Articles

RELIGION AND SCIENCE: THE EMBODIMENT OF THE CONVERSATION: A POSTMODERN SOCIOLOGICAL PERSPECTIVE

by Barbara Ann Strassberg

Abstract. In this paper I present a model of analysis of religion and science as forms of social construction of knowledge from the perspective of postmodern sociology. Numerous works have been recently published on the possible relations between religion and science. Most authors address this relationship from the perspectives of theology, philosophy, or selected disciplines of natural sciences (Ian Barbour, John Haught, John Polkinghorne). My goal is to add to that discussion a voice from the perspective of social sciences, specifically postmodern sociology. The model I propose brings the religion-science conversation down to earth, that is, to the level of people who "live" religion and science on a daily basis. The theoretical framework for my analysis of religion and science and of their relationship is constructed on the basis of selected works of leading postmodern sociologists Zygmunt Bauman, Anthony Giddens, and Piotr Sztompka.

I begin with a brief summary of the basic ontological and methodological presuppositions of the postmodern approach to reality. This summary is followed by a clarification of meanings of certain concepts that are crucial for the understanding of my model. Then, I present the model of analysis of religion and science and, finally, make some suggestions for sociology of religion and sociology of science that might open new opportunities and challenges for future research of the interface between religion and science in the postmodern culture.

Keywords: embodiment; models; postmodernity; religiosity; scientificity; social becoming.

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Postmodern Approach to Social Reality

Let me first explain what I mean by "postmodern approach to social reality." When I refer to postmodernity, I mean a social paradigm, a constellation of concepts, values, perceptions, and practices shared by European and American communities, which forms a particular vision of reality that is the basis of the way the community organizes itself (after Fritjof Capra). This social paradigm also comprises postmodernism, a collection of ontological and methodological presuppositions that helps us analyze the postmodern reality. Postmodernity is a culture that started to develop in Western European societies during the 1930s and in the United States in the 1960s. It is a way of life and a screen through which we view reality today. Postmodernism is a new perception of that reality but related to the ways in which this reality might become known to us.

The social scientific literature on postmodernity and postmodernism is very rich and often controversial, and it provides diverse and sometimes contradictory views and evaluations of the postmodern culture, of society, and of the approach to reality (see for example Smart 1993 or Grenz 1996). Out of this plurality of views, for the purpose of my analysis, I selected specific ontological and methodological presuppositions that I consider extremely helpful for the study of religion and science and of their mutual relationship in postmodern culture.

According to the ontological presuppositions of the postmodern approach, all reality is characterized by the following traits: (1) processuality (reality is a continuing process of becoming); (2) continuity (reality is composed of paradoxes, but there is a bridge of continuity between them); (3) systemicity (reality is composed of dynamic systems of interrelated events); (4) reflexivity (reality is characterized by feedback and reflexivity); (5) plurality; (6) complexity; (7) contingency; (8) decentrality (reality is centerless); and (9) wholeness (reality reveals fundamental interdependence of all that is). In addition, the postmodern approach grants the power of "creation" of reality to human individuals and collectivities. It emphasizes the role of (10) agency (we are creators of societies, of cultures, of nature, and thus also of our own selves); (11) ethics (as creators we need to act as morally competent subjects); (12) supraindividuality (communities are our resources of moral competence; and (13) politics (with reference to decisions about the reallocation of public attention). Now I would like to show the significance of those presuppositions for the postmodern interpretation of religion and science.

Because nature, society, and culture are viewed as processes, science and religion, as components of culture created by societies, are also processes. Today, more and more often people involved in religious and scientific practice perceive the reality they address as processual, and thus the information they provide is processual as well. However, not only is scientific and religious information a process, but the experiences, patterns of be-

havior, norms, and communities that unite those who adhere to a given type of information, experience, behavior, and norms are processes as well.

Among the fundamental principles of nature, society, and culture are paradoxes and contradictions linked together by bridges of continuity. Scientific and religious information reflects those contradictions and tries to negotiate the bridges. However, paradoxes are also embedded in all other dimensions of religion and science.

In our times, nature is interpreted as composed of systems, of networks within networks (Capra 1996), and society and culture are also interpreted as complex systems, as a web of systems nested within other systems (Bauman 1992). Thus, science and religion as social and cultural systems are interacting with each other and with all other systems in the web of life, and, in addition, they reveal the systemic nature of the aspects of reality they address.

All systems are characterized by feedback, that is, a capacity to self-regulate, monitor their own operation, and correct deviations. They are able to grow, expand, adapt, evolve, break down, change, and be replaced by new systems. In the social world, which comprises religion and science, feedback, the knowledge of the outcomes, consists in the fact that social practices are routinely altered in the light of the incoming information about those very practices.

When we talk about a "web of systems nested within other systems" we obviously emphasize the plurality of those systems. We have never had problems with admiring the diversity of nature, but with the exclusion of diversity among people. The shift toward acceptance of and respect for (not just tolerance of) diversity among human beings, especially for a diversity of interpretations of the universe (scientific theories) and a diversity of interpretations (or maybe self-revelations) of what people define as the sacred, is still difficult even today for many people to make.

The continuous processuality of plural self-reflexive systems brings to reality complexity, which increases with the number of events and the number of relations between events that can possibly occur. In complex systems even very small changes may have dramatic effects, because they may be amplified repeatedly by self-reinforcing feedback. Complex social systems such as religion and science record, process, and reduce complexity, adapting the world to the human need for minimal order, so that humans can orient themselves in the world in a planned way.

This very complex reality is characterized by contingency, which means that at any point in time the behavior of any given system is inherently unpredictable. There is randomness in nonliving nature, and there is contingency in life. However, this randomness is accompanied by an "order of patterns" that allows us to develop trust and confidence. Science helps us to develop trust in "abstract expert systems" (Giddens 1990, 80), and religion encourages us to develop trust in God.

Once we accept the features listed so far, we are ready to accept the fact that there is no center to all that is. "The center of the cosmos is each event of the cosmos" (Swimme 1996, 112). Every scientific discipline and every religion developed to help people better understand the reality they lived in at a given time in a given space. But now we are beginning to understand and accept the fact that any claims of privileged access to the truth made by any of the religions or scientific disciplines are hard to defend.

When we give up the illusion of centrality, we become prepared to realize our connection, our relationship, and our ongoing interaction with natural reality, community, social reality, and, if we wish to do so, the sacred reality, and thus restore our sense of wholeness. Among various components of cultures developed by societies, science and religion seem to be the top manifestations of the sense of wholeness. With the broader acceptance of the theory of evolution comes a stronger awareness of humanity's close relationship to nature in the sense of the entire universe. This includes a growing awareness of our interdependence, our connectedness with other people and, if we wish, with the sacred.

In addition, we are prepared to accept the fact that we all are creators of societies, cultures, nature, and thus of ourselves, and that we are responsible for the outcomes of this process of creating. By recognizing our contributions we expand our autonomy and power. Since in our role as creators we are engaged in the ongoing process of construction of scientific and religious interpretations, we realize that we are responsible for the effects they have on the web of life when they reenter our existence as powerful forces influencing our actions.

Agencies in the role of creators of reality, responsible for the outcomes of their actions, are in need of a new, reinterpreted postmodern ethics. That ethics points to the relativity of ethical codes and of moral practices societies recommend and support. Pluralism of authorities and the centrality of choices transform the actors into morally competent subjects (Bauman 1993).

The possible resource of moral competence of both individual and collective agents is found in supraindividuality, that is, in the community in which one participates and which constructs and carries the ground rules that facilitate the well-being of that community and, at the same time, bring no harm to other communities. In our postmodern world, we are members of many communities at the same time, and as individuals we learn to move in and out of the local and the global all the time and thus expand the resources for our moral competence. The emphasis on community also leads us to a wider acceptance of the "commandment" of a "multilogue," a conversation with diverse partners of our interactions. The new interpretation of the place of human beings within the universe and supraindividuality as a possible resource for ethics bring us to one more dimension of the postmodern paradigm—the dimension of politics.

Public attention is the most important, coveted, and struggled for among the scarce commodities in the focus of political struggle. Through attention, imagined communities acquire the form of real social entities, and new choices win social confirmation. Individual choices often are made on the basis of the visible amount of public attention any given offer receives.

In summary, if we incorporate the postmodern ontology in the interpretation of religion and science, we recognize that both religion and science are socially constructed complex systems characterized by paradoxes embedded in processuality, reflexivity intertwined with contingency, plurality leading to decentrality, and thus also by wholeness. Neither religion nor science can exist without human agents who live according to ethical norms negotiated by communities to which they belong and regulated by political powers that rule in those communities. This very broad interpretation of religion and science, however, which matches the postmodern perception of all reality, needs to be followed by a more detailed definition that would lead us toward the operationalization of religion and science and of their relationship for the purposes of a social scientific empirical research.

Therefore, in the next section, I present more detailed definitions of religion and science and analyze their social and cultural dimensions. Then, I present my interpretation of the possible forms in which individuals and collectivities manifest their connectedness with given religious systems or given scientific disciplines. Finally, I show the complexity of the possible interactions between religion and science from the point of view of the presented interpretation.

Religion and Science

For the purpose of my analysis, I define both religion and science by referring to the substantive understanding of these two social constructs. With full appreciation of the importance of the functionalist approach to culture and its numerous aspects, I intentionally reject functional definitions of religion or science. I believe that in order to understand what science and religion do, we first have to know what religion and science are.

According to my definition presented in Model 1, both religion and science are socially constructed and culturally sanctioned, changeable and changing complex systems of connections, interactions, and relationships between (a) knowledge, (b) norms, (c) individual and group experiences, (d) patterns of behavior, and (e) communities. The substantive difference between these two systems is the most obvious in the dimensions of knowledge and norms.

Knowledge in both religion and science is expressed in the form of beliefs. In the case of religion, we talk about "faith," the type of belief that cannot be verified (God created the universe) and, most important, in the

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are socially constructed and culturally sanctioned, changeable and CHANGING COMPLEX SYSTEMS of connections, interactions, and relationships between:

A. KNOWLEDGE - BELIEFS, in the sense of:

FAITH	BELIEF
(no need to verify)	(need and potential to verify)

expressed by symbols, meanings, and myths related to what at a given time and in a given place a society defines as:

the SACRED (supernatural)	the NATURAL (profane)

comprising models *of* the world and models *for* the world;

B. INDIVIDUAL AND GROUP EXPERIENCES—emotional states evoked by the above system of beliefs (for example, awe, fear, dependence vs. freedom);

C. PATTERNS OF BEHAVIOR allowing to test, reenact, reinforce, and transmit those beliefs, symbols, meanings, and myths;

D. NORMS believed to be defined and sanctioned (rewards and penalties) by or on behalf of

the SACRED	SOCIETY;

E. COMMUNITIES OF PEOPLE who share those beliefs, symbols, meanings, and myths, participate in individual and/or group experience, follow prescribed patterns of behavior, and recognize the norms and sanctions as necessary for their survival.

Model 1. What Are Religion and Science?

opinion of the followers, does not need to be verified. In the case of science, the beliefs need to be tested, and even if some have not been tested yet, there is a potentiality embedded in them that opens the possibility for their verification in the future (the genome project). Beliefs that compose religious and scientific knowledge are expressed by symbols, meanings, and myths related to what at a given time and in a given place a society defines as the sacred (supernatural) and the profane (natural). Religion provides models of the world and for the world in connection to the supernatural, and science provides those models in connection to the natural.

It becomes clear that knowledge, or information, refers to messages that have consequences for behavior. Thus religious and scientific knowledge is directly linked to the dimension of norms, that is, guidelines for behavior

that are believed to be defined and sanctioned (through rewards and penalties) by or on behalf of an authority. In religion, this authority is the sacred; in science, it is the society. As a result, the power of religious sanctions in comparison to societal sanctions to a large extent stems from the nontestability of the sacred authority.

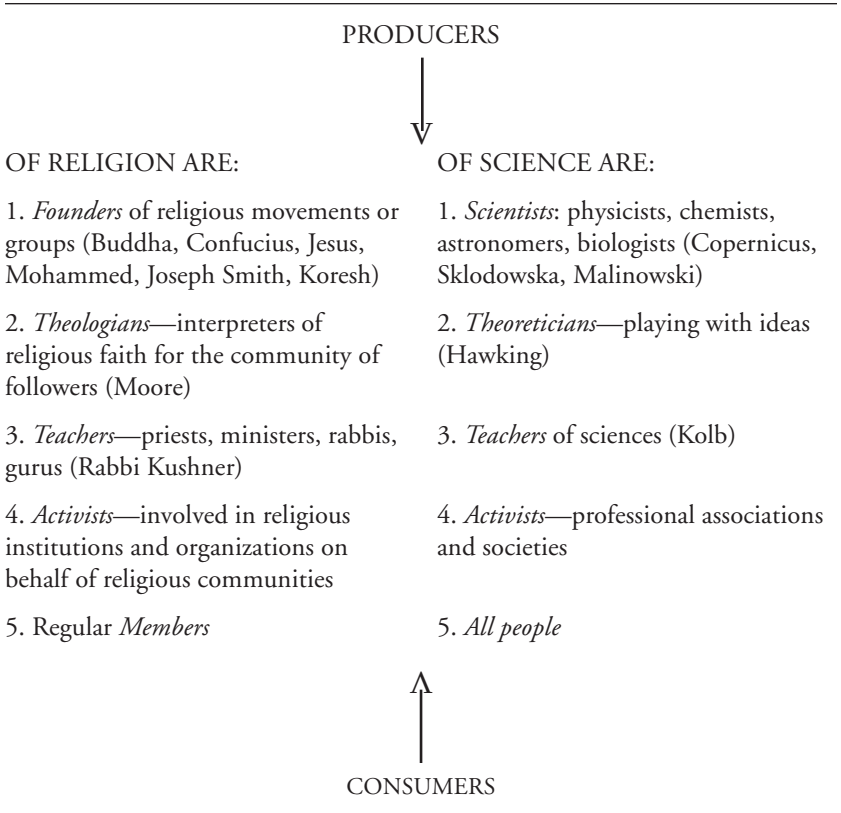
The dimension of individual and group experiences refers to emotional states evoked either by the religious or by the scientific systems of beliefs. These emotional responses might range from awe and fear to a sense of dependence or freedom. In addition, both religious and scientific beliefs, if challenged, evoke extremely strong emotional responses, even when the challenges come from within the respective systems (a more liberal interpretation of the sacred or a new scientific discovery).

The dimension of patterns of behavior refers to rituals that allow us to test, reenact, reinforce, and transmit the religious or scientific beliefs, symbols, and myths. Examples include weekly religious services, daily prayers, rites of passage performed in order to maintain given religious beliefs and to transmit them to the next generations, or numerous repetitions of scientific experiments performed for the same reasons.

The last dimension refers to communities of people who share religious or scientific beliefs, symbols, meanings, and myths, participate in individual and group experiences, follow prescribed patterns of behavior, and recognize the norms and sanctions as necessary for their survival.

The substantive difference between religion and science, as we clearly see, lies in the fact that religion introduces a belief in a sacred reality distinguished (although not necessarily separate) from the natural and social world, and science does not do that. Functionally, both religion and science try to answer the so-called ultimate questions of How? and Why? These are the questions related to the origin of the universe, life, society, and culture as well as questions related to "the experience of being alive," to use Joseph Campbell's term in replacement of "the meaning of life" (Campbell 1988, 4–5). Some scholars believe that the act of asking these questions makes human beings "religious." In my interpretation, however, the avenues we select in our search for answers and not the questions themselves indicate whether we are religious or not. I believe that this approach shows more respect for people by giving them the right to choose between religion and science if they wish to do so, it eliminates religious imperialism, and it gives room to sciences to wrestle with those ultimate questions as well. Thus, it also enables us to interpret the religious and scientific worldviews as complementary in our search for answers to these questions.

Many scholars have developed models of interaction between religion and science. Without going into details, let me state that they often perceive this interaction as either confrontational or nonconfrontational (McGrath 1999, 40–50). They talk about (a) *conflict* between religion and



Model 2. Categories of People.

science, manifested in the opposition between these two constructions of knowledge and their negative impact on each other; (b) *contact*, which is expressed in the positive interaction between these two distinct systems; (c) *contrast*, which assumes that they are different and valid but do not influence each other; and (d) *confirmation* of the scientific adventure by religion or of religious information by science (Haught 1995, 9–25).

If we adopt my definition of religion and science, the range of possibilities in regard to the interaction between religion and science expands enormously. For example, some people might see conflict between religion and science on the level of knowledge (creation and Big Bang) but appreciate the contact between them at the level of norms (religion reinforcing the legal system). Others might talk about confirmation on the level of rituals (God revealed through the outcomes of the genetic research) but accept contrast on the level of community (religious and scientific communities viewed as totally separate entities) and so on. To see even a higher level of complexity in regard to these models of interaction, let me separate

in the definition of religion and science the social from the cultural component and briefly elaborate on each of them.

The Social Component. The social component would be expressed by several categories of people embedded in particular periods of time in a particular space. These categories are shown in Model 2. These categories obviously are not mutually exclusive. Founders of religions might be consumers of sciences, and scientists might be consumers of religion. Theologians might teach sciences, and ministers might belong to professional scientific associations. All categories mentioned can overlap and be intertwined. In social reality, many scientists are religious, and many theologians accept scientific discoveries or inventions. In addition, the categories might be subdivided according to basic sociodemographic criteria, such as age, sex, gender, level and character of education, income, social class, race, ethnicity, religious affiliation, degree of geographic, social, and intellectual mobility, and/or place of residence, both in the macro-global scale and in the more micro-regional scale. Already we can see clearly how important it is to specify who in fact is involved in the conversation between religion and science in any given situation.

Besides focusing on categories of people involved, we also need to mention the religious and scientific institutions and view them as operating within the network of other social institutions. The Model of Social Becoming (Sztompka 1991) is extremely helpful in the presentation of the interaction between individuals, groups, and institutions, including the religious and scientific ones (Model 3).

Past	Time 1	Time 2	Future
POTENTIALITY	ACTUALITY	POTENTIALITY	ACTUALITY
TOTALITY = STRUCTURE —>	OPERATION —>	STRUCTURE —>	OPERATION
REALITY = AGENCY —>	PRAXIS —>	AGENCY —>	PRAXIS
INDIVIDUALITY = AGENT —>	ACTION —>	AGENT —>	ACTION

FUNCTIONING

SOCIAL CHANGE

HISTORICAL PROCESS

Model 3. Model of Social Becoming (based on Sztompka 1991, 87–119)

The reality of the social world unfolds where totalities (structures) and individualities (agents) meet (Sztompka 1991, 91). Agents mobilize their potentiality in actions, and structures discharge their potentialities in operation. Obviously, there are no structures without agents and no agents without structures. At the same time, structures do not melt into agents, nor do agents melt into structures. Reality unfolds itself where agents and structures meet at the level of agencies. Agencies, when placed in time and space, are conditioned both by constraints and by resources coming from structures and from individual or collective agents, and thus they constitute "the unified 'socio-individual field in the process of becoming'" (Sztompka 1991, 94). Within that field, agencies are actualized in praxis, which represents the confluence of operating structures and acting agents and is conditioned (constrained and facilitated) by the operation of structures and the conduct of individuals and groups.

All praxis is embedded in space, in the environment that connects given praxis with other systems. This environment has two interconnected dimensions: the material and the ideological. When we refer to the material environment we focus on human beings as biological objects conditioned by external natural factors such as climate and topography and the humanized nature created by human action related to technology. At the same time, humans are conditioned by internal natural factors such as genetic endowment, talents, and physical skills, and the humanized endowment, that is, biological endowment expanded and modified by human action, such as exercise, training, or self-improvement. When we refer to the ideological environment we focus on humans as conscious subjects, and this is the dimension that is directly linked to religious and scientific information.

> The agential potentiality is significantly shaped both by what people in a given society actually think and believe (in their individual and collective consciousness), and by what ideological structures (ideologies, creeds and the traditions embedded in social consciousness) make them think and believe. . . . Both . . . provide constraints and facilitations by defining what sort of praxis is possible and what is impossible. Praxis, in turn, via a sort of feedback, crucially affects consciousness. It is in and through praxis that people acquire beliefs as well as test them, verify and falsify claims, confirm and reject their cherished ideas. . . . Consciousness—individual, collective and social—is a pool of resources in the form of concepts, symbols, codes, frames etc. for the interpretation of the situation. It may keep people blind to some constraints or opportunities or open their eyes to them. It may cheat them, supplying inadequate intellectual tools for grasping reality. . . . Thus the natural conditions, in their constraining or enabling influence on the agency, are to a large extent mediated by the "ideological milieu." (Sztompka 1991, 102–3)

At this point I would like to single out one of the components of the ideological environment, the political consciousness. As I have already indicated, politics is strongly emphasized by the postmodern approach to

reality. This environment needs to be specifically mentioned because of its exceptionally dynamic interaction with both science and religion. The political authority is the one that guards the opportunities and constraints of individual, collective, and social consciousness by means of varied forms of power, from totalitarian coercion to truly democratic freedom of choices (for example, the government restricting scientific research under the pressure of certain religious interest groups).

Praxis is also embedded in time. At any given time it influences structures (modifying or shaping new relational networks) and agents (modifying or shaping their capacities). As a result, new agencies emerge, societal potentialities for praxis change, and new praxis becomes the manifestation of the actualization of new agencies. This process goes on endlessly, and it produces historical tradition, which is both the result of and condition for praxis. Praxis also influences environments—nature and consciousness—as well as all the links between structures, individuals and groups, and environments. In other words, all these potentialities create the "socio-individual field" for praxis, and praxis, by means of a feedback, modifies all these potentialities.

Agency suspended between the past and the future must have the capacity for self-transcendence and for social learning. These two stem from human potentialities such as (a) creativity, the ability to conceive and produce new things, (b) educability, the ability to learn from experience, and (c) the need for self-realization and self-fulfillment, "a drive actually to do these things" (Sztompka 1991, 117).

The Model of Social Becoming briefly presented here is very helpful for the analysis of religion and science in their social dimension. The religious agency would be the actual religious potentiality developed at the point where definite religious structures and individual and collective religious members meet. The religious praxis would be the actualization of the religious potentiality at the point where operation of definite religious structures and actions of members meet. This process of religious becoming would be embedded in time during its functioning, and change within historical processes, and in a specific material and ideological environment. I assume that we would obtain very interesting results if we were to apply to this model the distinction between agents who are producers of religion and those who are consumers, between founders of religious systems, theologians, ministers, religious activists, and regular members, and those who self-define as religious but do not maintain formal membership in a religious community.

The scientific agency would be the actual scientific potentiality developed at the point where definite scientific structures and individual and collective scientific agents meet. The scientific praxis would be the actualization of scientific potentiality at the point where operation of definite scientific structures and actions of scientific agents meet. This process of

scientific becoming would also be embedded in a definite time and environment. So, as in the case of religion, in the case of sciences we could obtain interesting outcomes if we were to apply the distinction of agents into producers and consumers, into scientists, theoreticians, teachers, and "activists," and people with diversified levels of connectedness with science.

Because all social structures, agents, and their environments are interconnected, intertwined, and engaged in operations, actions, and praxis that form the web of social life, it becomes clear that, as already stated, religion and science in their social dimension form plural and complex systems, characterized by processuality, paradoxes, feedback, contingency, decentrality, and wholeness. The processes of "becoming" of science and religion are actualized by specific religious and scientific agencies who perform praxis within constraints and resources provided by their particular environments, with particularly strong conditioning coming from political agencies and their praxis.

The Cultural Component. The second, cultural component of religion and science is also very complex. Returning for a moment to the definition, we see that this component is expressed by three basic dimensions of the two systems: (a) the cognitive dimension, or the symbols, meanings, myths, and models of and for the world; (b) the emotional dimension, or the patterns of individual and group experiences; and (c) the dimension of action, or the patterns of behavior and norms. Also, at the level of culture, we talk about culture embodied at a specific time in a specific space. Thus, religion and science are going to be interpreted as cultural phenomena intertwined with all other components of culture that stem from the social dimension discussed earlier.

Since in this paper I am interested primarily in religion and science as social constructions of knowledge, I am going to put aside the patterns of emotional responses and the patterns of behavior and norms and focus exclusively on the cognitive dimension of these two systems. In my interpretation, religious and scientific knowledge belongs to the cultural information developed by human societies on the foundations of genetic (speciational) and neurological (individual) information. Information is "that which bears messages that have consequences; that is, messages that result in the creation of something that makes a difference for behavior, whether that behavior is the biological process that makes our eyes blue or brown, or the attempt by human beings to live a morally good life" (Hefner 1993, 146). The cultural information is developed thanks to our capacity for self-transcendence, the capacity to create and use systems of symbols such as language, our educability, or capacity for learning, which enables us to develop cultures, as well as our need for self-realization.

From among the specific features of the cultural systems of information, I emphasize two. First, such systems are transmitted by means of learning and the exchange between societies (cultural diffusion). This means

that (a) the cultural inheritance, besides biological parents, also involves all significant others in individual life, and thus the transmission of that inheritance is not only vertical but also horizontal, and that (b) the time of transmission does not happen all at once after birth, but it is a long process of socialization through one's entire life. Second, the changes of cultural information are relatively fast, in spite of the "natural" human resistance to change. These characteristics need to be emphasized in order for us to understand the extent to which religion and science depend on the cultural processes of transmission of information from one generation to another and from one category of people to another. Producers of specific religious systems and of specific scientific disciplines are going to hold much more of that information than consumers. Numerous social and cultural factors are going to condition the transmission of that information between various categories of people involved. This raises a number of interesting questions for our discussion of religion and science. For example, we can ask whether religion or science is more democratic in its accessibility. On the one hand, we might say that religion is accessible to all regardless of their sociodemographic characteristics, and science is limited because it requires a certain level of specific training. On the other hand, we might say that religion is limited because it is accessible only in its specific manifestation to members of a given church, denomination, or religious group, and science is accessible to all thanks to the mandatory public systems of education that by now have been developed by almost all societies.

The cultural information comprises scientific and ideological information. The scientific information links people to nature and the natural world in a global way (Campbell 1988, 30), and it is about (a) the biophysical environment, (b) the social environment, and (c) the information about technology, that is, the information pertaining to how to use the resources of the environment in order to satisfy human needs, both fundamental (survival of the individual and of the species) and derivative (e.g., to understand the order and meaning of life). The ideological information links people to their particular societies, and it pertains to (a) society itself (its origins, history, and heroes), (b) ultimate causes of events, (c) instructions on how to cope with problems (e.g., shortage of food, intragroup conflicts), (d) how to make judgments (e.g., about good, right, beautiful), and (e) how to satisfy culturally activated needs for artistic expression.

This brief conceptual introduction suggests that people and their actions, values and norms, choices, and responsibility for these choices are the focus of my analysis. This fits the postmodern view of reality that I summarized earlier. It becomes clear that religion and science are viewed here as complex systems in a continuous process of becoming, conditioned by feedback and contingency. These systems have plural empirical manifestations, and none of them occupies a central position among others.

There are numerous scientific disciplines and numerous religious systems functioning among human societies. These systems also point to their interconnectedness with all other systems of their environment. Finally, we see here that religion and science cannot be interpreted in isolation from people, that is, from agencies performing praxis according to norms negotiated by various communities and additionally conditioned by political authorities.

This explanation of the ontology of religion and science needs to be supplemented by a few remarks about methodology.

Methodological Presuppositions

The postmodern approach introduces some presuppositions in the general areas of cognition (holistic construction of perceptions of reality), knowledge (historically and culturally conditioned), and the use of narratives (storied lives) and their interpretation.

The discovery of complexity and chaos as integral features of reality, and the most current findings presented by cosmologists and quantum physicists, are probably the most important forces that have pushed us toward the recognition and acceptance of the fact that the methodologies we inherited from modern sciences are no longer sufficient. We accept today the fact that, besides reason, intuition plays an important part in the formulation of many scientific theories and that, besides emotions, reason is often applied to religious interpretations.

Today we understand that knowledge is historically and culturally conditioned, that it is embedded in space and time and develops with the course of the development of our brains and cultures, personalities, and societies. We realize that not all people know the same things and, even more important, not all consider knowledge of the same things equally necessary. In this context, the directive of objectivity of knowledge is replaced by intersubjectivity, which roots the truth in the community. Since there are many human communities, including the religious and the scientific ones, there are necessarily many different truths. Once we have agreed that knowledge and truth are processes, we are no longer disappointed by the fact that the pursuit of them, as of now, does not seem to have an end. Also, we accept the fact that the interpretations of reality we construct are useful even if not objectively true, and we can never step outside of those constructions of reality, however hard we try. The concepts that help us understand the process of the construction of knowledge, both in science and religion, are narratives and interpretations.

Margaret Somers and Gloria Gibson (1994) put forth four types of narratives. Ontological narratives are stories told by social actors in order to make sense of their lives. Conceptual narratives are concepts and explanations that we construct as researchers. Public narratives are narratives attached to cultural and institutional formations larger than the single

individual, to intersubjective networks or institutions. Metanarratives are master narratives in which we are embedded as contemporary actors in history. Ontological narratives are nested in public narratives, and together with conceptual narratives they are all nested in metanarratives—and all of these types overlap.

Both religious and scientific systems are collections of stories, which have spatial and temporal ramifications and often compete with each other. Both systems manifest themselves in ontological stories of individual and group agents conditioned by public narratives of both religious and scientific structures. At the same time, they manifest themselves in conceptual stories developed by individual and collective interpreters of religious and scientific information. All of these types of stories are embedded in the metanarratives of a given time in a given space.

In the present time, in the Western context, the postmodern social paradigm might be viewed as such a metanarrative. This particular metanarrative, however, differs from previous Euro-American metanarratives in the fact that it accepts its own spatial and temporal limitations and thus is not characterized by any predispositions toward cultural imperialism. This metanarrative functions as just one among many, whether the others are oppositional to it or not. In fact, many metanarratives of the Eastern and Native American cultures are not oppositional at all. Also, the postmodern metanarrative, as a form of ideological information, contrary to the previous narrow, community-centered ideological narratives, translates the local into the global and thus interprets people first as members of the human species interconnected with all other components of the universe and only then as members of their respective societies. Again, this is not an either-or situation but one that allows the local and the global to be linked together,

The focus on narratives makes us realize that what we have are stories about stories and stories within stories. The knowledge that is produced on the basis of these narratives is interpretative, because it is a sense-making, world-mapping knowledge (Bauman 1992, 90). The meanings emerge when the text (story) and the interpreter engage in a hermeneutical conversation. However, the only thing a text can refer us to in our effort to grasp its meaning is another text already interpreted by another person. When we try to interpret religion and science for our own life-conditioned purposes, in fact we interpret the already existing religious and scientific interpretations.

Also, when we try to study the empirical manifestations of individual and collective connectedness to religion and science, in order to make sense of both the ontological and conceptual narratives of particular individual and collective agents we need to prepare ourselves for a cross-disciplinary scholarly endeavor and follow the methodological directives of the postmodern paradigm. The engagement of reason and intuition in the process

of construction of knowledge, the focus on processuality of that knowledge, the emphasis on stories as expressions of knowledge and on the interpretation of those stories—all of these presuppositions have a twofold applicability here. On the one hand, we might apply them to our study of the cognitive dimension of religion and science, that is, to the religious and scientific ontological narratives told by social actors in order to make sense of their lives, and, on the other hand, we might apply them to the construction of our own conceptual narrative about religion and science and their relationship from the perspective of postmodern sociology. Obviously, the ontological narratives of the agents and our conceptual narratives cannot be constructed outside of the public narratives of the structures, including the political ones, within which all agents act, nor outside of the temporally and spatially determined metanarratives by which all of these other narratives are conditioned.

What I have said so far immediately points to the complexity of human involvement in the process of construction and consumption of both religious and scientific knowledge and of our knowledge about religion and science and their relationship. In order to explain the significance of this methodological approach for the study of religion and science more clearly, I now introduce the concepts of *religiosity* and *scientificity* as manifestations of individual or group connection with specific religious systems or scientific disciplines.

Religiosity and Scientificity

I view both religiosity and scientificity as processes of pragmatic adaptation of religious faith and scientific beliefs to the requirements of a given period in the individual or group life. The processuality and flexibility of those pragmatic adaptations allow religion and science to evolve and thus survive numerous challenges and crises. Let me emphasize again that on this level we can talk about only one religious system at a time and only one or a few of the scientific disciplines at a time.

On the level of individual or collective religiosity and scientificity, people might (a) choose to accept only one, two, or three of the five dimensions included in the definition of religion and science (e.g., only norms, or only rituals and community), (b) reinterpret the official teachings and still perceive themselves as legitimate followers of a given religious system or a given scientific discipline (e.g., creation in seven days means eons of years; nonevolutionary biology), or (c) combine elements from various religious systems and scientific disciplines and create their own systems that best fit their individual or group needs.

The basic measurements of religiosity and scientificity would be (a) self-identification ("I am religious," "I am scientifically oriented"); (b) character, intensity, and frequency of emotional responses to the sacred and to nature, on the one hand, and to religious experiences (miracles) and scien-

tific discoveries, on the other; also, I would include here the intensity of predisposition toward defensiveness of the religious and scientific beliefs; (c) frequency of participation in religious and scientific rituals (attendance at sermons and lecture series); (d) level of commitment to following the norms (e.g., do not kill); and finally (e) formal membership in organizations and institutions uniting people who share the same religious and scientific beliefs (e.g., church and ASR—Association for Sociology of Religion—membership).

Religiosity and scientificity as manifestations of individual or group connection to specific religious systems and specific scientific disciplines push us in the direction of a complex web of interactions, influences, connections, conflicts, and contrasts. In social reality, for pragmatic purposes individuals and collectivities might combine elements of selected dimensions of the religious system they were born into with elements of selected dimensions of other religious systems and then, in addition, combine them with elements of selected dimensions of specific scientific disciplines. For example, a person might comfortably combine his or her individually constructed religious worldview with cosmology but at the same time be unable to link it with evolutionary biology. Another example might be a person who combines the scientific worldview with the religious story of creation but at the same time cannot accept restrictions imposed by a given religious system on the freedom of scientific research. The list of examples of possible combinations of religiosity and scientificity could be very long.

Now, if we return to the initial four models of interaction between religion and science—conflict, contact, contrast, and confirmation—we see that they can be applied only if religion and science are analyzed at a high level of abstraction, totally detached from empirical life situations. In actual social and cultural contexts, neither religion nor science functions as a monolithic entity. The concepts of religion and science cover an extremely diverse range of empirical manifestations of people's individual, collective, and institutionalized beliefs and patterns of behavior conditioned by those beliefs. Only by means of an empirical social scientific study of actual manifestations of involvement of specific elements of given religious systems and specific elements of given scientific disciplines by people in their everyday life situations may we gain better understanding of the role of religion and science in societies and cultures and of the interaction between these two forms of cultural information.

In order to explore religiosity and scientificity we might want to listen to ontological narratives told by individuals representing the categories presented earlier. We can assume that the producers of religion and science might reveal higher levels of religiosity and scientificity than consumers. The complexity of these two manifestations of connectedness to religion and science might lead us to the construction of a model of analysis that would reflect the embodiment of religion and science and help us translate

the ontological narratives into our conceptual narrative. As I indicated earlier, this translating is going to take place within the confines of public narratives and, above all, in our particular case, within the framework of postmodernism functioning as a metanarrative both for our respondents and ourselves. I would like to add that, whether we are sociologists or we represent other disciplines involved in the study of religion and science and of their relationship, "as commentators on human experience, [we] share . . . [our] object with countless others, who may legitimately claim a first-hand knowledge of that experience. The object of . . . [our] commentary is an already experienced experience, coming in the shape of a pre-formed narrative rather than a set of raw unnamed sensuous data waiting for a meaning to be offered by the subsequent commentary" (Bauman 1992, 73).

Embodied Religion and Science Model of Analysis

If we put together what has been said so far about religion and science, we could devise a model based on the Model of Social Becoming. The embodied religion and science would acquire the form of real potentialities existing within social-individual-institutional agencies that are actualized by these agencies in the process of praxis. The religiosity and/or scientificity of any particular individual or group, whether a producer or a consumer, embedded in a definite time and space, in a definite material and ideological (including political) environment, and so on, would condition the actual interplay between elements of definite religious systems and definite scientific disciplines. The interpretation of ontological and conceptual narratives of religious agents and of scientific agents, within the context of public narratives and metanarratives, would expand the horizons of our knowledge about the social construction of religious and scientific information and about its impact on individual, group, and institutional behavior. I believe that only in their embodied version can religion and science and their relationship become the focus of a meaningful social scientific study.

The presented model, like the Model of Social Becoming, is founded on the recognition of the two basic paradoxes of human experience (Sztompka 1991, 16–17): (1) the paradox between social constraints and individual freedom, between uniqueness and membership, subjectivity and reification, individuality and participation, and (2) the paradox between persistence and change, stability and movement, repetition and novelty. These dualities are irreducible, and they are indispensable traits of society and culture that require that the approach to social and cultural reality, including religion and science, be cross-disciplinary and holistic.

I will close with a paraphrase of a passage that was initially formulated in regard to sociology (Bauman 1992, 204) but which seems to fit well any

process of the construction of knowledge, including the religious and the scientific. To be effectively and consequentially present in a postmodern habitat, religion and science must consider themselves as participants (perhaps better informed, more systematic, more rule conscious, yet nevertheless participants) of never-ending, self-reflexive processes of interpretation and devise their strategies accordingly. In practice, this will mean in all probability replacing the ambitions historically displayed by both religion and science to function as judges of common beliefs on a variety of issues, as healers of prejudices and umpires of truth or The Truth, with the ambitions to clarify the interpretative rules and to facilitate communication and relationships between all parts (events) that make the "web of life."

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