Fortieth Anniversary Symposium: Science, Religion, and Secularity in a Technological Society

MAGIC, RELIGION, SCIENCE, TECHNOLOGY, AND ETHICS IN THE POSTMODERN WORLD

by Barbara A. Strassberg

Abstract. In this essay I argue that magic, religion, science, technology, and ethics are components of cultures that coexist at every stage of the evolution of societies and cultures and are interconnected and intertwined with each other within the web of relationships with other components of social life and culture. They undergo changes under the influence of each other and of social and cultural factors that coevolve with them throughout the history of humanity in the direction of democratization. The religion-and-science discussion is embedded within the framework of the postmodern social scientific discourse to illustrate that the apparent contradictions or substitutions disappear and that in actual human experience there is cooperation and complementarity between these elements of culture.

Keywords: culture; democratization; ethics; evolution; magic; postmodernity; religion; science; sociology; technology; trust.

Magic, religion, science, technology, and ethics are components of cultures that coexist at every stage of the evolution of societies and cultures and are interconnected and intertwined with each other within the web of relationships with other components of social life and culture. Magic and religion are systems that operate within the realm of human faith—that is, a belief in a reality that cannot be scientifically tested and, in the followers'

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[*Zygon*, vol. 40, no. 2 (June 2005).]
 ISSN 0591-2385

view, does not need to be tested. Science and technology, by contrast, rely on testing and refer to reality that can be and actually is tested and retested all the time. Ethics fuses these two attitudes, because it may comprise norms and sanctions believed to come from and be enforced by supernatural forces and those that are constructed and enforced by social groups and societies. Most people seem to successfully blend these two positions, and thanks to the ability to believe in what is not actual (Hefner 2003, 44) they interact with their environment simultaneously in terms of untestable faith and testable belief.

Magic, religion, science, technology, and ethics are components of cultures that satisfy specific individual, social, and cultural needs with different intensity and with varying awareness of their operation among the persons involved. In some cases, it may appear that magic has been substituted for religion or that science and technology have replaced both magic and religion. Even though in some cases this can actually occur, in many other cases after closer scrutiny we notice that the apparent substitutions do not reflect the actual situation.

In an attempt to explain the operation of these components of culture within human experience, I refer to selected ideas formulated by Zygmunt Bauman (1994; 1998; 1999; 2000) and Piotr Sztompka (1999). These sociologists belong to the growing circle of world scholars who focus on the study of postmodernity and emphasize the exceptional importance of *trust* and *ethics* for the understanding of everyday human experiences in today's dynamic, complex, and contingent world. When we apply their theories of trust and ethics to the analysis of the relationship between religion and science, and magic and technology, we add interesting new voices to the ongoing debate on magic, religion and science. Also, by embedding that dialogue in the postmodern social scientific discourse, we can better illustrate the ways in which the complexity and fluidity of human experience allows for a fusion of magic, religion, science, technology, and ethics into a single impulse for action.

Before I move to the postmodern reflection on that dialogue, however, let me briefly refer to the anthropological views that gave the foundations to the interpretation of the relationship between magic, religion, and science, and now also technology, either as stages in the intellectual development of humankind or as dynamic components of culture functioning simultaneously throughout human history.

Anthropological Intellectual Heritage

The first major school of thought that emerged in anthropology regarding the relationship between magic, religion, and science was *evolutionism.* It was introduced in the late 1800s by E. B. Tylor (1871) and developed in a more comprehensive way by James G. Frazer in *The Golden Bough* ([1890] 1981). Frazer believed that magic, religion, and science constituted three

evolutionary stages, from magic to religion to science, but also maintained that the foundations for scientific thinking—the awareness of the "natural law," of the physical causal relationships between phenomena —were already embedded in magic. According to Frazer, people have evolved from the stage of magical thinking, based on a belief in human creative powers, to religious thinking, characterized by a belief in human powerlessness and dependence on supernatural powers operating regardless of human wishes, to scientific thinking, which restored some of the former sense of human creative power. However, this was not the magical power that allowed people to manipulate nature but power that stemmed from learning about nature and trying to understand the existing natural laws. The evolutionary tradition continues today, and one of the examples can be found in John Caiazza's article "Athens, Jerusalem, and the Arrival of Techno-Secularism," where he introduces the term *techno-secularism* to describe the "displacement of religion from our civic life" by technology (2005, 15).

The second school of thought, *functionalism*, was founded by Bronislaw Malinowski ([1925] 1974; 1935). Contrary to Frazer, Malinowski believed that magic, religion, and science had coexisted since the beginning of human society and that "each has its own task and province." He rejected the belief that preliterate people were "incurably superstitious," immersed in prelogical mentality, and he provided abundant evidence that they had "a body of rational scientific knowledge that was put to practical purposes." He maintained that "There are no peoples however primitive without religion and magic. Nor are there, it must be added at once, any savage races lacking either in the scientific attitude or in science" ([1925] 1974, 1). However, when Malinowski was saying that "a primitive man had to have a body of practical knowledge that gave him a working understanding of the natural world," he was referring to technology rather than to modern science (Morris 1994, 147).

Malinowski advocated a holistic approach to the study of cultures, suggesting that society should be analyzed as a whole with the objective of understanding how all the existing cultural elements were interrelated. He was very much interested in individual biological needs and in the ways social institutions responded to these needs. He studied psychological and social functions of magic, religion, and science and emphasized individual experience as the source of their origin. He believed that both magic and religion grew out of emotional stress and functioned as escapes from difficult emotional situations that offered no solutions by other (scientific) means. About magic Malinowski wrote that it works in situations that people are unable to control by means of science (1925, 1935) and, as Johnstone restates, "The practice of magic is thus not an expression of ignorance, as is commonly supposed, but a conscious, deliberate attempt to circumvent what might normally be expected to occur" (Johnstone 1997, 15). Malinowski considered both magic and religion as a part of the human

condition and as beliefs that are pragmatic devices necessary for the existence of civilizations. Therefore, in actual human experience, the distinction between magic and religion is difficult to make. In other words, "Rarely is religion without at least some magical elements, just as magic is seldom practiced entirely apart from a larger religious system that legitimizes it" (Johnstone 1997, 17). Thus magic and religion are neither competitors nor alternatives, and we cannot interpret religion as a substitute for magic.

If we blend these two trends of thought in anthropology, we see magic, religion, and science simultaneously operating in human societies, continuously interacting with each other and other elements of culture (Malinowski), and at the same time undergoing changes (Frazer). Today this perspective can be expanded by inclusion of technology, defined as any tools used by humans in their interactions with their natural and social environment at any stage of human evolution, and by addition of ethics, understood as a system of norms and guidelines directing, shaping, and interpreting human behavior (Strassberg 2003, 648). The hegemony of both technology and ethics in the postmodern social scientific discourse, which includes the religion-and-science dialogue, is beyond dispute.

It is hard to envision a culture today that would abandon any of these five elements. Obviously they evolve all the time together with the changing human biological, social, and cultural needs. Some needs expire, others are modified, and new ones continuously develop. Therefore, some of the old functions of cultural elements are no longer performed, others are modified, and new ones are added. The general character of each society and culture decides which needs dominate and which functions disappear or suddenly change into dysfunctions. Any significant changes that occur, in the realms of both needs and functions performed by cultural elements to satisfy those needs, may encounter resistance and evoke despair that is expressed in such terms as "decay" and "destruction." But, as history teaches us, this is a "normal" human response to occurrences that fuel social and culture changes.

In order to expand the above interpretations, we look at the relationship between magic, religion, science, technology, and ethics in the context of the postmodern world and try to better understand this relationship by applying elements of postmodern social scientific theories to their interpretation. Out of numerous key issues being discussed today, I select *trust* as a concept that allows me to clearly illustrate the oneness of magic, religion, science, technology, and ethics in everyday human experience.

Postmodernity and Trust

There is abundant social scientific literature on postmodernity as reality and on postmodernism, the social theories that help us interpret and better understand that reality (Giddens 1990; Lash 1990; Seidman and Wagner 1992; Connor 1994; Hollinger 1994; Berger 1998; Bauman 2000).

The thirteen fundamental characteristics of postmodernity are *processuality* (becoming); *continuity* (paradoxes); *systemicity* (interrelated events); *reflexivity* (feedback); *plurality*; *complexity*; *contingency*; *decentrality* (center is everywhere); *wholeness*; *agency*; *supraindividuality* (community); *ethics* (moral competence); and *politics* (allocation of public attention) (Strassberg 2001). Postmodernity is urban and middle class in its character, dominated by media, open to fundamentalism, and allows for the juxtaposition of discourses and mixing of diverse images (Ahmed 1992, 10–28). Among these characteristics, *wholeness*, the growing recognition of the interconnections between everything that is, can help us interpret magic, religion, science, technology, and ethics as different aspects of the same human experience.

Bauman and the Postmodern Unsicherheit. Bauman believes that in the rapidly globalizing postmodern world, on a daily basis people experience what he calls *Unsicherheit*, using "the German term that blends together experiences which need three English terms—uncertainty, insecurity, and unsafety—to be conveyed" (Bauman 1999, 5). He agrees with Anthony Giddens (1990) that most of the time we live in a state of *ontological security*, with a sense of the reliability of persons and things and the apparent predictability of our daily routines. However, once the routine's ability to self-perpetuate is discontinued, we suffer *existential anxiety*. To worry about eternity does not come naturally, and a great effort is needed for the worry to outweigh the daily concerns and tasks. Bauman notes that if religion is supposed to provide answers to "fundamental (ultimate) questions" of the purpose of life, one wonders if the daily routine actually prompts any kind of eschatological inquiry. "Before one has had the time to think of eternity, bedtime is coming, and then another day filled to the brim with things to be done or undone" (1998, 57). The concerns that fill human life are problems that "one can do something about" or "one may and should find out what to do about" rather than the "ultimate concerns" (p. 61).

To show the process of deconstructing ultimate concerns and transforming them into daily problems that need to be taken care of Bauman uses the example of death. He explains how "death has been sliced and fragmented into innumerable small and smaller-still threats to survival. One cannot do much with that prospect as such, and it would be utterly foolish to concern oneself with things one can do nothing about. But the little threats may be fought back, pushed aside, even defeated" (p. 65). "It is not death but life before death, threatened by people's potency rather than insufficiency that offers daily insights into uncertainty" (p. 67).

According to Bauman, the highest level of uncertainty is evoked by a particular danger: that of *missing an opportunity* by not seeing clearly enough which of the existing options to choose at the time of making a decision. "Men and women haunted by uncertainty postmodern-style do not need preachers telling them about the weakness of man and the insufficiency of human resources. They need reassurance that they *can* do it—and a brief

as to *how* to do it" (1998, 68–69). And, in order to be sufficient, these resources have to comprise a number of cultural elements:

> . . . the postmodern mind is altogether less excited than its modern adversary by the prospect (let alone moved by the urge) to enclose the world into a grid of neat categories and clear-cut divisions. We are somewhat less horrified today by the nasty habit things have of spilling over their definitional boundaries, or even by the premonition that the drawing of such boundaries with any degree of lasting reliability defies human resources. (p. 57)

This means that there is room for religion in this pool of resources, and some people do find the necessary reassurance in a specifically postmodern form of religion, born of the internal contradictions of postmodern life—that is, fundamentalism. In Bauman's opinion,

> Fundamentalism is a thoroughly contemporary, postmodern phenomenon, embracing fully the "rationalizing" reforms and technological developments of modernity, and attempting not so much to "roll back" modern departures as to "have the cake while eating it." It makes possible a full enjoyment of modern attractions without having to pay the price they demand. The price in question is the agony of the individual condemned to self-sufficiency, self-reliance and a life of never fully satisfying and trustworthy choice. (p. 72)

Fundamentalism seems to attract people who experience the "misery and agony of a life full of choices." The message is that an individual is not self-sufficient and cannot be self-reliant, but a group or the entire human species is omnipotent. The development of the powers of a group is intended to compensate "for the incurable insufficiency of its individual members, and therefore justify the unquestionable subordination of individual choices to the rules proclaimed in the group's name" (p. 74).

It appears that postmodernity not only has room for religion but also provides conditions favorable for the development of "new" forms of religious expression capable of incorporating the use of available technology and also of modern science. If we look at the development of fundamentalism from a global perspective, however, we see that it is only one among many forms of religion functioning in the world today as one among many resources that people can use to cope with existential anxiety. The evolution of human societies reflects a transition from societies of fate to societies of human agency, and more and more people become interdependent, rely on cooperation, and use technology that makes life even less predictable. People have many more options to choose from and live surrounded by anonymity and the impersonality of strangers.

In a world characterized by these features there is no other means to secure survival but *trust* (Sztompka 1999, 11–14) that fits our postmodern reality characterized by the recognition of the importance of human agency. I believe that Sztompka's theory of trust helps us better understand the simultaneity of the operation of magic, religion, science, technology, and ethics in the postmodern world.

Sztompka and the Sociological Theory of Trust. Sztompka defines trust as a

> BET ABOUT THE FUTURE CONTINGENT ACTIONS OF OTHERS. In this account trust consists of two main components: beliefs and commitment. First, it involves specific expectations. . . . Placing trust we behave "as if" we knew the future. . . . We must also face the future actively, by committing ourselves to action with at least partly uncertain and uncontrollable consequences. Thus . . . trust involves commitment through action, or—metaphorically speaking—placing a bet. (25–26).

Trust is linked to *risk*, understood as "the unwelcome, threatening future state of the world," that is, "the probability of adversity related to our own actions, due to our own commitments" (p. 30). Sztompka emphasizes that there are three dimensions of trust (pp. 60–68):

1. *A relational dimension*. Trust is a *relationship* in which the truster lacks sufficient information concerning all relevant aspects of the situation, and it is both a precondition for cooperation and a product of successful cooperation. Trust performs a number of functions. For individual partners of the interaction, endowing each other with trust evokes positive actions. Thus, trust liberates and mobilizes human agency and increases possibilities for action. For the wider community, trust encourages sociability, helps communication, encourages acceptance of and respect for strangers, strengthens the bond between individuals and community, and increases the chances for cooperation.

2. *A psychological dimension*. Trust is a *personality trait*, a trusting impulse, which is a product of the process of socialization in the intimate, caring climate of families. In order to survive in the postmodern world of uncertainty, people often turn to magic, religion, science, technology, and ethics as trust providers. Magical thinking helps us maintain trust in ourselves even when we realize that the commonly spread belief that we can be whatever we want to be or do whatever we want to do is to a large extent unfounded. Religion helps us maintain trust in the good intentions for us of the supernatural powers, however we define them, as long as we live our life according to the code we believe was prescribed by them, and to interpret negative occurrences in life as "lessons" that God is trying to teach us for our own sake. Science allows us to trust the experiments that repeatedly give the same results and theories that continuously change in the light of changing empirical data. We trust that scientists fully understand the processuality of scientific truths and the dependence of their data on the instruments of measurement that they use at any given time.

3. *A cultural dimension*. Trust is a *cultural rule*, a product of history, which allows for the development of cultures of trust or cultures of distrust. A culture of trust can be illustrated by our trust in technology, especially in *abstract expert systems* (Giddens 1990). When we trust these technological systems, in fact we trust the persons who design, construct,

and operate them. We trust that they are ethical people and that we can bet that their past and future actions give them the necessary expertise. Experts who make the abstract systems operate are bound by the codes of their professional ethics to acquire the necessary level of expertise to secure the trust of the coworkers within a given system and of people who use the system to satisfy their needs. Trust in abstract systems often "does not presuppose any encounters at all with the individuals or groups who are in some way 'responsible' for them" (1990, 83). People who are at the access points of abstract systems remind us that there are individuals involved in the operation of these systems (a smiling flight attendant before we board the plane) and that we can trust them even though we do not see them.

We trust not only people we have never met but also the practices and social mechanisms about which our own technological knowledge is slight or nonexistent. We do that because (a) most of us were socialized into an aura of respect for technical knowledge of all kinds, in spite of the potential fallibility of all claims to knowledge in science (1990, 89), and (b) this respect is based on skepticism and reserve; at any time the decision can be made to learn all the details about the abstract system and its operations. The empirical potentiality opening the system for scrutiny makes trust seem more justified and the ignorance about its operations a matter of choice rather than the result of a lack of necessary intellectual potential or of the fact that the system itself is untestable.

Because trust in abstract systems means trust in the ethical conduct of those on whose actions those systems depend, we also need to address the postmodern ethic. In my interpretation, ethics is both genetically and functionally interconnected with magic, religion, science, and technology, and they are all outcomes of the same evolutionary processes.

Postmodernity and Ethics

In his *Postmodern Ethics* Bauman writes,

> I suggest that the novelty of the postmodern approach to ethics consists first and foremost . . . in the rejection of the typically modern ways of going about its moral problems (that is, responding to moral challenges with coercive normative regulation in political practice, and the philosophical search for absolutes, universals and foundations in theory. (Bauman 1994, 4)

> Moral responsibility is the most personal and inalienable of human possessions, and the most precious of human rights. It cannot be taken away, shared, ceded, pawned, or deposited for safe keeping. Moral responsibility is unconditional and infinite, and it manifests itself in the constant anguish of not manifesting itself enough. Moral responsibility does not look for reassurance for its right to be or for excuses for its right not to be. It is there before any reassurances or proof and after any excuse or absolution. (1994, 250)

Contrary to the past, when being in the right meant following the customary way of life and avoiding choice, in the postmodern reality these are

"the actions one needs to *choose*, actions one has *chosen* from among others that could be chosen but were not, that need to be assessed, measured and evaluated" (p. 4). "The once unitary and indivisible 'right way' begins to split into 'economically sensible', 'aesthetically pleasing', 'morally proper'. Actions may be right in one sense, wrong in another" (p. 5).

Bauman believes that postmodernity freed itself from the illusions "that the 'messiness' of the human world is but a temporary and repairable state, sooner or later to be replaced by the orderly and systematic rule of reason" (p. 32). Therefore people have to relearn how to live with events that are not yet explained or inexplicable, "to respect ambiguity, to feel regard for human emotions, to appreciate actions without purpose and calculable rewards" (p. 33). Also, morality needs to be repersonalized, and moral responsibility has to be "rooted in the very way we humans are" (p. 34). This means that individuals need to operate as moral selves who draw norms from a variety of sources and follow them guided by internalized means of social control.

In everyday life, such moral selves interact with technology all the time. Bauman believes that technology is "a *closed system*, . . . the sole genuine in-dividual. Its sovereignty can be only indivisible and exceptionless" (p. 195). Technology keeps dividing, splitting, fragmenting, and atomizing all aspects of social life and culture as well as of human beings. The world and life become split into a succession of "problems," each calling for separate technological know-how and a Do-It-Yourself manual. But the reappropriation of expert knowledge by re-skilling is not enough, and the solution to our postmodern problems often requires that we rely simultaneously on the ethics of the experts operating technological systems, on science and its theories, experiments, and measuring instruments, on statistics, reflexivity, religion, and even magic.

Building on Bauman's concept of repersonalized ethics, we may construct a larger model of the evolution of magic, religion, science, technology, and ethics interpreted as dynamic systems simultaneously providing individuals and groups with resources they need to better understand their everyday experience, to find it meaningful, and to cope with the postmodern *Unsicherheit*.

Magic, Religion, Science, Technology, and Ethics in the Postmodern World

At the beginning of this essay I argued that magic, religion, science, technology, and ethics are components of cultures that coexist at every stage of evolution of societies and cultures. Now I want to focus on the changes that they all undergo under the influence of each other and of numerous social and cultural factors that coevolve with them throughout the history of humanity. The direction of that evolution, in my view, is best described by the concept of *democratization*, that is, an increasing level of ownership,

or "personalization," as Bauman might call it, of these cultural systems. More and more often they seem to operate not only "for the people" but also "by the people" in a Do-It-Yourself Self-Help fashion.

The process of evolution toward democratization is both spontaneous and intended, because it occurs as a result of the continuous unfolding of human potential, which is additionally stimulated and accelerated by education. As Joseph Campbell reminds us, "All men are capable of reason. That is the fundamental principle of democracy. Because everybody's mind is capable of true knowledge, you don't have to have a special authority, or a special revelation telling you that this is the way things should be" (1988, 31). In other words, humans are "hard-wired" for democratization, and it pulsates entering and exiting various areas of social life, in some societies securing for itself a more permanent position than in others.

On a macro scale, the timeline illustrating the evolution of magic, religion, science, technology, and ethics would look like a spiral of cyclically recurring stages characterized by different levels of dispersion of human Do-It-Yourself competency in regard to magic, religion, science, technology and ethics. Those macro stages can be interpreted as (1) "primary-premodern democracy," when every individual was capable of performing magical or religious rites, of thinking in scientific terms (trial and error), and producing simple tools; (2) "modern" development of categories of experts (elders, shamans, healers, priests) and/or of individual experts (the pope, Albert Einstein, Bill Gates); and (3) "secondary-postmodern democracy," illustrated below.

In the postmodern reality, the democratization of magical thinking is reflected in a widespread belief in lucky numbers, lucky charms, or touching wood for protection, in horoscopes or fortune telling, or in paranormal and occult phenomena (McGuire 1992, 106–10). The democratization of religion is often called privatization, and it manifests itself in a personal relationship between individuals and the sacred. The democratization of science can be seen in the growing interest of the general population, especially in the post-industrial countries, in becoming informed consumers. Technology becomes democratized rather quickly as well. Individuals in all corners of the world are carrying cell phones and using other devices of electronic communication. In the post-industrial countries, the young are being taught at early ages the skills necessary for a high level of computer competency, and adults are "forced" to become computer literate as well and to accept the fact that more and more services are provided by computerized technology and not by human beings.

Ethics also becomes democratized in the postmodern world. As Bauman observed, "Re-personalizing morality means returning moral responsibility from the finishing line (to which it was exiled) to the starting point (where it is at home) of the ethical process" (1993, 34). "Only rules can be universal. One may legislate universal rule-dictated *duties*, but moral *re-*

sponsibility exists solely in interpellating the individual and being carried individually. Duties tend to make humans alike; responsibility is what makes them into individuals" (p. 54).

These evolutionary stages do not occur in magic, religion, science, technology, and ethics at the same time or with the same speed. We may encounter a simultaneous operation of individual and group experts at different stages of the democratization of magical, religious, scientific, technological, and ethical practices. As we understand today, the punctuated-equilibrium model illustrates evolutionary changes in a more accurate way than a straight upward-sloping line does. But when we talk about the evolution of culture, the punctuated-equilibrium model becomes even more complex, because the elements of culture are "inherited" both vertically and horizontally. It becomes obvious that any model suggesting a simple from-to process of transformation of cultural elements by substitution of one by another does not reflect reality at the level of human everyday experience.

The road from "primary-premodern" to "secondary-postmodern" democracy is not as straight and short as the model may suggest. In our times there is a continuous fluctuation between the stages of individual experts, categories of experts, and secondary postmodern democracy. It occurs with every new technological gadget introduced to the market, every new scientific discovery or invention, every new interpretation of religion, and every new realization of human irrationality and predisposition toward superstitions as well as with every new mini ethical code generated by new ethical needs of the postmodern society and culture. This fluctuation is a result of the operation of many factors. I select three to illustrate my point.

1. The first is the "natural" human *resistance to change* (Ryan [1985] 2000) that makes it extremely difficult to introduce any new "creation" into any of the elements of culture. On the level of individuals, such resistance occurs on cognitive ("I don't know how it works"), emotional (" I don't like it"), and action-oriented ("I am not going to use it") levels.

On a macro level, it also presents itself in a variety of forms. At first the resistance takes place within a specific system. It is much harder for followers of a given religious system to accept a new interpretation of their sacred texts than it is for people affiliated with other systems, and it is much harder for scientists working in a given scientific discipline to accept a new discovery or invention than it is for people who represent different disciplines or for nonscientists.

Once the acceptance of the novelty is negotiated within the original system, the resistance may be continued by other systems. For instance, David C. Lindberg (2003), analyzing the responses to the discoveries made by Copernicus and Galileo, argues that the initial negative response came from the scientific community rather than from the Roman Catholic

Church. The resistance of the church came later and was not at all unanimous. What has often been interpreted in terms of a conflict between religious and scientific interpretations of reality actually originated as a conflict between conservative and progressive forces within science. In a similar way, the history of Christianity in the United States illustrates the process by which new interpretations of sacred texts lead to numerous internal splits within particular churches. The tensions between conservative and progressive forces within religious systems that result in the development of thousands of different interpretations of the Bible seem to be the cause of most of the resistance to change within a particular religious system.

Because of resistance to change, almost every new element introduced to religion, science, technology, or ethics by producers of culture is initially surrounded by narratives reporting the ways in which this element is going to harm individuals, societies, cultures, or all of humanity (Schultz 2002). Sometimes the resisters suggest the impossible, advocating a "return," "renewal," "revival," or "restoration" of the old order or proposing actions that they believe will stop the course of the cultural evolution and allow for the past to become the future. Such a past is frequently constructed and portrayed as an ideal that has suddenly been threatened or even lost. The shortcomings of that past that fueled the spontaneous evolution of society and culture out of the past and into the present are hardly ever acknowledged. In the realm of religion, the resurgence of fundamentalism in its postmodern version is a good example, and in the realm of technology, whether the object in question was the steam engine, bicycle, car, TV set, computer, video game, or all-in-one cell phone, the first response has usually been expressed in the form of a horror story about the negative effects such an invention would have on individuals, communities, and the entire fabric of society. In spite of the resistance, however, the new cultural elements become accepted first by the experts and then by the general population. Over time, the scope of acceptance spreads, the democratization of the implementation of these elements takes place, and they are incorporated into the already existing web of relationships.

2. The second important issue has to do with *boundaries*. If we agree that magic, religion, science, technology, and ethics are components of a tapestry of culture, we can talk about them as separate systems only if we apply the essentialist perspective to the analysis of human experience instead of trying to acknowledge the hybridal and fluid character of that experience. I tend to agree with Ronald Johnstone (1997, 15–16) that "In those societies where magic is most likely to be practiced and condoned . . . people make little if any distinction . . . among scientific knowledge, religious knowledge, common sense knowledge, and magic. Knowledge is knowledge, be it scientific, religious, or any other." However, I would argue that this happens not only in societies that practice and condone

magic but in all societies throughout the whole history of humanity. As in the past, today in every human experience there are some elements of (a) magical thinking, because most people believe in the human capacity to manipulate the environment; (b) religious thinking, because most people tend to accept their "fate" and to believe in the operation of "supernatural" forces that are unmatched by human potential; (c) scientific thinking, because most people rely on experimentation and testing, however basic it might be, as a foundation of knowledge of the environment; (d) technological thinking, reflected in the human predisposition to invent and use tools; and (e) a moral impulse—a basic sense of responsibility for choices people make in everyday life and accountability for the consequences of actions they actually undertake. These five elements are not seen as conflicting in everyday experience, because people's actions are based on their *interpretations* of reality, and the only "real" reality is for them the reality known to them through the prism of their experience, which includes experiencing reality that is not actual.

Take the recent example of a father of a 20-year-old American soldier who was killed in Iraq (Thomas 2004). When the father received the news about the death of his son he poured gasoline on himself and the military van in which the marines who brought him the news arrived, and set himself and the van on fire. We can view such an act as the outcome of magical, religious, scientific, technological, and ethical impulse. There have been numerous examples in history of people who believed that their own death by burning could bring a dramatic change even in the course of macro events. They believed that they had the power to change reality by their own actions (magic), that supernatural forces would take mercy seeing their despair and take their life in exchange for the life of the loved one (religion); they knew that fire brings a finite end (science) and that the use of additional tools, such as gasoline, accelerates the process and almost guarantees the success of the endeavor (technology). Such an act also falls into the realm of ethics, because, in our example, the father takes responsibility for his own death and also for his son's death. As a parent, he accepts self-inflicted capital punishment for not preventing his child's death. This example supports Manuel Castells' observation that "technology does not determine society; it embodies it, and society does not script the course of technological change; it uses it. . . . [T]echnology is society, and society cannot be understood or represented without its technological tools" (1997, 5).

Philip Hefner also sees the oneness of technology, society, nature, and cosmos. He pushes this oneness even further, finding a religious meaning in technology. In his interpretation this meaning is similar to the one that unfolds itself in the macro process of the becoming of cosmos, life, human beings, and everything that is. He proposes seeing technology as a sacred space, a medium of divine action, a major place where religion happens,

and a place where we wrestle with the God who comes to engage us (2003, 88).

3. Third, we need to address our role as *agents* in evolution, as creators of societies and cultures. A close look at what we create reveals that our creativity is very limited and reflects the patterns of creativity embedded in nature. Nature is characterized by the development of very few forms, and the processes of evolution seem to be restricted to a replication of these fundamental forms in numerous new configurations rather than a development of new forms. The same seems to take place in cultural evolution, as if the universality of the body plan among living organisms were replicated in a universality of a "social plan" for human interactions. Mihaly Csikszentmihalyi (1993) observed that it is easier for us to imagine a life among better appliances than among better people. That is, we have more lethal weapons but kill for the same reasons, and we have better medical technology but crave eternity the same way we did when we were inventing abstract concepts of eternal afterlife. If we look at our technology, we realize that it only serves as an extension or enhancement of our innate natural potential, and thus our oneness with nature is reemphasized. We try to "walk" outside of the solar system, to "touch" the surface of Saturn, to "see" the past of the universe, to "hear" communication from other civilizations, and so forth. If we look at social life and cultural beliefs, we see that our imagination is equally restricted. The science fiction produced today offers us some imaginary reality of the most advanced technology from the distant future—which still serves only as means of transportation and communication and of destruction or protection of what exists. And it portrays the same social hierarchies, relationships, desires, and patterns of behavior as the ones we have observed so far throughout our history, as if it is impossible for us to create an actually new social order or cultural arrangements.

Processes of multidimensional globalization, the consequences of which are becoming more and more evident all over the world, and the development of information technology and of the net of communication, contribute to the growing inclusion of diverse social and cultural components into one global space of the universe itself. The universe seems to be developing, through human beings, the tools that are necessary for its own process of becoming. We do whatever we can to make sure we will live and reproduce the species. And our survival seems, at least now, to be necessary for the universe, since so far only we are capable of playing the role of created co-creators (Hefner 1993) who can intentionally shape the processes of evolution.

This intentionality, combined with the desire to understand our experiences, motivates us to study all of the dimensions of the universe to the extent we can with the instruments we have at any given time. This allows us to create conceptual narratives—philosophical, theological, sociologi-

cal, scientific, and so forth—and inject them into the tapestry of culture, and thus the interpretations and meanings that we create enter the universe and make its own self-reflexivity possible. Such reflexivity is a tool necessary for the universe—as a self-regulating system—to continually reassemble itself in order to absorb everything we create. In a similar way we use self-reflexivity when we reassemble fragments of our daily lives into a process of our individual becoming (Bauman 1994, 197).

Conclusion

The proposed holistic interpretation of human everyday experience, an interpretation that sees it as an integral component, however minute, of the universe's processes of becoming, allows us to view magic, religion, science, and technology as components of culture that interact with each other in a very dynamic way and do not necessarily eliminate each other from that experience. The postmodern interpretation of reality allows contradictions to coexist, boundaries to be fluid, and the increasing *Unsicherheit* to be simultaneously counterbalanced by our trust in magic, religion, science, and technology—that is, in God and human beings. Whether or not we trust God depends on our untestable faith; whether or not we trust human beings and can be trusted ourselves depends on our testable beliefs. Trust takes us to the realm of postmodern ethics, which demands from us responsibility for our choices and accountability for all of the consequences of our actions, including the unintended but predictable ones.

It becomes quite obvious that when we embed the religion-and-science discussion within the framework of the postmodern social scientific discourse, the apparent contradictions or substitutions disappear, and we discover much more cooperation and complementarity between these two elements of culture as well as their connectedness and interdependence with magic, technology, and ethics.

It is difficult to make any predictions in social sciences, because social life and culture are shaped by human interactions that result from the operation of numerous factors, including individual choices that often seem to be made under the influence of a sudden irrational impulse. On the basis of the analysis presented above, however, I argue that, at least so far, there is no indication that the current development of technology causes the disappearance of magic, religion or science.

Note

I do not elaborate in this brief essay all the substantive differences between magic, religion, science, technology, and ethics (see McGuire 1992; Hefner 1993; Roberts 1995; Johnstone 1997; Strassberg 2001; 2003) or address the functional differences that stem from the unique characteristics of cultures within which they are embedded. Also, I do not discuss the variations that result from the differences between specific magical practices, religious systems, scientific disciplines, technological instruments, or ethical codes and the differences in experience that result from membership in different social categories within specific societies.

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