

RALPH WENDELL BURHOE AND THE TWO CULTURES

by *Eduardo R. Cruz*

Abstract. Ralph Burhoe developed his proposals for a social reformation at a time when the “two cultures” debate was still active. It is suggested here that Burhoe, sharing with his contemporaries an understanding of culture that was Western and normative in character, overlooked the distinction between the culture of the elites and popular culture, and consequently between religion as presented by theologians and church officials and popular religion. Therefore, his proposals for the revitalization of traditional religions, even if implemented, would not work. Some contradictions within his own program are pointed out, and the social role of the sciences after World War II, as well as the ambiguities of their presence in the so-called underdeveloped nations, is analyzed. As a positive conclusion, it is suggested that Burhoe’s main contribution should be sought, not in his outline for a social reformation, but in his role as an organizer of the dialogue between religion and science.

Keywords: ambivalence; culture; domination; religion; resistance; science; syncretism; utopia.

When Sir Charles Percy Snow published his Rede lectures (the famous “The Two Cultures and the Scientific Revolution”) in the late 1950s, he was certainly aware that he was igniting a burning issue. In fact, since the launching of the Sputnik satellite in 1957, the old debate regarding the roles of the sciences and the humanities in shaping Western culture has gained strength, taken on new forms, and generated a lot of misunderstanding. For example, while Philip LeCorbeiller, a mathematician from Harvard, contended that “not until lawyers, historians, novelists, playwrights, newspapermen, and

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above all philosophers (who are already leading the way) learn the basic sciences in school and college shall we have the culture this age requires,"¹ Douglas Bush, defending a strong program in the humanities, argued that, after Sputnik, "we had an immediate wave of zeal for the despised egghead, for 'crash programs' in science. It would all be rather comic if it were not tragic" (Bush 1959, 182).

This debate is well known, and it is not our purpose here to continue it. Our argument starts with the perception that the two sides (the scientists were at that time more visible than their opponents) shared at least one very important notion: their understanding of "culture" as high culture, the Western standard held to by the elites, toward which every educational effort should be directed. The debate showed once again how schizophrenic our civilization is. Anthropologists dealing with other peoples had for decades worked with another, more descriptive concept of culture. At the same time, everyone in the academy, including anthropologists, looking only to the West, still operated with an older, Romantic and normative notion of culture.² Culture and cultures, cultures toward Culture: a hypostatized concept, demanding vassalage and conversion; an entity with a divided personality (science versus humanities), yet appearing to all other cultures as a single deity, inspiring awe and fear at the same time.

If the fate of other peoples is reasonably well known to us, less attention has been given to the relation between high and "low" (popular) cultures in our own midst.³ Many scholars today are pursuing a twofold question: First, how progressive has high culture been in the past few centuries (or decades) and how widespread, spatially and temporally, within the population? Second, if there is a gap between official, or "cultured," culture and popular culture, is it being narrowed? Is it possible to foresee its disappearance?⁴

It will be our contention that most of the debate between science and the humanities has been very narrow in its understanding of "culture," and we will call attention to the other clash, that between academic culture and popular culture. We will consider in particular the appearance of this narrowness in Ralph Wendell Burhoe's proposals. This shift of focus also will help us understand why the messianic intentions and attempts of scientists to offer redemption to society—in all ages, but particularly after World War II—were so hopelessly out of touch with social reality. The postwar years also saw an immense effort to share with "underdeveloped" countries the bounties and goods of Western civilization, an effort strongly endorsed by scientists.

RALPH BURHOE AND THE PURPOSE OF A SCIENTIFIC
THEOLOGY

In his sympathetic and well-documented biography of Ralph Burhoe, David Breed shows how Burhoe's vision for a better world, in which science and theology would be reintegrated, was shaped by a solid, albeit slow, process (Breed 1992). In his effort to show the originality of this vision, however, Breed overlooks the influence of others in Burhoe's thought, and fails to show the genealogy of many of his concepts, including that of culture.

Let us first delineate the essentials of Burhoe's vision. Very early in his life, he became convinced that, if the world was in such a state of disarray, the major reason was the sluggishness of religion in general and theology in particular in following the pace of scientific and technological advance. He undertook as the task of his life to render the religions credible to this age by translating their basic concepts into the language of the sciences. This goal eventually was accomplished by the development both of the basics of a "scientific theology" and of proposals for a social reformation allegedly rooted in this new understanding of reality.⁵ This twofold task was informed by the belief that scientific knowledge helps to reveal and to confirm what is required of human beings to be saved. Religions would help us to act according to the "will of God," as it is embodied in the processes of nature.

It is Burhoe's program for a social reformation that is of particular concern for us here. Throughout the nineteenth century, as science became professionalized, scientists in America slowly developed an adherence to a "religion of science," which comprised both theistic (science as a surer way to God than dogmatic religion) and atheistic (science showing the uselessness of God) strands.⁶ Science had (and a Baconian influence is clear at this point) a messianic, redemptive role—it was to contribute not only to the physical, but also to the moral rehabilitation of humankind. Scientists, therefore, were supposed to spread the good news—to evangelize, to inform all the people that only the truth revealed by the sciences will set them free (cf. John 8:32).⁷ Against this background the conflict between science and religion was taken for granted a century ago (see LaFollette 1990, 151–57). It was in fact, as we now recognize, a conflict between two sets of beliefs. Burhoe, in his college years, was exposed to a self-indulgent environment that regarded religion as superfluous. He also was under the influence of those who believed that this conflict could be resolved by letting religion be updated by the sciences (see, for example, the contributions of Kirtley Mather

and others in Cotton [1931]. See also Mathews [1924] and his reference to a scientific theology.)

The next strong influence on Burhoe's ideas came from his years as executive officer of the American Academy of Arts and Sciences. Among the outstanding scholars with whom he had close relationships we may highlight Harlow Shapley, editor of the much acclaimed *A Treasury of Science* (Shapley et al. [1943] 1954). Numerous witnesses portray Shapley as a champion of the religion of science (Burnham 1987, 338; Gilkey 1993, 218), but it is Burhoe's own account that is the most compelling. For example, after quoting a long passage from Shapley, Burhoe concludes, "I suggest that natural piety coming out of such impious men is a growing trend. I think our new theologies and our new pietistic poetry will become enriched from such sources" (Burhoe 1971, 176). Elsewhere he acknowledges the contribution of "some of the scientists with whom I have been more closely associated in the institute [Institute on Religion in an Age of Science (IRAS)] and from whose lights my own is nourished" (Burhoe 1960, 78).

Burhoe was seeking after a scientific religion (or theology—there is some ambiguity at this point) that could overcome the predicament of the West, then further threatened by atomic destruction. Shapley wrote, "We need a new set of principles for the guidance of today's deciders and today's actors on the international stage. . . . I foresee a civilization on this planet sufficiently unified and intelligent to forestall the annihilation of the human race" (Shapley 1960, 12). Burhoe subsequently developed this theme in greater detail.

RELIGION AND CULTURAL REFORM

The multifaceted concept of "culture" plays a major role in Burhoe's understanding of religion. Three roughly defined ideas of culture seem to be present in his work: (1) culture as a synonym for Western civilization, as most scientists regarded it at that time;⁸ (2) culture as that which characterizes a specific people, an idea that allows for a plurality of cultures; and (3) culture in the singular again, as that feature of evolution which distinguishes humans from apes and comes in continuity with genetic evolution. It is not our purpose to present a detailed view of each idea throughout Burhoe's writings. Two brief examples suffice to indicate how he unfolds them in his argument. One is extracted from a lecture of 1964, entitled "The Sciences, Humanities, and Religion—Can the Three Cultures Be Reunited?," that reflects the framework imposed by C.P. Snow on the two-cultures issue (numbers in brackets refer to the three meanings of culture just indicated):

My message to you is that the traditional curriculum content of liberal education is fast becoming obsolete for life in a new age of science. The crisis is the fragmentation of our culture [1] into two or three or more parts and a breakdown of the organic unity of our intellectual apparatus which threatens the very life of our civilization. . . . No society or civilization, primitive or sophisticated, can long endure without a culture [2] built around and integrated with a religious or value-transmitting core. (Burhoe 1964a 1, 11)

In the same year, he also gave some of the scientific underpinnings of his argument:

My genetic elements are all over the place, not just in me. But in addition to the gene pool there are other elements of the anatomy or physical structure of the soul that also endure from as far as we can see in the distant past to the distant future, such as the culturally transmitted patterns of structure and behavior and the cosmic ground that backs the intertwined evolution of the genotypic and cultural [3] patterns in human life. We have solid, physical grounds today for religious theories or theologies of an immortal soul. (Burhoe 1964b, 25)

In his proposal for a social (or cultural) reformation, Burhoe assumed the third meaning (it is impossible to have moral reform and dialogue among religions if altruism is not allowed by cultural evolution) and dealt softly with the second, having in fact the first meaning in the back of his mind. The citations and arguments throughout the rest of this paper will suggest why I believe this is so.

We mentioned above that Burhoe was nurtured in an environment many believed to be a scientific age, meaning, in other words, that science would be the spearhead of any further cultural development.⁹ The belief was strengthened when, after World War II, scientists moved conspicuously to the forefront of efforts for international cooperation and aid for the “underdeveloped” nations. It was then that they were confronted by the diversity of cultures and religions, and their reaction was a mixture of tolerance and evaluation in the face of the well-established Western standard.

Let us see, against this background, the essentials of Burhoe’s program. As opposed to many of his peers (but in line with the examples of many renowned predecessors, as mentioned above), he stressed that human beings could not advance much in their science and technology without a transcendent power to guide them. He saw religion as fundamental if a moral rehabilitation were to succeed, insofar as the misuses of science and technology were to be avoided only by resorting to the “traditional wisdom” of religion. Yet, religion without the sciences would wither away—science is, as it were, the “savior” of the role of religion in our society.¹⁰ The following passage neatly illustrates this point:

The sciences are building a more honest, more effective, more rich picture of the hidden secrets of our own natures and of the vast reality in which we live and move and have our being than has ever before been built.

Science provides the basis for a new testament, a new scripture of truth about man and his destiny. Even if this revelation should gainsay any of the previous revelations of human destiny, it will be believed anyway. The light is too bright, and the evidence of its rightness is too clear.

But it has been the discovery of several of us that the revelations of science do not basically gainsay traditional religious doctrines; science does not so much destroy as it fulfills the previous testaments. . . .

Thus the scientific approach to religion will be a humble effort to read the true story of man, his relation to the source of his being, and his consequent duties and privileges. This approach will respect the existing religions in the same way that agricultural scientists respect agricultural traditions. The scientific approach to religion, like all the former approaches, cannot possibly transgress the sovereign law of the source of being, but can only seek to discover or reveal it. (Burhoe 1960, 77-78)

We could not agree more with this last statement. Later on we will analyze the compatibility of these two assertions, (a) that "the application of scientific knowledge to religion" may "alter or improve it" and (b) that "this approach will respect the existing religions" (Burhoe 1960, 77-78). But for the time being we will focus on Burhoe's reference to agriculture and medicine, which are turned into metaphors: "It is further presumed that, just as constructive aids to agriculture or medicine in the light of the sciences have been welcomed in every culture and given man greater opportunities in these areas of life, so also will be welcomed scientific aids to religion" (Burhoe 1956, 2, emphasis mine; see also Burhoe 1974, 35).

Several questions can be raised with regard to this prophecy. The first concerns the statement's logic: To what extent does this "so also" introduce a non sequitur? The second addresses a more important, empirical issue: To what extent can we, in fact, say that modern agriculture and medicine "have been welcomed in every culture"? This statement has to be qualified (at least after 1968) even in our own culture!¹¹ Instead of strengthening old cultures, the process of modernization has in practice meant the spread of Western civilization and its standards of evaluation.¹² A third question may be stated in the following way: If modernization and colonization have, until now, proceeded hand in hand, can we foresee (as the earlier quotation from Shapley suggests) a time when, all aspects of these cultures having assimilated the "scientific aids" evenly, actual pluralism and mutual tolerance arise? In order to answer this question, we return to the distinction between high and low cultures.

THE IMPORTANCE AND AUTONOMY OF POPULAR
CULTURE

The concept of "popular culture" is a misleading one, to which at least three interrelated meanings have been attributed: (a) mass, or kitsch, culture (Mead 1967, 170); (b) folklore, or "museumlike" culture;¹³ (c) culture of the populace, as opposed to high culture (arts and sciences). It is to this last meaning that we shall give a closer look. Scientists, in their capacity as evangelizers, also have been "popularizers" in their attempt to convey to the "laymen" (as opposed to "men of science," as these scientists came to be known in the rhetoric of the time)¹⁴ not only the latest accomplishments of science, but also the scientific method and the scientific attitude concerning hygiene, morals, and citizenship. But a previous, negative task was utterly necessary: to cast out superseded science, error, and superstition. With such mighty enemies, it is no wonder that scientists have been particularly suspicious (to the point of intolerance) of popular culture, and at best condescending and patronizing toward the "laymen." The following passage from a zoologist is typical of a mentality that remained unscathed for more than a century:

We must not judge [the ancient] forefathers of zoology too harshly, however, for they were beginners, and in many ways, scientifically speaking, mere children. All of their ideas were beclouded by superstition, legend, and folklore. In this respect they were in no way different from the mass of unscientific-minded people today. (Newman 1924, 11-12)

Child/adult, savage/civilized, primitive/modern, uncultured/cultured—how easily this series of words-turned-into-metaphors springs to mind! Education and popularization of enlightened thinking would be the solution for such a shameful state of affairs, a conclusion to which Burhoe also subscribed.¹⁵ As was mentioned above, however, he differed from most of his contemporaries in allowing for a plurality of religions: spreading the gospel of the sciences, along with the development of a scientific theology, would revitalize existing religions. How was this to be accomplished? Here is his answer:

And yet I wish to suggest that our salvation today lies in religion. This suggestion is preposterous enough; but, when I add that religion must also be scientific, both the high priests of the traditional religions and the high priests of science will surely say that this is a mad prophet indeed, for he puts words together that everyone knows cannot be put together—a scientific religion. (Burhoe 1960, 66-67)

Earlier we stated that many people had the same "preposterous suggestion" before him, but this is not the main point of our

comment. Burhoe was really proposing putting the high priests of both sides together, a kind of world parliament that would follow the (supposedly) existing "parliament of the sciences" (Burhoe 1986, 465).¹⁶ Following our argument, at least two disputable presuppositions in his suggestion are conspicuously unexpressed: first, that "science" would coincide with what "men of science" had to say about this endeavor, leaving aside any "popular science," and, second, that traditional religions would be well represented by what their "high priests" could tell (in a Western language!) about them. We will return to this aspect of the high-low distinction later on.

Another disputable presupposition, to be found elsewhere, concerns the fathers of the church: "My proposal is that Christian scholars should be today as enterprising and flexible as the early Christian fathers, that they should become acquainted with the new 'philosophy' or worldview of the sciences, and interpret their message in its terms" (Burhoe 1964a, 14). This statement, however, overlooks the complex interrelationship between classical Christianity and the popular cultures in which it lived.¹⁷ Burhoe, with his emphasis on the elite (Christian "Fathers"), tends to overlook the relevance of these cultures to the future of Christian religion.

The distinction between high and popular cultures is thus ignored in these accounts. Social scientists use the word *domination* to expose the problem—there are dominant and dominated cultures, the latter of which survive by many forms of resistance (see Marglin and Marglin 1990). They have their pride and their autonomy, and their bearers have a "gut feeling," for the good or for the bad, that the "men in the white coats" are trying to fool them.

If popular culture in the most advanced countries of our own civilization has a surprising resilience, just imagine how recalcitrant the bearers of other, more "primitive" cultures are. As Burhoe takes for granted the benign effect of science on traditional medicine and agriculture,¹⁸ the following argument is fitting at this point:

Once the aims of medical practice are seen to go beyond the atomic individual and his more or less biologically obvious state of health, the symbolic 'theory' takes on two characteristics which are not present in medicine understood purely scientifically. The first is the fact that psychological and social norms for the individual and his group are not given by obvious indicators of bodily 'health,' and hence what counts as successful healing itself has to be defined by the symbolic order that is presupposed. . . . Secondly, for the cure to work, it is essential that the presupposed symbolic theory be internalized in the patient and his relevant social group, for it is only in terms of their belief in this theory that the required psychological effects can be expected to take place.

Neither the definition of social norms, nor the understanding of and belief in medical theory on the part of patients and their groups, are supposed to be necessary in the standard account of scientific medicine.¹⁹

What is valid for medicine is even more so for religion, insofar as it, through myth, ritual, and conduct, is the source of meaning for social norms and psychological interpretation in a group.²⁰ This means that a scientific theology, even if possible and actual, would be unable to “revitalize local religious practices” (Burhoe 1974, 35) to the extent that its worldview (Western in many important respects) would be misunderstood and resisted by the social framework of meaning that ties up the religion to any given group. In other words (even though what is asserted here is too much of a generalization), in trying to explain the religious core that underlies all the religions of the present and the past (such is Burhoe’s premise), the sciences would in practice (even against the best intentions of their practitioners) explain away the religion and, by the same token, the culture of the group.²¹ As is argued below, in practice Western influence among other peoples has turned rituals and beliefs into folklore, exquisite practices for Western tourists to see with no further bearing on the actual conduct of those peoples.

THE AMBIVALENCE OF POPULAR CULTURE IN LIGHT OF BURHOE’S PROGRAM

The predicament of religions in the modern world entails, in addition to its moral aspect, an intellectual problem, which Burhoe identifies as a lack of awareness of their true nature (Breed 1992, 62). It is at this level of *explanation* that contemporary anthropologists, with their relativist standpoint, would take issue with his assertions. Western science has an ideal of method and truth that cannot be compromised; otherwise it will lose its nerve. Burhoe also is uncompromising at this point. But he, like most of his peers, misses the political overtones of this stern, almost puritanical, standpoint. As Mary Hesse puts it:

No “epistemology of symbols” will ever compete for generality and rigour with the ideal formulations of western logic and science. This is one reason why philosophers feel free to ignore the social function of belief. But a much deeper reason for denying that any sort of social goal can ever in itself be a mark of knowledge, is the entrenched belief that scientific thought represents the “correct” solution to the problem of knowledge as this has appeared in different societies and different periods of history. (Hesse 1985, 378)

It is not my intention here to enter into endless philosophical discussions of rationality and relativism.²² It is, however, difficult to avoid maintaining this stringency of the norms of science, when in contact with other modes of thought, without some degree of coercion. This sort of cultural imperialism is attributed to the sciences in both Western and non-Western cultures (see Marglin and

and Marglin 1990, 7–10 *passim*). In Burhoe’s case (and certainly much against his intentions, as we can see in the citations throughout this paper), this kind of imperialism is unavoidable for at least two reasons. The first results from his close intellectual affinity with neopositivism (Burhoe 1974, 24 ff.), recognizably the strictest philosophy of science of this century. Second, he understands theology, like medicine or agricultural science, as an area of *applied* science (Burhoe 1970, 120–21). In other words, as soon as science “catches up” with valid, traditional wisdom, any *new* knowledge will be yielded by the sciences²³ (the “revelations by the sciences,” as he usually puts it); chances are, however, that not every group bearing a particular religion will like scientists and their theological partners minding its business when it comes to explaining the world (See Cruz 1987, 379–81).

The word *traditional* brings to our mind conservative thinking and mores. Religion, resting on tradition, is challenged by the sciences, which are progressive.²⁴ This presupposition pervades the arguments of anthropologists of an older generation, many of whom are cited by Burhoe; any change would be brought about by an evolutionary pattern, modeled after the biological one (Burhoe 1971, 47). Natural selection, or Nature, assumes in his outlook the role of Providence in traditional Christianity.²⁵ Citing a passage from Darwin’s *The Origin of Species*, Burhoe feels able to assert that Nature does better than human beings when it comes to selecting what is good and what is evil. The prescription then for good behavior is *adaptation*: to follow what is required by Nature herself, obeying the laws of natural selection.²⁶ Religions, conveying the wisdom handed down through the ages, tested and selected in an evolutionary fashion, are the places where humans learn what the “will of God” is and how to act accordingly, leading to a new harmony between knowledge and values.²⁷

“Religions are properly conservative,” Burhoe observes (1971, 155), and in this respect he follows the insights of anthropologists who belong to a functionalist school. Any further progress, as we have said, would have to come from the sciences. But too much emphasis on the need to adapt to a scientific-technological world (and we cannot separate the sciences from a Western outlook) leads to an overstress on the function of religion as an adaptive one.²⁸ Its prophetic, dysfunctional role is thus misrepresented: the originary and originating myths of religions, standing over against all sorts of idolatries and presumptions of this-worldly wisdom (including the “revelations by the sciences”), and against unholy alliances between knowledge and power. Religion cannot be just technology, applied

science, or the result of a Darwinian evolution. In its autonomy, it may revolt against any attempt to translate its basic myths and traditional concepts into contemporary knowledge.²⁹

Cultures other than official, Western high culture, progress (if their bearers are not killed first), not by adaptation or evolution strictly speaking, but through *syncretism*—the merging of different elements, new and old, into a whole, even where no coherence is apparent.³⁰ That is what makes popular culture disgusting to the “high priests” of science and religion alike: differing from folklore, a passive bystander, popular culture is in a constant process of bricolage, taking for its own purposes whatever is handed down from the high spheres of the academy. New pieces of knowledge and new modes of behavior are given meaning by the people, not by the intellectuals who study them.³¹

Resistance and resilience in the face of the social utopias of the past and the present—that is the mark of popular culture. We can draw two consequences from this assertion. First, even if we side unequivocally with the sciences (and that is my personal inclination), avoiding relativism and demanding the credentials for truth of any set of beliefs, it is not possible to incriminate those who do not behave according to the laws of Nature.³² If people do not follow the prescriptions of a religion informed by the sciences, this is not because of any lack of knowledgeable people telling them what to do or by bad-will. It is rather because in the actions and thoughts of people there is always an excess of meaning; meaning is always advancing, as a horizon, ahead of any interpretation of it. Second, being always on the side of “law and order,” these proposed utopias do not allow for genuine freedom for the individual (see Davis 1984).³³

It is true that Burhoe, repeating an argument held especially by those who emphasized the dogmatic character of religion, stressed the changing nature of the sciences:

It is as if the enterprise of science, like the enterprise of the evolution of life, is one of imposing a small degree of invariance or order on the surrounding chaos; but we soon find that the comprehensiveness of our pattern is terribly finite in an infinite ocean of chaos, so that we are constantly revising and reforming as our patterns of order evolve increasingly to correspond, adapt, or fit the realities of the infinity around us. (Burhoe 1971, 174)

This truly humble acknowledgment that “the map is not the territory” suffers, however, from an intrinsic ailment: the mode of change in the scientific field usually does not match the mode of social change.³⁴ The episode of eugenics at the beginning of this century suggests to us how the best science of a period may be ill suited to its environment. Citing Donald Campbell at this point, Burhoe would

reply that “on evolutionary grounds . . . if modern psychology and social science disagree with religious tradition on ways of living, one should . . . choose the traditional recipes for life, for these are the better tested” (Burhoe 1971, 144).³⁵ But his reverence for the “hard sciences” is so great that it may overwhelm his respect for the “traditional recipes for life”.³⁶

Paradoxical as it may seem to some, I predict a relation of the sciences to a dawning new worldwide “theological” movement which will relate to, reform, and revitalize local religious practices in the next few decades. . . . This will require a theology (or cosmology and anthropology) shaped by the *physical sciences*. . . . When this begins to happen a little more fully, there will not only be a firm science of religion but also a living religion within high scientific culture to be scientific about, just as in the case for the equally ancient art of medicine. (Burhoe 1974, 35; emphasis mine)

Burhoe’s understanding of the “hard sciences” follows that of the logical empiricists (as the article cited here makes clear), which makes his prophecy all the more paradoxical. To resolve this paradox (science in conflict with traditional wisdom versus science revitalizing religion) a quasi-demiurgic character to time should be presupposed.³⁷ In other words, it should be believed that *eventually* scientific advance would match and then go hand in hand with religious traditions, “just as it has happened with modern medicine.”

This premise, however, cannot be uncritically accepted, as we suggested above: the advance of the biological sciences does not always match with medical practice, and the common sense of experienced doctors still is, and will continue to be, the best source of good medicine.³⁸ The hard sciences, moreover, sometimes generate confusion in the religious field, as the recent spread of a new gnosticism “based” on quantum mechanics and cosmology may suggest (see F. Capra’s and other New Age writings). Burhoe’s utopia (and it is a utopia, to the extent that is based on a prophecy for the next few decades) of religions being revitalized by a worldwide scientific theology, therefore, would work only on an authoritarian basis. In other words, the leaders of science and religion would have to have the means (which they might delegate to others, as governments do with the police) to enforce the “inescapable laws of nature” (Burhoe 1971, 173–75) against the resistance of the majority of the people.

This is not in accordance, of course, with Burhoe’s explicit intention. Reiterating what we have been arguing so far, however, the lack of an adequate grasp of the relation between high and popular culture works against the best of the intentions. I would like to conclude this argument by pointing out a specific example of this struggle, one that comes closer to my experience.

RELIGION, SCIENCE, AND THE OUTCASTS IN LATIN AMERICA

At the end of World War II, a massive effort was undertaken in order to reach a level of international cooperation sufficient to provide for a lasting peace. The United Nations and UNESCO were instrumental in this respect, but they started to work with a threefold scheme that later came to be known as the “three-world” plan. Recently liberated nations in Africa and others with a long history of political independence, peoples with old and sophisticated cultures and others where Western standards were dominant, were all lumped together as “underdeveloped” nations. Programs for their development were then fostered, and scientists formerly engaged in the war effort eagerly helped to establish research centers in these countries. After all (for very complex economical and ideological reasons), it was widely believed that basic (pure) science was a key factor in a country’s economic and cultural development.

Latin American countries quickly adopted this outlook, even though many of them (e.g., Argentina) had a sizable middle class with Western standards of living and thinking, due largely to heavy European immigration in the nineteenth century. Major centers of research (especially in the biological sciences) were already established, but the postwar efforts also led to the establishment of science policies, centers of research in the physical sciences, scholarships, and new ways of structuring universities to follow North American standards.³⁹

For a variety of reasons, however, these programs had a very limited success and, both at the educational and at the scientific levels, these countries remained “underdeveloped.”⁴⁰ A theory of “dependence” was elaborated in the 1960s, and resentment against “American imperialism” grew to a high level. The poor increased in number, partially as a result of the fast pace of urbanization. Something new happened, though. Several movements of liberation sprang up, mostly informed by Marxism—class struggle, instead of colonial wars, the revolt against complacent elites who maintained a tight grip on economic and political power. Grass-roots Christian communities starting in the late 1960s, informed by the thought of Paulo Freire, had their own brand of liberation, which emphasized the outcasts of society, those too illiterate and poor to understand Marxist theory, those who could be emancipated only through their own traditional rituals and storytelling. “Liberation theology” (as it became known in the English-speaking world) was born. It was a unique and original effort to revitalize existing religious

traditions, mainly through the "scientific aids" of the social sciences. It could have been a useful laboratory to test some of Burhoe's prophecies.

Twenty-five years have passed, however, and little has changed, at least outside the institutional level of the churches. The poor are poorer, and the high hopes of past decades are gone.⁴¹ Many wonderful lessons have been learned, in any case, and one of them is exactly the resistant, syncretistic, and resilient character of popular culture. As opposed to older, descriptive studies of "local folklore," recent work in the social sciences stresses what has been called "participatory research," which gives more active voice to those who are under scrutiny. In other words, "today's deciders and today's actors" (Shapley 1960, 12) are on many occasions those who are at the margin of society, not those close to power.⁴² The danger of relativism and of romanticizing popular culture is certainly there, but it is a price worth paying if a certain level of emancipation is expected.⁴³

Four final considerations can follow from the short account above: first, postwar models promoting development on a large scale through science and education did not work and now belong to a bygone era; second, social sciences, as opposed to the claims of logical empiricism, have some autonomy in the face of the "hard" sciences, and religious revitalization can happen without the aid of the latter; third, popular culture has its own dynamics, often opposed to high, "official" culture; fourth, the sciences have many "bastard children" within popular culture, bizarre offspring that do not follow the standards of rigor of their parents, but are more appealing to the populace. Thus J.C. Burnham, discussing the North American situation, sees with sadness that "by the late twentieth century, authority in popular science led far away from the scientific way of thinking and even, for authority, was based more on media standards than on peer review" (Burnham 1987, 239). Even worse, superstition appears to be winning the day: "It was in this functional sense, then, in attitude and behavior, that superstition won in the popular arena in the United States: through advertising, superstitious thinking and antirational authority to a substantial degree dominated the culture" (Burnham 1987, 247). And the same is true, *mutatis mutandis*, for Latin America too.

CONCLUSION

In this paper, we have considered the essentials of Ralph Burhoe's proposals and prophecies for a social reformation, which sought to

overcome the conflicts between two (or three) cultures through revitalization of religious tradition based on a scientific theology. Once knowing the truth necessary for salvation, Burhoe believed people would abide by it. We raised several questions with regard to this program: How progressive has high culture been? How widespread is it among the population? Is the gap between high and popular culture being narrowed? Can we foresee a time (in the next few decades—the time span proposed by Burhoe) when scientific aid could become separated from colonialism and imperialism?

The answer to the first question was ambivalent, to the others by and large negative.⁴⁴ Not only has Burhoe's proposal become anachronistic (by the time it was developed—the 1960s and 1970s—the social and intellectual outlook had changed dramatically),⁴⁵ but it also ignores the crucial distinction between high and popular culture, and thus the distinction between official religion and its popular, syncretistic manifestations. As we mentioned above, Burhoe understands the role of traditional cultures only in the framework of a global, science-based high culture:

I prophesy that each of the religions will tend to be resurrected or revitalized and transformed as it effectively translates the viable wisdom of its tradition into this new symbol system of the sciences, and as it reforms and extends the traditional wisdom to adapt human living to the requirements for living in the new one-world *culture* of increasingly closely interdependent billions of people on Spaceship Earth. (Burhoe 1971, 184)

In what can be considered his intellectual testament, moreover, he wrote:

If, as our theory predicts, the powerful new interpretations [supplied by the sciences] can show local religious leaders the virtues of their own religion as a highly significant local adaptation whose functions can be extended and revitalized in the new light, could we not expect these leaders also to respond and to apply science as is done in agriculture, medicine, and other technologies? Would not the fact that in religion, too, there may be a hitherto hidden universal system of underlying facts and values (a pan-religious “biochemistry”) drawing each local religion to interpret itself in terms of the broader and deeper understanding of worldwide sacred facts and values for human life? I believe that under active promotion and human effort to discover what is required of us, such a scientifically suggested common core of all religious faith could lead to a world community on the inside of a sufficiently common faith, with reformation perhaps during the time remaining to prevent a nuclear holocaust. (Burhoe 1986, 461)

It would be easy today to dismiss such a grand and noble vision as wishful thinking. After all, my admittedly cursory deconstruction of Burhoe's proposal leads almost unavoidably in this direction. What, then—some contemporary Diogenes seeking guidance in a

causally pluralistic world dominated by neoliberalism might ask—is left? I have some final comments in this respect.

First, there is no reason why we should ignore or forget the great “men of science” of the past; otherwise we will repeat their shortcomings and skip their virtues. Ralph Burhoe, for one, left us a legacy that should not be underestimated, even if his theories and cultural proposals have been disregarded by many.⁴⁶ The fact that recently there have been science-and-religion “tracks” at meetings of the American Academy of Religion and American Association for the Advancement of Science is due largely to his inspiration and leadership. Second, a degenerating, albeit sound, research program (to use a Lakatosian terminology) is to be followed by a progressive one, and this is happening. Despite the sluggishness of both scientific and theological communities in responding to this appeal, dialogue and common efforts are taking place, resulting, for example, in many valid publications, at both the academic and the popular levels. I have had, myself, the opportunity to outline some proposals in a journal similar in scope to *Science* (Cruz 1995), suggesting that science and theology can (and have to) work together as allies in the battle against a wave of irrationality that would mock any serious merging of science and religion. Third, interreligious dialogue also is stronger than ever and, although we cannot be too naïve about its meaning and scope, is receiving wide support from all sides.

Faith, hope, and love are called theological virtues because they are of a transcendent nature, that is, they are not the simple outcome of analyses done at the biological or social levels. If today’s outlook is fuzzy, Burhoe taught us (mainly through his actions) that the traditional wisdom handed down by the manifold of religious communities must be respected and that virtue (strength) is what is required in a self-justifying world that nevertheless is eager to jump into intolerance and war.⁴⁷

NOTES

1. LeCorbeiller (1959, 173). The reference to philosophers “leading the way” probably meant the logical empiricists of the day.

2. This assessment of the two-cultures debate is not new—see Leach (1967, esp. 30 ff.). For a detailed account of the Romantic, normative concept of culture, see Clayton (1980). For the “schizophrenic” attitude of Western scholars, see Hatch (1985).

3. The usage of *high* and *low* is ad hoc. It is linked with “higher learning” and with Burhoe’s reference to the “high scientific culture” (discussed later in this article). Reference to the concept of the “High Church” is also useful.

4. Regarding the concept of a “cultural gap,” see Holton (1967), ix-x.

5. Burhoe’s prophecies for a social reformation seem, however, to antedate his scientific theology, which would help to explain why a concept of “high culture” is presupposed as a given in his discussion of biocultural evolution. But we have no room to pursue this lead here.

6. For a good account of this development, and an extensive bibliography, see Burnham (1987).

7. On the evangelism of scientists, especially after World War II, see Greenberg (1971), chap. 2.

8. "Thus far I have spoken of science and the scientific tradition as a *culture*, a state of mind, almost as a state of grace. I have mentioned its universalism, its optimism, and its generally progressive and forward looking qualities with its implications of vigorous mental health" (Rabi 1970, 57; emphasis mine).

9. The following contrast by the renowned physicist I. I. Rabi neatly illustrates our assertion: "Above all our literary *heritage*, spoken or written, forms the basis without which civilized society is inconceivable. . . . If, as I have tried to maintain, science is a culture, we must try to apply similar criteria to the acquisition of this culture as we would to any other. It is all the more important since this culture is the *driving force* in the modern world now and in the foreseeable future" (Rabi 1970, 58, 60; emphases mine).

10. "Traditional religious beliefs and practices of the world are rapidly fading, and—quashing hope for help from science—fading largely to the degree that their populations encounter the world view of the modern sciences" (Burhoe 1974, 19).

11. The present search for "holistic" alternatives to "official" medicine and "organic produce" in agriculture are some examples of the suspicion directed against science-based styles of life.

12. The literature concerning the spread of Western religion, agriculture, medicine, and school-related education is immense. A good collection of essays can be found in Richardson and Webb (1986). See also Berger, Berger, and Kellner (1973) and Marglin and Marglin (1990).

13. For this and other relevant definitions, see *International Encyclopedia of the Social Sciences*, David L. Sills, ed., s.v. "Culture," "Folklore."

14. See, for example, La Follette (1990), esp. chap. 4.

15. See the almost unanimous opinion of scientists and academics in the 1950s and early 1960s, as represented, for example, in Obler and Estrin (1962). Burhoe, in his capacity as executive officer of the American Academy of Arts and Sciences (which publishes *Daedalus*,) could not be too far from the common sense of his day.

16. The expression "parliament of the sciences" seems to have a long and venerable tradition; see in this respect Tillich (1948, 244–45), as well as I. I. Rabi's "Brotherhood of Scientists" (Rabi 1970, 55).

17. For an overview of popular and learned views of nature in the Middle Ages, see Murray (1992).

18. That this was not true even for the North American case is argued by Blakely and Mathews (1986).

19. Hesse (1985, 369), commenting on previous work done by Victor Turner among the Ndembu.

20. The concept of "culture" has to do more with explanation than with behavior—see *International Encyclopedia of Social Sciences*, s.v. "Culture," 528b.

21. Burhoe reacts against those scholars of religion who try to explain it away—see Burhoe (1974, 21). Our argument, however, suggests that he was not very successful in presenting an alternative that would leave "traditional religions" intact—besides theoretical shortcomings, the very plasticity of religions would prevent an actual test of his ideas. This argument of his is revealing: "The religious gods of the life-explaining myths are themselves the naturally selected symbols which effectively motivated within the brain structures of those times the suitable response patterns to the realities that were in fact the creators and determiners of human destiny as now understood scientifically" (Burhoe 1981, 226). Any neuropsychologist would welcome this statement, as opposed to almost any religious person.

22. Two earlier sets of essays that helped to ignite the issue are Wilson (1970) and Hollis and Lukes (1982).

23. See also Burhoe (1973, 182).

24. This challenge becomes destructive, according to the same train of thought,

when religions try to compete with the sciences. See Burhoe's argument in this respect, following A. F. C. Wallace, in Burhoe (1974, 19).

25. Elsewhere, I have argued against this Romantic view of Nature with a capital *N* (see Cruz 1987, 42 *passim*). See also this statement by Heisenberg: "[In science] the object of research is no longer nature in itself but rather nature exposed to man's questioning, and to this extent man here also meets himself" (cited in Holton 1967, xxvii).

26. "It makes little difference whether we name it natural selection or God, so long as we recognize it as that to which we must bow our heads or adapt" (Burhoe 1981, 21). The passage to which Burhoe refers is a famous one, from chapter 4, in which Darwin adopts a poetic rendering of natural selection: "It may metaphorically be said that natural selection is daily and hourly scrutinising throughout the world" (Darwin [1859] 1872, 102-3). It is interesting to note, however, that Burhoe seems to disregard Darwin's own warnings against the personification of natural selection, insofar as he drops, in his many citations of this passage, Darwin's addition, from the second edition on, of the crucial word *metaphorically*. (Burhoe quotes Darwin from the Harvard Classics edition, p. 97 [Burhoe 1981, 111]). Burhoe does not seem to be aware, on the other hand, that Darwin himself was a Lamarckian and, in any case, regarded natural selection as nonprogressive (see Ruse 1988, 101-2; Ruse 1986).

27. Today there are serious doubts about the uniqueness of natural selection in providing for evolutionary mutations. There is much evidence in favor of what has been called "positive adaptation," which entails a qualified neo-Lamarckism (see Wesson 1991, chap. 11). If that is the case, the paramount role that Burhoe attributed to natural selection would be open to serious question.

28. See Rubem Alves's criticisms in this regard, suggesting that the sciences are themselves conservative (Alves 1984, esp. chap. 5). For the conservative social role of the sciences, see also Leach (1967, esp. 32-33).

29. One bizarre manifestation of popular culture, creationism, provides a contemporary example of this resistance. As for Burhoe's standpoint, the following excerpt is suggestive: "So long as the scientific-technological world view continues to spread, natural selection as it operates in cultural evolution is going to weed out the religions that are unfit for motivating men to ordered or viable behavior in that world" (Burhoe 1971, 185). But cultural evolution does not proceed mainly through natural selection—it does so in a Lamarckian fashion, using the mechanics of syncretism, as suggested below. For the essential difference between biological and cultural evolution, to the extent that we know something about them, see Ruse (1986); Dunnel (1988).

30. All contemporary studies on popular Catholicism, for example, converge on the conclusion that syncretism is not simple adaptation to an alien culture, but rather the affirmation of the identity of the people vis-à-vis those who are in power. See, for example, Gonzalez, Brandao, and Irrarazaval (1993).

31. This dialectic among mass, popular, and elite cultures is well exposed in Bosi (1994, esp. 322-45). The following excerpt deserves to be highlighted: "The people assimilate, *in their own way*, some TV images, songs and radio expressions, translating the signifiers in their codes of meaning" (Bosi 1994, 329, my translation).

32. Burhoe in his later writings reflected on the nature of evil, relating it to the evolutionary process (Burhoe 1981, 49-71, 105-8). His emphasis an adaptation, however, makes it difficult to separate resistance from deviant behavior. Moreover, as was pointed out above, it is hard to avoid the reduction of cultures to Culture in his thought: "On the grounds of my approach to theology in the light of the sciences, I feel confident that there will be a revitalization of religion, a religion operative among all peoples and *cultures*, . . . a *religion* that is as credible as atoms and gravity, a religion which will harmonize the ideas and behaviors in the various cultures and populations of the world, and enable them to adapt viably to life in a worldwide and transworld community dominated by fantastic evolutionary transformations of genes and cultures" (Burhoe 1982, cited in Breed 1992, 121; emphasis mine). One is left wondering what is the empirical basis for the belief that the "ideas and behaviors in the various cultures and populations" can be "harmonized" without resistance or coercion. We will return to this point below.

33. Burhoe's own scheme was somewhat ambiguous when it came to "unfitting behavior." See note 32 and Burhoe's assertion in note 29 that natural selection would "weed out the religions that are unfit for motivating men to *ordered* or viable behavior" (Burhoe 1971, 185; my emphasis). Scientists, on the other hand, are usually on the side of "law and order" when it comes to matters of truth and explanation: "In my experience scientists are quite as preoccupied with problems of orthodoxy and heresy as the most bigoted theologian, and certainly they are quite as conservative" (Leach 1967, 33).

34. There is another one, now recognized in this post-Kuhnian era: Once you accept that the map is never equal to the territory, the door is open to constructivism. Contemporary sociology of science took no time in rushing through this door, but the results and soundness of their findings do not concern us here.

35. Burhoe developed this argument at greater extent in his "The Source of Civilization in the Natural Selection of Coadapted Information in Genes and Culture" (reprinted as chap. 6 of Burhoe 1981).

36. He develops his preference in favor of the "hard sciences" in Burhoe (1974), starting a controversy about ways of studying religion like Bellah's (Burhoe 1974, 22-23).

37. The analogy with standard neo-Darwinism could not be stronger at this point. For the "given enough time . . ." argument, see Dawkins (1986, esp. chap. 3).

38. For those who still are not convinced, we should point out the continuous flow of conflicting reports in major medical journals, concerning such down-to-earth matters as the role of specific vitamins in maintaining human health. This kind of conflict also happens in courtrooms, when experts are called to testify. The tragic aspects of the advances in medical science are discussed in Lowrance (1986, 18-19, 22).

39. Having a large portion of the population immersed in popular Catholicism, moreover, these countries would seem to be ideal candidates for a program of religious revitalization such as that proposed by Ralph Burhoe, insofar as the blend of modern science and traditional religion necessary for an effort toward a scientific theology to be undertaken were already present.

40. These reasons are further explored in Cruz (1987, esp. chap. 5).

41. For an evaluation of these changes in liberation theology, and hopes for the future, see Maduro (1994), Libanio and Antoniazzi (1994), and Sobrino (1992).

42. The reader is referred at this point to the excellent book by Cristian Parker, *Otra Logica en America Latina* (Parker 1993).

43. We have restricted ourselves to popular Catholicism. If we encompass indigenous religions, the distance between learned and popular cultures is even greater. For an extensive study, which indicates the differences between older and newer approaches in anthropology, see Sullivan (1988).

44. Oppenheimer, for one, was very pessimistic about bridging the gap between the culture preserved with much effort in the universities, and mass culture fostered by modern technologies—see Oppenheimer (n.d., chap. 8).

45. From the point of view of the understanding of the sciences and their role in society, Kuhn's seminal work, *The Structure of Scientific Revolutions*, was a watershed and a fatal blow for logical empiricism and its dream of a unified language for the sciences. Reinhold Niebuhr and Hans Morgenthau also should be remembered at this point, to the extent that we are dealing with religions; see in this respect their criticism of postwar utopian ideals (Niebuhr ([1949] 1953), Morgenthau [1946] 1974, 1972). These hopes, moreover, were further challenged by events like those of 1968, the Vietnam war, and, more recently, the fall of the Berlin Wall. For an evaluation of what has changed in the sciences in the past thirty years, see Ziman (1994).

46. It is with a mixture of sadness and realism that we see *The New Cambridge Encyclopedia of Human Evolution* (Bunney 1992) published without a single reference to the role of religion in biocultural evolution.

47. Some readers may note the absence of many of Burhoe's writings in this paper. The reason for that is the remarkable consistency of his proposals for social reformation over a time span of more than thirty years. The essays included in Burhoe (1971) cover much of what is relevant for this paper.

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