cessation of a deadly epidemic. In both cases, to make sense of the portentous phenomena people made up stories they could believe in, stories that were coherent with the rest of the beliefs in their culture. When such a story is not coherent with *our* beliefs, we call it a myth.

I am not claiming that we should not regard such stories as myths. I do not believe for a moment that a monsoon is caused by a gigantic airborne copulating snake, or that my namesake St. Michael actually trod the Apulian soil. But I think it is important to realize that a myth constitutes the best explanation its users can come up with at the time for the strange contingencies of the world they live in.[1] The corollary of this realization is that the best explanations we currently have may also come to be seen as myths in a generation or two. I can see no reason for exempting ourselves from what seems to be a natural feature of cultural evolution: when one interpretive framework supersedes a previous one, much of what was previously knowledge becomes myth.

It is unlikely that science, or the systematic method for uncovering regularities in the material world, will itself become obsolete in the foreseeable future. After all, as Donald Campbell (among others) has argued, the scientific method is continuous with previous efforts to get reliable information about the environment and is the latest development in a process that started when organisms first acquired senses to detect events at a distance and continued with the invention of speech, writing, and the telling of stories (Campbell 1976). In this broad sense, the advancement of science does not seem to have been reversed at any point in time, and one might expect it to continue, even though its methods a hundred years from now may be as different from ours as the present conduct of science is from the medieval alchemist's or the prehistoric shaman's, who were also using the best methods then available for describing and controlling reality.

But although the essence of the scientific method will presumably continue to inform human efforts to understand the world, the specific conceptual models it uses at any given time are likely to turn into myths as time passes. Already many of the models taken seriously by the best scientific minds not so long ago—such as the homuncular theory of reproduction, the idea of an envelope of ether surrounding the earth, and the Lamarckian theory of species adaptation—have acquired the status of naive mythical stories. When will the Big Bang theory of creation, the subatomic model of matter, and the double-helix model of genetic information storage come to be thought of as myths? Perhaps never, but I don't see how we can be sure.

In order to bring to a clearer focus the present relationship between science and myth, in this article I attempt the following. First, I suggest that the theory of evolution provides the most powerful mythic structure for our times. Second, I point out the problems that arise from the fact that, historically, evolution became yoked to the earlier concept of material, technological "progress." Third, I argue for a different interpretation of evolution, one based on religious and psychological models of human development. Finally, I propose that such a reinterpretation, in which personal and social growth is seen as the possible outcome of evolutionary forces, may act as a corrective to the present myth, which is based on material progress.

On the Functions of Myth

Like other ways of conveying information, myths can be seen as having two discrete functions: to *explain* past events, and to *direct* the course of future events by focusing human energy in certain directions. In terms of their explanatory aim, perhaps the most important function of myths has been that of accounting for the origins of people. Where we came from, and why, seem to be questions of compelling salience in most if not all cultures. Most myth systems start with describing the creation of the world, with its main features being the land, the waters, and the sky, then the creation of plants and animals, and finally the shaping of the first ancestors of the tribe or community that invented the myth. In this sense, Genesis and much of the rest of the Bible follow the format that is standard in the majority of the world's cultures, even though the biblical story is one of the few that are written down.

This explanatory function is important because human beings, having acquired reflective consciousness, are confronted before and beyond everything else by the mystery of their own existence. I am not sure when the evolution of the human nervous system reached the point where we began to see our individuality as a problem that required explanation. Some have argued that the transition to self-reflection took place as recently as about three thousand years ago—roughly in the interval between the writing of the *Iliad* and the *Odyssey* (Jaynes 1977). In my opinion it probably occurred much earlier (yet still during the last few seconds of evolutionary time), perhaps within the last thirty thousand years or so. In any event, once the brain became complex enough to realize that it had some control over the body that housed it, the question as to how it all began seemed to become overwhelmingly important. Myths were one answer to that question.

The second function of myths is directive. Deprived of absolute genetic control through the emancipation of the mind from the brain, humans suffer from an embarrassment of choices. The greater the number of choices present in consciousness, the greater the unease and anxiety we suffer. Various cultural mechanisms arise to provide direction to our energy: norms,

values, habits, and laws are all ways of channeling purpose to specific ends. Among these mechanisms, myths tend to provide a metadirection—a way of using the past to justify the future. For instance, the account of how Adam and Eve were created in God's image has been used to justify human supremacy over the rest of creation and made Christians comfortable with the idea of exterminating plants and animals if their existence conflicted with perceived human needs. Similarly, the lslamic belief that warriors who die defending their faith will spend eternity in a garden of delights has made it easier for young Muslims to fight enemies with gleeful abandon.

Myths do not always create direction for human purpose out of new cloth; they often simply reinforce already-existing genetic or cultural tendencies. In any case, they generally provide powerful support for courses of action that are convenient for a culture and for its individual members.

The Myth of Evolution

Perhaps the most pervasive myth of our times derives from evolutionary theory. In order to avoid misunderstanding, I hasten to make an important distinction: I am not claiming that evolution is a myth by our current standards of knowledge. I believe that the evolutionary model that informs most of present-day science is as true an account of how life-forms arise and change as we can fashion at the present time. I am simply suggesting that the bare facts of evolution have given rise to a set of largely unconscious assumptions about the past and the future of the human race, and these assumptions have profound consequences for how we live; they may influence the future course of evolution itself, hence they carry some of the characteristics of a myth. It is this set of often hidden assumptions that I would like to address as the *evolutionary myth*.

Even before Darwin, Europeans had the idea that unending progress was the lot of humankind—or at least the lot of its civilized members informed by Newton and Descartes and having the benefits of technology. This sense of inevitable progress may have started as soon as the Renaissance or as late as the dying out of the last great epidemics that ravaged the Continent, but it had become quite widely established by the nineteenth century. It is important to realize that a belief in progress is a rare exception in the historical record. More cultures hold models of cyclic change, in which epochs of increasing order and prosperity alternate with epochs of increasing chaos and poverty; or models of linear disintegration, such as the Greek belief, shared by Plato, according to which a past golden age was followed by less and less desirable ages. It could be said that these primitive views of historical change are more congruent with present scientific knowledge than is the belief in progress, because they are based on the assumption of chaos and entropy.

Be that as it may, Darwin's formulation of the theory of evolution gave powerful support to the burgeoning belief in the inevitability of progress.

It is not my intention to review how a vulgarized evolutionism may have acted as a catalyst or intellectual emulsion for the spread of various recent political movements, from Marxism-Leninism to the Nazi racial doctrines. I am more interested in tracing the less obvious but perhaps more pervasive effects of this belief on our culture and on our minds.

The myth of progress, in its subsequent reformulation under the influence of evolutionary theory, basically explains the origins of humankind in the inevitable ascent of human beings from lower forms of life, and justifies their preeminence in terms of the increasingly powerful and subtle control humans have achieved over the animate and inanimate environment. This extrapolation from evolutionary theory qualifies as myth in that it ignores several crucial components of the scientific account, such as the role of chance, the absence of certainty about the continuation of any evolutionary trend, and ambiguities about what constitute higher and lower forms of life. Yet despite its shaky scientific foundations, this myth might have served well the need for having a good opinion of our present status in the scheme of things, and especially about our future, had it not been for the devastating doubts that the First World War, and then the Second, sowed in our collective consciousness.[2]

In terms of the directive function of the evolutionary myth, its main contribution seems to have been to support and legitimize the full development of technology. Because progress could best be measured in terms of technological power and control, and because progress was the latest manifestation of the evolutionary process, it followed that our future must consist of more and more powerful and controlling technology. How pervasive a hold the evolutionary myth has taken of our minds is shown by the fact that we can scarcely imagine any scenario of the future except in terms of technological advances. Movies, books, and other representations of the future feature faster rockets, smarter robots, pills instead of food, and beings with extraordinary computational or conceptual abilities. But in the subterranean future cities of our dreams, the relationship between people and their inner lives is no more than a strangely attenuated reflection of the present. We can imagine better appliances, but our ruling myth precludes imagining better ways of being human.

Another example of both the explanatory and the directive functions of the evolutionary myth is the way it has changed our cultural environment. It has often been said that while previous myths have inspired people to build impressive temples and palaces and to create complex forms of liturgy, art, and dance, modern science has failed to generate any comparable cultural achievement. If we look at the evolutionary myth from a broad perspective, however, its sterility in terms of cultural products is no longer so obvious.

I would argue that the interest in art for art's sake, which has become a pervasive phenomenon in the past two centuries, is based on the symbolic

significance of artistic creativity as a concrete manifestation of progress in action. Up until the Renaissance, music, painting, dance, sculpture, and architecture were generally employed in religious or social contexts and were not valued much for their own sake. Works of art were instead considered to be primarily educational tools, facilitators of conviviality, or signs of status and distinction. This integration of artistic expression with the rest of human activity is what gave art its power over the emotions and the imagination.

The intrinsic value of the arts increased enormously through their largely unconscious connection with the myth of progress. After the Renaissance, artists began to be seen as individuals who were at the cutting edge and whose works demonstrated the inevitable advance of novelty. Yet, paradoxically, this emancipation of the arts from the matrix of human concerns is arguably responsible for the weakening of their hold over the masses. Art for the sake of art is in danger of becoming an esoteric symbol of progress, with little effect on people's experience.

But as a symbol for the myth of progress, art has certainly acquired an important place in our culture. Ever since the last century, the major urban edifices in the West have been opera houses, orchestra halls, and art museums, as well as museums dedicated to preserving artifacts of past cultures which could be used to remind us how far along we have come. Chicago residents identify the Art Institute as the cultural center of their city; in most people's minds that repository of fine arts contains proof of the ever-renewed creativity that characterizes our species. In Washington, D.C., the focal center of the city is the Mall, which is surrounded by all sorts of museums showing the past as the benchmark against which to take pride in the present. The most widely visited of these, the Air and Space Museum, actually illustrates the future of progress and thus represents the directive function of the evolutionary myth.

The myth of evolution has also spawned a great variety of enormous structures that symbolize technological progress even more directly. For instance, at the start of the twentieth century Henry Adams compared the huge electrical generating stations of his day to the Gothic cathedrals of the Middle Ages (Adams [1909] 1959). The cathedrals were built to effect a symbolic connection between human beings and the spiritual powers above; the generators, Adams claimed, symbolized human power over material forces. Until recently, government-sponsored glossy travel brochures to almost every country proudly displayed photographs of industrial complexes: massed smokestacks belching lurid billows of smoke emerging from sugar cane fields in Brazil, and a pall of gray murk enveloping the banks of the Danube in the pictures of Tatabanya, the industrial showcase of Hungary. The poet William Blake, who was not taken in by the myth of progress, called these blots on the landscape "dark Satanic

mills," but the majority, caught up in the spirit of the age, transformed them mentally into symbols of affluence and power.

Factories no longer send messages of progress on the march, but we have by no means ceased to build elaborate temples to energy in its more sophisticated forms. How else can we explain the enormous caves dug under Mont Blanc, where CERN, Europe's center for nuclear research, conducts its experiments on subatomic particles free from the interference of cosmic rays; or the gigantic research installations at Argonne and Batavia, Illinois, resembling in their self-contained architectural serenity and lush landscaped grounds the great monasteries of the Middle Ages; or the giant parabolic antennae designed to intercept messages from other galaxies? It would be difficult to claim that such edifices are *useful* in any sense of the term. Nuclear physicists privately confide that no great breakthrough in knowledge has been expected from their field for the past half century. But because the atomic bomb became the most obvious symbol of progress at the end of World War II, societies all over the world have poured out oceans of money to equip themselves with the temples and the priesthood befitting this latest manifestation of the evolutionary faith. So what should scientists do if the culture is determined to build elaborate sanctuaries to their work, in the touching belief that it will improve their lives? "Take the money and run" is a perfectly understandable human response. Presumably the early priesthood of the Christian church did not plan to become rich and powerful, either. But when so many people were willing to donate their estates to a church that claimed to be their only link to salvation, the clergy found it impolite to refuse, took the money, and built themselves the equivalents of the modern research resorts.

The problem with identifying evolution with the progress of technology is that we run the risk of mortgaging the future of humankind in order to make it possible for the race of artifacts to evolve. As Richard Dawkins, the biologist who coined the term *meme* to denote units of instruction transmitted through culture, has written: "A meme has its own opportunities for replication, and its own phenotypic effects, and there is no reason why success in a meme should have any connection whatsoever with genetic success" (Dawkins 1982, 110). For instance, weapons replicate themselves into more and more powerful types because they find a hospitable environment in human minds, and they compete with humans for scarce resources without necessarily being of any benefit to them. Similarly, new generations of cars, appliances, movies, fashions, and ideas arise every year from previous generations of cars, appliances, and so on, reproducing in our minds and taking up energy, often delivering very little in exchange (Csikszentmihalyi 1993). What makes us especially vulnerable to becoming parasitized by artifacts is the myth of progress in its evolutionary disguise, which makes us receptive to any new meme that can lay claim to novelty, even when its existence conflicts with ours.

Toward a Reformulation of the Evolutionary Myth

My argument has been that the myth of evolution has taken its present course because it was grafted onto the previous myth of progress, understood as the inevitable march of technology and control over material energy. But this is not the only way to interpret and apply to the unknown the little knowledge we happen to possess. If we take into account what we have learned about the ontogenetic development of individual human beings, a different reading of evolutionary trends becomes possible.

In many cultures around the world, similar scenarios of what it means to be psychologically mature have evolved, often independently of each other. These models of human development generally assume that men and women start life with a desire to survive, to protect themselves, and to be comfortable. When these needs are met, people next desire to be accepted by a community and seek security in conformity to the group. Some then attempt to develop their individuality and power. Finally, a few recognize that their uniqueness is not very meaningful unless it is embedded in the rich mosaic of life, and they grow to relish their interdependence, their union with the rest of the cosmos.

Usually these models of development are hierarchical, with each stage representing a more evolved way of being human. For instance, Buddhists, in this case borrowing from an earlier Vedic tradition, represent personal development in terms of a ladder with ten ascending steps. The first six rungs of the ladder represent states of consciousness ruled by instinctual responses such as hunger and anger. A capsule description of them was given in the thirteenth century by the Japanese Buddhist master Nichiren Daishonin (quoted in Ikeda 1988):

> When we look from time to time at a person's face, we find him sometimes joyful, sometimes enraged, and sometimes calm. At times greed appears in the person's face, at times foolishness, and at times perversity. Rage is the world of Hell, greed is that of Hunger, foolishness is that of Animality, perversity is that of Anger, joy is that of Heaven, and calmness that of Humanity.

Although these six ways of being include two positive states, they are also impermanent, because they are not under our control. We may experience joy or serenity if external conditions are pleasant, but if we cannot create positive inner states autonomously, regardless of what happens in the environment, we are still trapped in the lower stages of personal development. The next three rungs of the ladder are usually called Learning, Realization, and Bodhisattva. They represent progressively autonomous stages of the emancipation of consciousness from its material environment. Those who reach the ninth stage of Bodhisattva, for instance, are said to feel compassion for all living things and to perform altruistic actions on their behalf. What some Buddhists call the last stage, or Tenth World, need not concern us very much here, because of its extreme rarity: It is the

stage of Buddhahood, characterized by absolute and indestructible happiness (Ikeda 1988, 10).

The reason for going into such detail about the Buddhist model of personal growth is that it replicates an astonishing number of similar models developed in very many different cultures and historical periods. Of course the language and categories change, but the underlying concepts seem to be the same. For instance, the contemporary psychologist George Vaillant's model of growth is worded in terms of "levels of defense mechanisms" ranging from "psychotic" ones similar to the Buddhists' world of Hell to "mature" mechanisms which involve altruism and constructive service to others (Vaillant 1977). The most important underlying similarity is the idea that development consists in letting consciousness be directed by global values instead of self-centered, selfish genetic instructions.

A comparison of four recent psychologists' models of development makes a similar point.[3] Even though they studied different dimensions of personal growth, their conclusions are remarkably germane. Jane Loevinger describes stages of *ego development* moving from impulsive to self-protective behavior, and then to conformism, to individualism, to autonomy, and finally to integration (Loevinger 1976). Abraham Maslow's *needs hierarchy* starts with physiological needs such as hunger, sleep, and sex, which gradually yield to the need for safety, then to the need for belonging, for self-esteem, and finally self-actualization (Maslow 1968). Lawrence Kohlberg's stages of *moral development* move from morality enforced by fear to morality enforced by conformity, then to principled morality, and finally to an ethics based on universal unity (Kohlberg 1984). James Fowler's *stages of faith* move from conventional faith to individualistic, conjunctive, and finally universalizing grounds for belief (Fowler 1981).

It is important to clarify two frequent sources of confusion. First, the models do not imply that every person, simply as a result of getting older, will progress through these stages. For instance, according to Kohlberg and his followers, the majority of persons in every culture use moral reasoning that is enforced by conformity, and relatively few individuals progress to the higher ethical stages. The models of personal growth proposed by Buddhists, Brahmins, medieval Christians, and modern psychologists simply claim that such a development is possible and that, if progress occurs at all, it tends to follow such steps and hence is correlated with age.

A second caveat pertains to what is being claimed as developing. Often, especially in the modern psychological models, the claim is not that people at higher stages will act in accordance with the more refined and altruistic principles but simply that they are aware of and subscribe to them. Persons at the fifth of Kohlberg's moral stages will understand the importance of a binding social contract and will feel commitment to "the greatest good for the greatest number," yet they may still behave selfishly when their interests are threatened. Thus, the weaker claim is that personal growth

involves only a cognitive transformation, whereas the stronger claim, proposed for instance by the Buddhist models, requires a transformation of consciousness that is reflected in behavior as well.

Finally, it should be noted that many developmental psychologists, when looking at the data concerning changes in either thought or behavior, fail to find any trends at all. They believe that when people change they do so at random, or in response to specific changes in their situation or environment (see Pearlin 1982). The evidence for the sort of irreversible linear trends described above is indeed still rather spotty. However, if we combine the systematic data with the widespread historical and cross-cultural record, we cannot help but be struck by the replication of the same underlying notion of a progress from a self-centered consciousness controlled by genetic needs to one identified with a cosmic system and controlled by its global needs. In any case, for my present argument, it does not matter whether we can demonstrate scientifically that such a progression does in fact exist. What matters is whether a belief in such stages of individual growth, glimpsed by these diverse perspectives, can yield an evolutionary myth that gives more valuable future directions to humankind than the evolutionary myth based exclusively on the belief in technological progress.

The Evolutionary Myth Revised in Light of Developmental Considerations

There is an old saying relevant to embryonic development that says, "ontogeny recapitulates phylogeny." It points to the fact that in its physical growth a human fetus in utero is at first indistinguishable from that of a fish; then for a few days it resembles a tadpole, then a baby chick, and so on, as if the history of evolution was replayed on fast-forward with each birth. In this case, however, I would like to suggest that the saying could also be stood on its head to read, "phylogeny recapitulates ontogeny." In other words, it seems possible that the human race is slowly evolving through the same pattern that individuals play out during the few decades of their lives.

It seems reasonable to assume that when consciousness first appeared among our distant ancestors, the overwhelming majority of their thoughts and actions were directed by wired-in genetic instructions. The needs for survival and security must have predominated. The next stage, which is still the most prevalent, consists in social forms that reinforce conformist, conventional, culture-bound ways of thinking and behaving. But there also are societies, especially in North America and Western Europe, where individuality and self-esteem have become relatively widespread principles for directing action. Finally, here and there we can see the beginnings of autonomous, integrated, and global thought becoming aware of itself and seeking expression in cultural and societal forms.

It could be said that, if this were true, the periods of ascendancy of the Hindu, Buddhist, Christian, or Confucian movements should have come after our days, because they represent more advanced levels of consciousness than that of the present. But two or three thousand years is such a short time on the evolutionary scale that by its measure it is meaningless to argue whether Christ or Buddha came before or after Stalin; the entirety of recorded history is to all intents and purposes contemporaneous.

What would it mean, then, to graft the evolutionary myth on the growth pattern of the human psyche instead of basing it on the progress of technology? It would mean, first of all, that we would stop believing in the grand deception practiced in our culture (and most others), according to which it is the satisfaction of the senses and material success that makes personal life happy and meaningful, leading to a better future. Of course any progress must have a component of physical comfort and increasing technological sophistication. At this point, however, too many people are unable to place their hopes in anything beyond greater comfort and more money to spend, and for this part of the population disillusion is almost inevitable. Even when the economy is spurting ahead, wealth and possessions do not necessarily bring happiness.[4] But what will happen to our society if the economy declines and the stream of downward mobility turns into a raging river? Will the disillusioned masses turn to religious fundamentalism or, like the Europeans in the 1930s, to new forms of fascism?

The dangers of global disillusion would be much less pressing if people became more aware of the possibility for happiness inherent in pursuing personally meaningful goals that do not require large investments of money or physical energy. For instance, the rewards of symbolic mastery—making music, writing poetry, painting, photography, learning to converse with computers, reading, and thinking—which can give the most satisfying experiences in life, are grossly underexploited in our culture. So are the equally important sources of enjoyment to be derived from good conversations, friendship, social interaction, ceremonials, and other forms of sharing experiences with others. In this respect, people in many traditional societies were more skilled and autonomous than the average member of our culture, because through weaving, woodwork, singing, and religious ritual they were able to express themselves as well as create meaningful symbolic products.

Many policy suggestions follow from the directive function of an evolutionary myth based more on the development of control over consciousness than on material progress. Some of these initiatives are already well underway. But many more could arise, and the existing ones could become more effectively integrated and mutually supportive, under the aegis of a new evolutionary myth. For example, different as they ostensibly are, both Hazel Henderson's efforts to recompute the GNP in terms that take into account the quality of life as well as economic productivity (quoted in

Csikszentmihalyi 1996, 304) and Benjamin Spock's efforts to create a social context more conducive to children's growth (see Csikszentmihalyi 1996, 229) share the same understanding about the need to recognize and act on spiritual needs that have been ignored for too long.

Concerns for the future of the environment, for the future of our children, and for the future of human dignity in a world that is becoming increasingly mechanized and automated all reflect at the phylogenetic level the kind of concerns that in ontogenesis are attributed to the highest stages of human development. These are the trends that would be strengthened and focused by a new evolutionary myth. Above all, the reformulated myth points to the need to increase the likelihood that individuals will have a chance to develop control over their consciousness. It suggests that the most urgent needs of our political agenda are not so much the building of better armaments or even the training of better mathematicians, but rather the fostering of the kind of inner discipline that leads to Buddhahood, or, more modestly, to Maslowian self-actualization or Fowler's universalizing faith.

Research in technologically advanced societies suggests that contemporary people have not made any great gains in the ability to control their minds and to enjoy their lives in comparison with people in traditional societies. In fact, the opposite may be the case. More and more, we are becoming dependent on professionally packaged stimulation like recorded music or television programs to fill up our free time. When left with nothing to do, most people tend to quickly get depressed. Thinking is something that many teenagers and adults alike try to avoid at all costs, because, lacking training and experience in it, they find it painful.[5] Deprived of inner resources that would allow us to control experience, we are increasingly dependent on the media, on consumer goods, and on external directions to give purpose and shape to our lives.

The evolutionary myth based on material progress allows us to formulate goals that are congruent with only the first two stages of individual development: physical well-being and conformity to group values. This limitation makes us very vulnerable to exploitation by any idea, product, or technology that is advertised as making life more comfortable materially and as helping us live up to societal expectations. To go beyond these to the stages of individual autonomy and then to harmony with our social and nonhuman environment, we must find a way to recast the current idea of evolution so as to include a model of psychological progress based on what we know about personal growth.

Understandably, there are powerful forces at work to make such recasting difficult, if not impossible. Too many vested interests profit from a population that wants primarily physical comfort and safe conformity. It is much easier to exploit and manipulate people who are docile and predictable. If the evolutionary myth were recast, economists could no longer

calculate progress solely in terms of production and consumption figures; politicians could no longer get support by appealing to the most obvious fears and desires of the electorate; advertisers and businessmen would be at a loss as to how to provide substance instead of appearance.

Yet, difficult as it may be, we must awake to the realization that our present evolutionary myth is no longer tenable. As stockpiles of nuclear waste rapidly turn the entire planet into a ticking bomb threatening the future of life, as the lifestyle of humankind depends increasingly on squeezing the last drops of potential energy out of the land and the seas, as we become not more but less able to control the psychic energy in our consciousness, we must acknowledge that we have placed our hopes in false idols.

Perhaps when we combine the knowledge from the hard sciences with the understandings generated from the sciences of humankind and begin to look at nature as a complex system that includes cultural and psychological as well as biophysical processes, perhaps then it will be possible to create a new myth to direct us into a more viable future. But of course then we will not think of it as a myth but as the best description of the unfolding course of evolution.

NOTES

1. Jacob Bronowski is quoted by Ursula Goodenough (1990, 212) as having written that "it is in the nature of myth that those who hold it do not believe it to be a myth."
2. It would take up too much space to justify this generalization, but it is my impression that most historians of thought would agree with its gist. In his book *The Creators of the Modern Era* (1993), Howard Gardner presents the biographies of seven exceptionally creative individuals who were among those who most influenced this century, and all of whom did their best work between the two world wars (S. Freud, A. Einstein, I. Stravinsky, Martha Graham, T. S. Eliot, P. Picasso, and M. Gandhi). Each of these geniuses became famous for deconstructing a classical domain of thought or artistic expression that had lost its credibility in the aftermath of the tragic events that concluded the Victorian era and the Belle Epoque. See also Csikszentmihalyi 1992b.
3. For more details about the comparisons of these and other theories of development see Bee 1992.
4. Recent research on the conditions associated with happiness suggests few and very weak correlations between wealth and material comfort, on one hand, and happiness or life satisfaction on the other. Also, deep involvement with meaningful goals and even traditional religious beliefs appear to improve the quality of life. See Argyle 1987; Csikszentmihalyi 1990 and 1999; Myers 1992; and Strack, Argyle, and Schwarz 1991.
5. For the anxiety experienced in solitude, see Csikszentmihalyi 1992 and 1990. For the effects of the media, see Kubey and Csikszentmihalyi 1990.

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