

Religion and Culture
in Early Modern Europe,
1500–1800

KASPAR VON GREYERZ

TRANSLATED BY THOMAS DUNLAP

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Introduction

Religion and Culture: Popular Culture and Religiosity

Few historians question that the late Middle Ages was an era profoundly marked by religiousness and piety. But the scholarly consensus is not so clear when it comes to the religious life of the early modern period (ca. 1500–1800). What is one to make of French Enlightenment thinkers like Voltaire, who subjected religion and the church to trenchant criticism, or LaMettrie and Diderot, who fully embraced atheism? What about the Italian humanists of the fifteenth and sixteenth centuries, whom historians—beginning with Jacob Burckhardt and extending into the late twentieth century—saw as unbelievers who made a radical break with the medieval past also in their religious beliefs?

Scholarship has now corrected the image of humanism in this particular respect: there is broad agreement among historians that humanism all across Europe was a phenomenon rooted in Christianity, its embrace of pre-Christian classical authorities notwithstanding. But can the same be said of the eighteenth-century Enlightenment, which was, at times, unsparingly critical of ecclesiastico-religious traditions? Any answer must begin by acknowledging that the movement was not everywhere as critical of religion and the church as it was in France. In England, Scotland, Germany, Switzerland, Austria, and Italy, we are dealing with an essentially Christian Enlightenment. Still, the Enlightenment does represent a break in that its rationalism powerfully reinforced the trend toward the separation of religion and daily life that had begun among the educated

classes in the late-seventeenth century. This is indirectly confirmed by the reaction to this trend in the form of the Protestant movement of awakening and Catholic ultramontanism at the turn of the eighteenth century. Incidentally, in part this reaction is also an indication that the Enlightenment accentuated existing disparities between different sociocultural worlds: when it comes to the different mentalities of the educated and lower social strata, the Enlightenment accelerated the potential for change in the former, while contributing little to a corresponding change in the latter, whose exposure to the Enlightenment was slight.

It is undoubtedly correct that the eighteenth-century Enlightenment made essential contributions to the individualization of religious experience and thus to the secularization of the relationship between religion and society, even if in some instances the beginnings of these currents predated the eighteenth century. However, it would be wrong to claim that it promoted individualization and secularization *in general*—in other words, that it took hold of all social strata.

Let me posit two assumptions: first, religion in history must be seen and understood, always and without exception, as a cultural phenomenon; second, cultural experience in premodern, estate-based society always has a specific social locus. What this means for the sixteenth and seventeenth centuries is that we can speak only in a qualified sense of a religiosity that transcended social strata and was valid at a particular time for the entire society of a region or a country. And yet, as we will see, it is possible to identify certain contexts that transcended social strata in the sixteenth and seventeenth centuries, though these contexts fractured again radically under the influence of the Enlightenment. And from that time until the late twentieth century, profound differences existed between the top and the bottom—that is to say, clear distinctions between the religiosity of the higher, educated strata and the religiosity of the common people. In that respect the “concurrence of non-contemporaneous elements,” to use a phrase of Reinhart Koselleck’s, is indeed a truism for the history of the eighteenth century.

At this point, however, one question demands to be answered: How does one define “religion”? Following Thomas Luckmann, I see religion as a “socially constructed, more or less solidified, more or less obligatory system of symbols” that combines “a stance toward the world, the legitimization of natural and social orders, and meanings . . . that transcend the individual with practical instructions on how to live and with personal obligations.”¹ The fact that religion figures in this definition as a “socially constructed . . . system of symbols” is useful for my purposes, in two respects. First, as a cultural phenomenon, religion is, in its origins, always embedded within a specific social

context: religion is not conceivable without society.² Second, this part of the definition fits the pre-Enlightenment situation especially well, because in an era in which religion still played a central role in the daily life of Europeans, it was experienced primarily in everyday settings. “Socially constructed” does not mean, of course, that the content of a religion can be reduced, in the final analysis, to its social origins. I will presently clarify this point further in the course of looking at functionalist models, for example that of Émile Durkheim.

First, however, I will take a critical look at Luckmann’s conception of religion as a “more or less obligatory system of symbols.” When considering the early modern period, one should expand upon this notion by speaking of a system of symbols *and* rituals, since the ritual aspect of the religiosity of the early modern period is readily apparent. What I have in mind here are not only the rituals of the Church year with its high points at Christmas, Easter, Ascension, Pentecost, and the great saints’ days; I am also thinking of the Protestant family ritual of devotion, of prayer (especially strongly ritualized in the customary practices of the Catholic Church and Catholic piety), and, finally, of the ritual character of early modern magic. By contrast, externally visible religious symbols were such things as baptismal names, rosaries, and the Protestant Psalter. Probably the most significant fusion of ritualistic and symbolic content occurred in the celebration of the Eucharist as part of the Catholic Mass or the Lord’s Supper in Protestantism. As a system of symbols and rituals, religion was *more or less* obligatory because the churches did not make the symbols and rituals equally obligatory at all times for their members, and because, from the perspective of both the churches and the laity, not all symbols and rituals carried equal weight.

As for the final element of Luckmann’s definition, it requires no further explanation that religion served as a system that provided a value-orientation to individuals and the collective, and—simultaneously—legitimized the existing natural and sociopolitical orders. All political orders of the early modern period, from absolutist monarchy in France and Spain, to the Swiss Confederation, to the Anabaptists in Münster in 1534/35, were eager to legitimize themselves politically. And the same holds true for the justification of theories of resistance in the seventeenth and eighteenth centuries. When it came to the legitimization of natural order, the people of pre-Enlightenment Europe strove to understand unusual natural events, such as earthquakes, floods, crop failures, monstrous births, and the appearance of comets, as God’s punishment for sins or as a divine threat of judgment. The religious legitimization of the secular and natural order was thus common and exceedingly varied in this period.

Diseases, however, are one example of phenomena that were not seen exclusively as divine punishment; rather, they could also be attributed quite

readily to the magical influence of witches or sorcerers. For us this raises the question of how to distinguish religion from magic. One could define magic as “the exercise of a preternatural control over nature by human beings, with the assistance of forces more powerful than they.”³ Magic is thus clearly distinct from religion in its manipulative aspect. Of course, this is pure theory. As I will show in the following section, in practice, that is to say, in the history of religion and piety, at least of the pre-Enlightenment period, it is by no means possible to distinguish clearly between religion, magic, and astrology (which, in the final analysis, was based on magical ideas).

Preliminary Methodological and Theoretical Reflections

Against Dogmatism and Functionalism

Modern historians of religion would do well to beware of both dogmatism and reductionism. To my mind, one can speak of dogmatism if, for example, certain aspects of the religiosity of our forebears in the early modern period are described, from a modern perspective, as “irrational” or “superstitious.” Such labels, which spring from our own understanding of life and religion, are useless in reconstructing past worlds. It was precisely such dubious labels that the British historian E. P. Thompson had in mind when he spoke of the “enormous condescension of posterity” toward the worlds of its ancestors.⁴ For us, the only promising strategy for at least beginning to understand the significance that the worlds of everyday life, imagination, and faith held for our ancestors lies in “anthropologizing” or “ethnologizing” our epistemological methods. What this implies is that one must try to understand these worlds of the past from the inside before making any scholarly statements about them. To give one example: to theologians, the notion of God may be a universal idea with corresponding abstract attributes. But for anthropologists, ethnologists, and historians, specific conceptions of God have their specific cultural loci, which means that they can be truly understood only from the perspective of their respective cultural contexts.⁵ For epistemological reasons, we should therefore seek to work primarily from the perspective of the individuals and groups we are studying, instead of imposing our contemporary categories upon them a priori.⁶

The programmatic demand articulated in this context by the American anthropologist Clifford Geertz, that we proceed “from the native’s point of view,” is directed not least against a functionalist understanding of religion. What do we mean by a functionalist understanding? Karl Marx, Max Weber, and Émile Durkheim, to mention only three thinkers among the intellectual

giants of the nineteenth and twentieth centuries, propagated functionalist theories of religion and religiosity, though one needs to distinguish between a functionalist super-elevation of religion and a functionalist reduction of the religious.

Most widely known today is surely the functionalist reduction of the religious by Karl Marx (1818–83). It is already adumbrated in his early writings, especially in his treatise *The German Ideology* (1845/46), which, among other things, stated programmatically: “Life is not determined by consciousness, but consciousness by life.”⁷ In Marx’s “Theses on Feuerbach” we read that

Feuerbach starts out from the fact of religious self-alienation, of the duplication of the world into a religious world and a secular one. His work consists in resolving the religious world into its secular basis. But that the secular basis detaches itself from itself and establishes itself as an independent realm in the clouds can only be explained by the cleavages and self-contradictions within this secular basis. The latter must, therefore, in itself be both understood in its contradiction and revolutionized in practice. Thus, for instance, after the earthly family is discovered to be the secret of the holy family, the former must then itself be destroyed in theory and in practice.⁸

Marx’s later remark that religion was merely the “opium of the masses,” which the ruling class used to keep the ruled from perceiving their true condition, flowed logically and consistently from these earlier reflections. These ideas of Marx’s may be described as functionalist reductionism, because they reduce religion one-sidedly to its function as a sociopolitical instrument of domination, to its legitimizing function.

The conception of religion articulated by the sociologist Émile Durkheim (1859–1917) can also be labeled reductionist—based, of course, on very different premises—because he connected the idea of religion inseparably with the idea of the church. He defined “church” as a community of those who feel bound together by “a unified system of beliefs and practices relative to sacred things.”⁹ This emphatically reduces religion to its social, community-generating function. Durkheim was thus only being consistent when, in his well-known studies of the totemism of Australia and North America as elementary forms of religious life, he interpreted individual religion or individual totemism as manifestations of decadence.¹⁰ Since one of the basic trends in early modern religiosity in Europe was at least some tendency toward an individualization and “privatization” of faith and—to some extent—of religious practice as well, Durkheim’s theory offers little to the questions at the center

of this inquiry, unless we too are willing to regard these individualizing tendencies a priori as signs of decay.

Max Weber, for example, simultaneously fascinated with the accomplishments of his time and deeply pessimistic about the sociocultural burdens of modernity, sought to understand the European individualization of faith and religious practice in the sixteenth century as “occidental rationalism.” In the process, however, the role he assumed was not that of a reductionist, but that of someone who carried out a functionalist super-elevation of religion, most clearly in his essay *The Protestant Ethic and the Spirit of Capitalism* (1904–05), which I will examine more closely later.¹¹ Suffice it to note for now that while religion stands in a functional relationship to society also in Weber, it is not primarily society that dictates the conditions of religious life; rather, it is the ethic grounded in religious belief that has important repercussions for social behavior, one example of which, according to Weber, is the fact that the ethic of Calvinism as well as that of Pietism promotes the spirit of capitalism.

A brief interim conclusion is therefore that a modern social and cultural history of religion should make every effort to avoid the kind of dogmatism and functionalism I have described, because they mislead one into distorting the scholarly results of relevant studies through a priori determinations. Ideally, given the current state of scholarship in religious history, pertinent analyses for the period under discussion should thus focus especially on micro-historical studies. However, this methodological postulate cannot be met in the kind of study that the present book seeks to offer.

A Survey Between Microhistory and Macrohistory

“Microhistory” refers to an approach that is oriented primarily toward concrete action, which is why its usual starting point is the historical subject as the agent of history. By contrast, “macrohistory” can be characterized as a primarily structure-oriented approach to the past.¹² Examples of basic structures of early modern history are lordship, estate-based society, and patriarchy.

As a matter of fact, there are multifarious connections between *action* and *structure*. In German social history of the 1970s and 1980s, however, these connections were sacrificed to a kind of “reification” of structures, which meant that “structures and processes themselves took on the qualities of—anonymous—actors,” although this came at the expense of a connection to the human being as the real agent of history.¹³ The reification of structures created a situation in which scholars tended to regard them as a quality of history that is prior to the process of knowing and therefore “objective.” But from the

perspective of historical anthropology and the newer history of mentalities, the primary approaches to which I am committed, every form of historical writing is in the final analysis a work of construction. After all, historians are always chiefly interested in those phenomena and processes of the past to which they accord cultural significance in reference to their own time. This epistemological interest is not arbitrary, since it almost always remains tied to a concrete scholarly discourse within a specific scholarly community.

Max Weber's well-known saying that the "stream of immeasurable events flows unendingly towards eternity," and thus the "cultural problems which move men form themselves ever anew and in different colors, and the boundaries of that area in the infinite stream of concrete events which acquires meaning and significance for us . . . are constantly subject to change,"¹⁴ remains entirely true, even if I will not adopt Weber's complex methodology, which, in the final analysis, is not without its own contradictions. Indeed, "From the incomprehensible richness and complexity of past life, [the historian] isolates chains of events, threads of motives, and contexts of interaction. And from these, by positing beginnings and endpoints and imputing a meaningful connection, he constructs 'stories.'"¹⁵ It is only on this basis that a survey of a specific thematic aspect of the past, as I have endeavored to offer here, can take shape.

Without question, surveys belong to the field of macrohistory. The dominant ordering principle of macrohistory is ideas about structures and processes. For example, the development of early modern religiosity is undoubtedly linked to mental structures that made it vastly more difficult—in pre-Enlightenment society—to question the religious meaning of the prevailing social and political orders. Few scholars in the sixteenth and seventeenth centuries dared to challenge the central sociopolitical status of religious patterns of interpretation. A survey of the religious history of Europe in the early modern period cannot get by without these ideas. To be sure, it is desirable "to connect the multifarious microstudies and expand them into a web of new interpretations of history, thereby allowing the distinct logical systems to emerge from their local context and be brought to bear on a description of the transformation of culture in its historical totality."¹⁶ However, I believe that the idea of "circumventing" the problems of structural history by simply linking together and adding up microhistorical findings is illusory, for the simple reason that this idea is essentially the expression of a tendency to overestimate—on the basis of unspoken theoretically and often positivistic assumptions—the narrative capacity of empirical research within a larger framework:

Accordingly, further historical-anthropological research, no matter how large the number of individuals and groups whose actions and motivations it elucidates, cannot explain historical change on a large scale. In other words, even historical anthropologists cannot dispense with the “systems level” if they regard the question of cultural change as significant.¹⁷

But raising questions about the problems inherent in the topic of this book in no way implies that I reject the historical-anthropological considerations I have just sketched out: microhistory and macrohistory are not necessarily mutually exclusive; on the contrary, each depends on the other. Of course, the methodological perspective I have presented here assumes that structure and process do not clandestinely take on a life of their own vis-à-vis human action and historical events; rather, structures must be understood as a kind of framework for the actions of historical agents, a framework that is itself created and, at times, altered by the unfolding actions. That is certainly and unreservedly true for cultural change in the early modern period, which is the primary focus of my inquiry.

In the centuries between 1500 and 1800, cultural change increasingly acquired characteristics specific to social strata: in other words, it increasingly adhered to “timetables” of change specific to different strata and groups. This means, among other things, that from the perspective of change, the historical manifestation of *culture* cannot be separated from that of *society*. The logical implication for my methodological stance is that it would make no sense to seek to construct a principled contradiction between a microhistorical and a macrohistorical approach. Moreover, I assume that cultural as well as social change constitute process-like phenomena—and by “processes” in cultural and social terms I mean occurrences within specific social segments that are also limited chronologically; in any case, I most certainly do not mean occurrences that lead in some kind of linear fashion from Luther to Bismarck.

We are left with the question to what extent it still makes sense, from the perspective of contemporary historical scholarship, to orient the content of this book toward macrohistorical concepts such as “Reformation,” “Counter-Reformation,” and “Enlightenment,” to name only the three most important ones. Especially within the framework of gender history, scholars have recently raised the question of what sort of content in the grand narratives would do justice to the category of “gender.” In particular, historians have warned about the power of a historical narrative that is aimed at modernity and its creation. As Lynn Hunt has observed, even scholarship on women’s history and gender history has found it all but impossible to escape the seductive power of a

teleological narrative about nationalism, democracy, and the rise of the modern constitutional state.¹⁸ I agree with Rudolf Schlögl when he emphasizes that historical scholarship cannot dispense with directional markers “as long as history remains related to a concept of development that means more than simply ‘change.’”¹⁹ Some kind of inherent teleology—a certain directional orientation—is a given in our practice of representation (that is, the way in which we communicate scientifically about the content of our scholarship). It is the product of the narrative structure we use, of the narrative nature of history. Yet under no circumstances must this unavoidable directional orientation be transformed clandestinely into determinism, when, for example, we turn the early modern period as a whole into a mere precursor to modernity or a modernity transfigured into something fascinating and mysterious.

Without a doubt, historical anthropology and with it the microhistorical approach make it incumbent upon us to question anew the received answers to the problems of continuity in the early modern period, answers we have grown fond of. In particular, the influence of these approaches challenges the notion of a linear and directional development of European history: as I see it, the process-like nature of early modern history gives rise also, and not least, to the gradual and particular (or sectoral) character of cultural and social change.

Religion as Culture

Religion as a Cultural Phenomenon

Religion was and is a cultural phenomenon. Here I will touch only tangentially upon the question of how to define culture, as that is an inexhaustible and therefore very tricky topic. Suffice it to say that Peter Burke’s often-quoted definition calls for a critical engagement. Burke understands culture as “a system of shared meanings, attitudes and values, and the symbolic forms (performances, artifacts) in which they are expressed or embodied.” Using this definition as his starting point, he observes that “popular culture” is perhaps best understood as “unofficial culture, the culture of the non-elite, the ‘subordinate classes.’”²⁰ This notion of culture has been criticized—not without reason—for being somewhat narrow and excessively literary. However, when the counterproposal calls for an understanding of culture that allows us to trace the culture of a people “back to its economic-practical context of experience [*Erfahrungszusammenhänge*],” we find lurking in the background once again the specter of functional reductionism.²¹

While cultural processes are closely linked to social processes, they cannot be reduced to the latter. This is already apparent from the mere fact that the

social elite of the sixteenth and seventeenth centuries participated actively in the popular culture of its day, whereas, conversely, the common people participated very little or not at all in the educated culture of the time. It is also evident in the fact that while cultural change could certainly be linked to specific social strata or estates, it was nevertheless subject to other laws of change than society, which was, by comparison, more static than culture. Revealing in this regard are the ways scholars have tried to describe modern popular culture, that is, popular culture of the nineteenth and twentieth centuries. Some have emphasized that what sets it apart from “the international culture that is subject to constant, rapid changes is its traditionalist nature, its group imprint, and its local forms of expression.”²²

The phrase “popular culture” (*Volkskultur*) is afflicted by the apparent inability of historians to reach even a provisional consensus about who the bearers of this culture were. The contributions to this vigorously debated question are by now legion. One criticism, voiced especially by German scholars, concerns the dubious history of the term *Volk* in the nineteenth and twentieth centuries, both its romanticizing obfuscation and its fascist instrumentalization. Another target of criticism is its vagueness. At the same time, culture and religiosity in the early modern period most certainly were not homogeneous and harmonious across social strata. We are thus left with the task of finding a terminology for the culture of the common people, the simple people, those strata and groups who had no meaningful share of the educated culture of their day and who, as subjects, were excluded from the exercise of political domination (with the exception of certain subordinate functions). This culture was, after all, not simply identical with the socially dominant culture of a particular era. I therefore prefer to retain the phrase “popular culture” as a heuristic category,²³ while simultaneously cautioning that we must not assume a model that posits a stark dichotomy between an elite culture and a popular culture. After all, whether there existed, in a particular place at a particular time, two dichotomous levels or multiple levels of collective cultural experience and articulation is not something we can decide a priori, but something that must always remain the object of concrete historical research.

The historian Bob Scribner has distinguished four conceptions of “popular culture”:²⁴ first, “it can mean common social custom,” for example the distinction between the dancing at a church feast and the dancing of the upper classes. Second, it can be understood more narrowly as the unofficial culture of those who do not participate in political power or in the corporative structures of the artisan guilds; that is, popular culture as the culture of “wayfaring folk, journeymen, of the plebeian lower strata.” Third, there is the notion of popular culture as “superstitious” culture associated with the need to cope with

life through magical means. Fourth, and finally, popular culture could be taken to mean a culture that is “related to elemental aspects of material life,” as for example the recourse to belief in astrology. While one could certainly argue about the distinction between the third and fourth types, Scribner is right in emphasizing that the two are difficult to separate from “popular belief,” which was often quite distinct from belief officially sanctioned by the church. *Quod erat demonstrandum*: popular culture and popular forms of religiosity were closely interconnected. Scribner’s interlinking of popular culture with magic and the belief in astrology raises the general question about the relationship between religion (as a cultural phenomenon) and magic.

Religion and Magic: Is There a Difference?

There is still no consensus among historians as to what exactly we mean by “magic.”²⁵ Richard Kieckhefer proposed to define it as

That which makes an action magical is the type of power it invokes: if it relies on divine action or the manifest powers of nature it is not magical, while if it uses demonic aid or occult powers in nature it is magical.²⁶

Although this definition promotes a distinction between religion and magic on the level of theory, it has the distinct disadvantage of foisting upon the many learned men who concerned themselves with natural magic right up to the end of the seventeenth century (and in some cases beyond) an understanding of the relationship between magic and religion that in no way corresponds to their own view of things. After all, to scholars in the tradition of Neoplatonism and Hermeticism as revived by fifteenth-century Florentine humanism, a concern with natural magic was, even in the sixteenth and seventeenth centuries, generally part of their attempt to comprehend God. On the basis of my own understanding of magic, I would like to highlight here especially the aspect of the manipulation of occult powers or demonic spirits.

To shed some light on this, I will take a brief look at the story of Goodwin Wharton (1653–1704), a member of the British upper class who left behind an autobiography written in the closing years of the seventeenth and the opening years of the eighteenth century. In it, he describes above all his endeavors in alchemy and magic, as well as the various phases of his relationship to his companion, Mary Parish. The latter had a medium named George, with whose help Wharton established contact with the netherworld of fairies—for quite pragmatic reasons, since the fairies guarded immense treasures in the netherworld and Wharton was chronically short of cash. In the end, the medium

helped him not only to communicate directly with the archangels Michael and Gabriel, but also to speak directly to God. Told that he was destined for great tasks in the British state, Wharton took a summertime trip to Bath, where, loaded down with love amulets, he tried to catch the eye of the bathing Queen in order to bind her to himself forever after—unfortunately without any success. Goodwin Wharton described all this with the undiminished hope “that ye Lord will visit me with his grace and abundant favor.”²⁷

In Wharton’s writings we find ideas that formed the foundation of most of the magical ideas of the sixteenth and seventeenth centuries. For one thing, there is the notion that all matter of any kind is animated and controlled by spirits; second, there is the belief in the possibility of remote action across empty space, as it were, in sympathetic magic, in manipulation at a distance; and, third, the notion that control of nature could be achieved by controlling the occult powers and benevolent spirits inherent in nature. This was distinguished from demonic magic, which sought to control *evil* spirits in an effort to attain worldly goals. Goodwin Wharton stuck exclusively to good spirits.

In a previous work I tried to show, on the basis of statements in sixteenth- and seventeenth-century autobiographies, that religious syncretism in the broadest sense, which also opens up a view onto the relationship between church-approved religion and the belief in magic or magical practices, was only in exceptional cases actually seen as such by contemporaries.²⁸ The conclusion we can draw from this is that religion and magic, as two categories referring to the world of people’s lives, can hardly be distinguished with satisfactory precision in the pre-Enlightenment era. One important reason for this is that contemporary experiences, notions about, and applications of religion *and* magic by the people of the pre-Enlightenment age were in a sense regularly passed through the filter of the social and cultural experiences of their daily lives.

To be sure, in part the autobiographies of earlier centuries provide us with historical evidence that cannot be readily generalized. To some extent that is also true of the somewhat exalted Goodwin Wharton. At the same time, through his writings and the actions presented therein, he illustrated ideas and activities that were by no means untypical for many members of the Royal Society for the Promotion of Knowledge, the first academy of natural science, founded in 1660.

What is true of the world of science at that time—and not only in England—is that scientific, rational thinking in our modern sense and magical or alchemical ideas were by no means as clearly separated as a traditional history of science, with its strong focus on the pioneering role of individual, eminent natural philosophers, would suggest. Far into the seventeenth century,

demonology, the scientific investigation of the demonic in nature, which was in multifarious ways linked to contemporary witch persecutions, constituted an integral element of the scientific engagement with the mysteries of nature and the supernatural. The examination of unusual occurrences in nature, which until then had usually been regarded as divine portents, experienced a revival, especially in the late seventeenth century and not least in the setting of the English Royal Society, until the Enlightenment of the eighteenth century made a decisive break with the scientific fascination with miracles, wonders, and *mirabilia*.²⁹

There are numerous indications that the final decades of the seventeenth and the first decades of the eighteenth century saw a profound cultural transformation. More clearly than before, the educated classes—a little faster here, somewhat more slowly there—began to distance themselves from the world as imagined by simpler folk: from faith in astrology and witches, and from the belief in miracles in general. What is true of miracles is also applicable to the magical and astrological imagination. Rebekka Habermas has emphasized that in the seventeenth century, the miraculous disappears “only from a particular cultural level, from the one we like to place at the center of historical scholarship as the only relevant level, so-called High Culture. ‘Popular culture,’ by contrast, would continue to speak of miracles for a long time to come.”³⁰

More recent scholarship on the history of science, which has lately begun to remember emphatically that it is an endeavor of cultural history, has shown how slow and gradual these shifts actually were, even on the level of educated culture.

Religion and Science: History of Science and History of Religion

The historian of science can not devote much attention to the study of superstition and magic, that is, of unreason, because this does not help him very much to understand human progress. Magic is essentially unprogressive and conservative; science is essentially progressive; the former goes backward; the latter, forward. We can not possibly deal with both movements at once except to indicate their constant strife, and even that is not very instructive, because that strife has hardly varied throughout the ages. Human folly being at once unprogressive, unchangeable, and unlimited, its study is a hopeless undertaking. There can not be much incentive to encompass that

which is indefinite and to investigate the history of something which did not develop.³¹

This is how George Sarton, one of the founders of the modern historical study of the development of the natural sciences, began his three-volume introduction to the history of science, published between 1927 and 1947. Although younger historians of science in the postwar period tended to keep a critical distance from Sarton's dogmatic positivism, they did agree with his contention that the history of science was to be essentially a history of progress. The embrace of this premise was especially absolute among historians of science in the 1960s and 1970s who were under the influence of Karl Popper, a theorist of science. Among them was the English historian Mary Hesse, who emphasized in a programmatic essay written in 1973 that "natural science is just the arena of man's rational commerce with the world."³² For a historian who was concerned with the development of the natural sciences, it was therefore legitimate and appropriate to classify and describe her subject matter according to rational categories. In looking at the development of science in the seventeenth century, it was not worth the trouble to deal with magical-hermetical or alchemical currents, since these contributed nothing to scientific progress. Hesse even warned against overloading the picture that had already been drawn of the course of seventeenth-century science: "But even the suggestion that it is possible to get nearer the true picture by accumulating factors should be treated with caution. Throwing more light on a picture may distort what has already been seen."³³

Of course these comments, thoroughly committed to the tradition of scientific positivism, came at a time when the well-known American theorist of science Thomas Kuhn had long since introduced a more differentiated approach into the discussion. Against Popper and his successors in the theory and history of science, Kuhn's theory of the paradigm and what he called "normal science" demonstrated that even paradigms that are contested and refuted in some of their details can have a long life if that is what the scientific community wants. In other words, he showed that the scientific discourse is by no means defined, in the Popperian sense, by a progress that is in some way inherent in a new paradigm. Incidentally, Kuhn also rejected Popper's presumption of dismissing entire branches of science—astrology or psychoanalysis, for example—from the outset as pseudo-science.³⁴ Still, Kuhn is undoubtedly a so-called internalist, that is, a proponent of an "internalist history of science."³⁵

By contrast, during the last few decades, proponents of a historiography *external* to science have presented us emphatically with a contextual history of science, one that pays full attention to the basic social and especially cultural

conditions for the production of knowledge and the development of science. Their starting point is the existence of a dialectical relationship between the production of scientific knowledge and a given cultural environment. This approach, strongly influenced by ideas from the sociology of knowledge, has so far been programmatically asserted and propagated most vigorously by Stephen Shapin and Simon Schaffer in their 1987 study of the controversy between Thomas Hobbes and Robert Boyle in the 1650s and 1660s and its subsequent implications for the history of science.³⁶ Here the problem of translating scientific understanding onto the social and political level, and the role of rhetoric in that process, are explicitly addressed. And since the publication of their book, these themes have become the topic of other studies on the history of science in the seventeenth and eighteenth centuries, in particular those by Anglo-American scholars—which is not to say that there are not also comparable contemporary phenomena.

Edward P. Thompson's criticism that many historians approached the culture of the common folk of times past, in particular, with the dubious and arrogant condescension of posterity applies in some sense also to the various proponents of an "internalist" theory and history of science. For example, when Imre Lakatos dismisses the English natural philosopher Francis Bacon (1561–1626) as "a confused and inconsistent thinker" who appealed only to "provincial and illiterate scholars,"³⁷ he is essentially disqualifying—unjustly—in hindsight an entire circle of scientists of the late seventeenth (and in part even the early eighteenth) century who focused on gathering empirical facts and institutionalizing the scientific enterprise. Today, against the backdrop of the enormous differentiation of fields of study within the discipline of history during the last two decades, this kind of stance is thoroughly unsatisfying, as it reinforces especially the traditional and—from the perspective of social and cultural history—outdated picture of the history of science as a pantheon of great thinkers.³⁸ The history of science, too, is connected to the real world.

Let me draw the following interim conclusions:

1. The history of early modern science was dominated until the 1980s by a one-sided scholarly orientation, one that led in some cases to a deterministic, a priori selection of scientific currents from the sixteenth to the eighteenth centuries that were worth studying, and other currents that were not.
2. This research focus was interlocked with a more or less exclusive "great thinkers perspective." Since genius towers above its time in any case, and thus does not necessarily require a grounding in its socio-cultural soil when it comes to scientific achievements, a scientist's

sociocultural environment often entered into the discussion only selectively. What fell by the wayside in the process was frequently religion—at least those aspects of contemporary religiosity that could not be readily incorporated into the focus on progress. Here I am thinking especially of fields such as magic and alchemy.

3. Because of this self-imposed, dual limitation, traditional history of science is not entirely blameless for the fact that the *popular* perception of the complex relationship between early modern science and religion is still widely reduced to the construction of an almost a priori opposition between the Church and science.

Sixteenth- and Seventeenth-century Science as Knowledge of God

The case of the Zurich physician and scientist Johann Jakob Scheuchzer (1672–1733) shows that even a science that (unlike the work of Galileo Galilei, for example) was regarded emphatically as serving the knowledge of God was not automatically applauded by the Church.³⁹

Scheuchzer was born in Zurich in 1672 and lived there throughout his life—although he was offered, as a result of Leibniz’s efforts, the post of personal physician at the court of the Czar, he turned it down in 1714. Beginning in 1694 he held the position of the second city physician in Zurich; later he was also professor of mathematics at Zurich’s Hohe Schule. However, it was only a few months before his death in 1733 that he attained what he had yearned for for so long: the position as the first city physician and the professorship of physics at the Carolinum.

Scheuchzer is regarded as, among other things, the founder of the scientific geography of the Swiss Alps, for which he quite literally did the footwork in the first two decades of the eighteenth century on several long trips into the mountains—equipped with a thermometer, a barometer, and a protractor. These trips and the measurements he took along the way are documented in his travel reports, which he published as an appendix to his three-volume *Natural History of Switzerland*.⁴⁰ In the area of geology and paleontology, he was an ardent proponent of a flood theory that—in contrast to other flood theories, as for example that of the Englishman Thomas Burnet—regarded the *diluvium* as an expression of the divine harmony of nature.⁴¹

In essence, all of Scheuchzer’s scientific work was done in the service of the knowledge of God and to furnish physico-theological proof of God’s existence. The most impressive testimony to that motivation is his (partially posthumous) four-volume work *Copper Bible* or *Physica Sacra*, published in Ulm and Augsburg in folio format between 1731 and 1735. In purely aesthetic terms, it is a

stunning demonstration of the convergence and harmony of Biblical and scientific understanding. Scheuchzer derived the Biblical legitimization for this work from Romans 1:20, which states, in Scheuchzer's words, "that God's invisible nature, that is, His everlasting power and deity, will be seen from the perception of His works, that is, the creation of the world."⁴²

Notwithstanding his unquestioned religiosity, and his tireless efforts to offer to a broader public a visual demonstration of the mutual compatibility of science and Biblical piety (for example, in his Zurich inaugural address of 1710 on the usefulness of mathematics for theology),⁴³ Scheuchzer had a number of run-ins with censorship by the council, which was largely controlled by the city's clergy. In his correspondence with the famous Basle mathematician Johannes Bernoulli, he complained bitterly from time to time about the difficulties the censorship caused him. As late as 1721, the Zurich clergy regarded it as expedient to denounce the Copernican system as heretical and, evidently, to castigate Swammerdam's discovery of spermatozoa as indecent.⁴⁴

Of course, these were battles of retreat. The great defensive front—reinforced one more time by the German and French-speaking Swiss reformed theologians in 1674 with the *Formula Consensus*, which reasserted the dogma of predestination, and their systematic campaign against Cartesianism—had long since been riddled with holes, and it eventually collapsed for good in the 1720s and 1730s.

In the years prior to that, the relationship between natural science and theology in Zurich remained tense, as did Scheuchzer's relationship to the Reformed canons of the Great Minster of Zurich. A contemporary recorded the following on July 6, 1714:

Herr Dr. Scheuchzer had a white crow, it got away on Saturday and onto the roof of Herr Baptisten [a neighbor]. Herr Dr. climbed onto the roof without shoes, lured and captured the bird, slipped and went down as far as the gutter, but was able to stem his foot against it, stand up and save himself, all the while holding the crow in his hand. People are saying that if he had fallen to his death, the canons would have given the crow a lifetime annuity [*leibgeding*].⁴⁵

The example of Scheuchzer demonstrates three things: first, the truism—often overlooked in scholarship on the early modern period—that "church" is not automatically synonymous with "religion"; second, that the study of nature and knowledge of God could still be closely interconnected in the early eighteenth century; and, third, the evident need on the part of natural philosophers, at least of the sixteenth and seventeenth centuries, to justify what they were doing to pious or ecclesiastical critics.

The rhetoric of legitimization in the natural sciences is not a novelty of the late twentieth century, but a pervasive phenomenon as early as the seventeenth and early eighteenth centuries, from Francis Bacon to Isaac Newton. Bacon, who in his natural philosophy deliberately distinguished between God as *prima causa* and what he called the “second causes,” that is, the divinely established, inherent laws of nature, wrote in his *Advancement of Learning* (1605):

And as for the conceit that too much knowledge should incline a man to Atheism, and that the ignorance of second causes should make a more devout dependence upon God, which is the first cause; first, it is good to ask the question which Job asked of his friends: *Will you lie for God, as one man will do for another, to gratify him?*

There then follows the famous statement, “For certain it is that God worketh nothing in nature but by second causes.” But if one reads on, one also encounters Bacon’s assertion that “a little or superficial knowledge of Philosophy [i.e., natural philosophy] may incline the mind of man to Atheism”; a deeper and continued study of natural philosophy, however, “doth bring the mind back again to Religion.”⁴⁶

Posterity has stylized Isaac Newton into the “architect of the mechanistically determined edifice of ‘classical physics,’”⁴⁷ but Newton himself, throughout his life, clung firmly to his idea of a specifically divine providence (*providentia specialis*), that is, of a God who, in the final analysis, intervened directly in natural history, even if—from Newton’s perspective—he did so very sporadically. To justify as well as to illustrate his special linkage of faith in providence with his effort to ground the understanding of nature in science, Newton stated in 1706, in the Latin edition of his work on optics, as always with a critical glance at Cartesian physics, that God used comets to periodically reestablish the harmony of the universe.⁴⁸

Moreover, in the same work he went so far as to make the following physico-theological pronouncement:

And all this being so well arranged, it is not apparent from the phenomena of nature that there must exist an incorporeal, living, intelligent, and omnipresent Being which in infinite space—its sensory organ, as it were—sees through to the innermost nature of all things and comprehends them completely in their immediate presence. . . . Certainly there is in all of this nothing that would contradict itself or reason.⁴⁹

The link between knowledge of nature and knowledge of God began to loosen only in the eighteenth century under the influence of the Enlightenment. The

Voltaire-inspired Enlightenment reception of Newton, in which little was left of Newton's belief in providence or of his intense study of the apocalyptic books of the Bible, is a good example of this development. But lest I make Newton out to be a model student of theological orthodoxy, we should remind ourselves of his secret Arianism⁵⁰ and his fascination with alchemy.

Religion, Natural Philosophy, and Alchemy

Over the past few decades, Newton's passionate interest in alchemy has given rise to new discussions in the history of science. Recently, scholarship has also cast a new light on Robert Boyle, long regarded exclusively as someone who transcended alchemy.

Today, as a growing number of historians of science are questioning the often deterministic faith in progress that characterized the traditional history of science, there is no longer a historiographical necessity to see Robert Boyle as some heroic conqueror of alchemy and thus of the occult sciences, even though it is possible to read some of Boyle's works—for example, *The Sceptical Chymist* of 1661—in this way.⁵¹ In this tract, Boyle was particularly severe in his criticism of Paracelsus as the founder of the tradition of iatrochemically-oriented alchemy that still existed in the seventeenth century. But we also read statements like the following: "I distinguish betwixt those chymists that are either cheats, or but laborants, and the true *adepti*; by whom, could I enjoy their conversation, I would both willingly and thankfully be instructed especially concerning the nature and generation of metals."⁵²

A fascination with an alchemistic understanding of things is unmistakable in these words, especially in the phrase "the true *adepti*," which has alchemistic connotations. In any case, only a few years later, Boyle saw no contradiction in his effort to explain an alchemistic transformation with concepts from mechanistic natural philosophy.⁵³

One expert on the subject recently emphasized that "neither the emergence of chemistry nor the demise of alchemy" was as tidy a process as the older historiography made it out to be—and Boyle's role was, accordingly, more complex:

Boyle's works and papers teem with alchemistic references, theories, practices and processes. Until Boyle's alchemistic pursuits are incorporated into his historical image, that image will remain distorted by a magnification of his work on "modern, reputable" topics of atomics, pneumatics and such like, at the expense of "archaic, disreputable" topics like alchemy.⁵⁴

Betty Jo Teeter Dobbs, who spent her scholarly life studying Newton's alchemy, pointed out repeatedly that Newton's alchemistic penchant was centrally important to the formulation of his theory of gravity: the ideas of sympathetic influence underlying magic and alchemy helped Newton to distance himself from the principle of the theory of motion that dominated both traditional Aristotelian and the newer Cartesian physics, namely that any object that moves is set in motion through the direct, physical effect of force. In any case, there is simply no denying a certain affinity between alchemistic-magical ideas about sympathetic influence and the radically new postulate advanced by Newton in his theory of gravity, that there existed a physical effect of force between two bodies that did not touch each other.

In her last monograph on Newton, Dobbs tried to bring out the unity of all his work by way of his theology—a holistic interpretation, so to speak, of the life of this great Englishman.⁵⁵ Initially, I found this perspective persuasive.⁵⁶ Now, however, I am no longer convinced by the demand for a holistic understanding of sixteenth- and seventeenth-century scientists, because our modern cultural and social ideas of what is holistic must not be imposed upon the different worlds of earlier centuries.

From where I stand, there is simply no doubt that alchemy (and thus also magical ideas) played an important role in the development of European sciences into the late seventeenth century. What scholars have demonstrated for Boyle and Newton applies equally to Robert Hooke and to less well-known English scientists and scientific enthusiasts of the late seventeenth century, men like Elias Ashmole, John Aubrey, and others.⁵⁷ And evidence has been presented that a comparable development occurred in Germany.

In her critique of Keith Thomas's monumental study *Religion and the Decline of Magic* (1971), the cultural anthropologist Hildred Geertz emphasized that the real issue, from a historical-anthropological perspective, was not to explain the decline of magic in the early modern period, but to explain the emergence of a concept of magic as the opposite of religion and of enlightened reason.⁵⁸ In other words, it would be entirely false to question, in principle, the link between early modern religion, magic, and alchemy.

Stuart Clark has rightly defended the scientific status of the demonological tracts of the sixteenth and early seventeenth centuries against historians who wish to accept, in the history of science, only that which demonstrably promoted progress.⁵⁹ The relevant works of the skeptics Johann Weyer and Friedrich Spee, as well as those of the anti-Paracelsist and Weyer opponent Thomas Erastus, of the great French scholar Jean Bodin, the Scottish king James VI, the English hermeticist Robert Fludd, and many others, were as much an integral element of the scientific discourse about the mysteries of

nature and the supernatural as were contemporary tracts on *magia naturalis* and *magia artificialis*. It was only in the fourth and fifth decades of the seventeenth century that a change began to take shape among scholars in this regard—though, needless to say, that change did not occur overnight, certainly not as abruptly as theorists such as Michel Foucault would seem to suggest.⁶⁰

*On the Relationship Between the History of Science and
the History of Religion in the Early Modern Period*

In his very fruitful discussion of the connections between magic, science, religion, and rationality, the social anthropologist Stanley J. Tambiah cautioned against drawing firm distinctions between “primitive” and “modern mentalities,” based on the erroneous assumption that members of modern, western societies were “thinking scientifically all the time”; we know, after all, that “scientific activity is a special one practiced in very circumscribed circumstances.”⁶¹ Looking at the period of the so-called scientific revolution of the sixteenth and seventeenth centuries, Tambiah notes that “it is possible to separate analytically at least two orientations to our cosmos . . . *participation* versus *causality*.” These two different perspectives of knowing could be assigned to religion and science, respectively, as complementary views of the world.⁶²

What is important to me here is not so much this statement per se, but rather the thesis that Tambiah postulates in connection with it: namely, that a scientist of the seventeenth century could work simultaneously from two orientations—or, I would propose, perhaps even several, from our perspective incompatible, orientations—without perceiving a contradiction in doing so.⁶³

The natural sciences have been called the “state religion” of the twentieth century.⁶⁴ This label, though sharpened to a polemical edge, is not entirely without truth. At any rate, it reinforces my belief that the history of early modern science, seriously neglected by the historical profession, could make substantial contributions to a better understanding of the culture of modernity. I believe that would be possible without invoking deterministic models about the relationship between the early modern period and modernity.⁶⁵ A history of the science of early modern Europe that wishes to be taken seriously, whose orientation is not merely forward-looking, and that seeks to be also a cultural history, must pay adequate attention to discontinuities and non-linear developments.