Chapter One

Modernity on Endless Trial

If we are to believe Hegel—or Collingwood—no age, no civilization, is capable of conceptually identifying itself. This can only be done after its demise, and even then, as we know too well, such an identification is never certain or universally accepted. Both the general morphology of civilizations and the descriptions of their constitutive characteristics are notoriously controversial and heavily loaded with ideological biases, whether they express a need for self-assertion by comparison with the past or a malaise in one's own cultural environment and the resulting nostalgia for the good times of old. Collingwood suggests that each historical period has a number of basic ("absolute") presuppositions which it is unable clearly to articulate and which provide a latent inspiration for its explicit values and beliefs, its typical reactions and aspirations. If so, we might try to uncover those presuppositions in the lives of our ancient or medieval ancestors and perhaps build on this basis a "history of mentalities" (as opposed to the "history of ideas"); but we are in principle prevented from revealing them in our own age, unless, of course, the owl of Minerva has already flown out, and we are living in the twilight, at the very end of an epoch.

And so, let us accept our incurable ignorance of our own spiritual foundation and be satisfied with the survey of the surface of our "modernity," whatever the word might mean. Whatever it means, it is certain that modernity is as little modern as are the attacks on modernity. The melancholic "Ah, nowadays . . . ," "there is no longer . . . ," "in olden days . . . ," and similar expressions contrasting the corrupted present with the splendor of the past are probably as old as the human race; we find them in the Bible and in the *Odyssey*. I can well imagine paleolithic nomads angrily resisting the foolish idea that it would be better for people to have permanent dwellings or predicting the imminent degeneration of mankind as a result of the nefarious invention of the wheel. Mankind's history conceived as a degra-

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dation belongs, as we know, to the most persistent mythological topics in various parts of the world, including both the symbol of the exile and Hesiod's description of the five ages. The frequency of such myths suggests that, apart from other possible social and cognitive functions, they voice a universally human, conservative mistrust of changes, a suspicion that "progress," on second thought, is no progress at all, a reluctance to assimilate transformations, however beneficial in appearance, of the established order of things.

The changes go on, nonetheless, and they usually find a sufficient number of enthusiastic supporters. The clash between the ancient and the modern is probably everlasting and we will never get rid of it, as it expresses the natural tension between structure and evolution, and this tension seems to be biologically rooted; it is, we may believe, an essential characteristic of life. It is obviously necessary for any society to experience the forces both of conservation and of change, and it is doubtful whether any theory will ever provide reliable tools for measuring the relative strength of those opposite energies in any given society, so that we could add and subtract them from each other like quantifiable vectors and build on this basis a general schema of development, endowed with predictive power. We can only guess what gives some societies the ability to assimilate rapid changes without falling apart, what makes others satisfied with a very slow pace of development, and under precisely what conditions development or stagnation lead to violent crises or to self-destruction.

Curiosity, that is, the separate drive to explore the world disinterestedly, without being stimulated by danger or physiological dissatisfaction, is, according to students of evolution, rooted in specific morphological characteristics of our species and thus cannot be eradicated from our minds as long as the species retains its identity. As both Pandora's most deplorable accident and the adventures of our progenitors in Paradise testify, the sin of curiosity has been the main cause of all the calamities and misfortunes that have befallen mankind, and it has unquestionably been the source of all its achievements.

The impulse to explore has never been evenly distributed among the world's civilizations. Generations of scholars have asked why the civilization that emerged from joint Greek, Latin, Judaic, and Christian sources was so uniquely successful in promoting and spreading rapid and accelerating changes in science, technology, art, and social order, whereas many cultures survived for centuries in almost stagnant conditions, affected only by barely

noticeable changes or sunk into slumber after short-lived eruptions of creativity?

There is no good answer. Each civilization is a contingent agglutination of various social, demographic, climatic, linguistic and psychological circumstances and any search for one ultimate cause of its emergence or decline seems very unpromising. When we read studies which purport to show, for example, that the Roman empire collapsed because of the widespread use of lead pots, which poisoned and damaged the brains of the upper classes, or that the Reformation can be accounted for by the spread of syphilis in Europe, we cannot keep from strongly doubting their validity. On the other hand, the temptation to look for "causes" is hard to resist, even if we guess that civilizations arise and crumble under the impact of uncountable factors, independent of each other, and that the same may be said about the emergence of new animal or plant species, about the historical locations of cities, the distribution of mountains on the surface of the earth, or the formation of particular ethnic tongues. By trying to identify our civilization, we try to identify ourselves, to grasp the unique, collective ego which we sense is necessary and whose nonexistence would be as inconceivable as my own nonexistence is for me. And so, even though there is no answer to the question "Why is our culture what it is?" it is unlikely that we can delete the question from our minds.

Modernity itself is not modern, but clearly the clashes about modernity are more prominent in some civilizations than in others and never have they been as acute as in our time. At the beginning of the fourth century, Iamblichos stated that the Greeks are by nature lovers of novelty (φύσει γὰρ Ἕλληνές εἰσί νεωτεροποιοί)[1] and disregard tradition—in contrast to the barbarians; yet he did not praise the Greeks for that reason, quite the contrary. Are we still heirs of the Greek spirit in this respect? Is our civilization based on the belief (never expressed in so many words, to be sure) that what is *new* is good by definition? Is this one of our "absolute presuppositions?" This might be suggested by the value judgment usually associated with the adjective *reactionary*. The word is clearly pejorative, and one hardly finds people who would be ready to use it to describe themselves. And yet to be "reactionary" means nothing more than to believe that in some of its aspects, however secondary, the past was better than the present. If to be reactionary automatically means to be wrong—and the adjective is almost

1. Iamblichos, *Egyptian Mysteries* 7.5.

invariably employed with this assumption—it appears that one is always wrong in believing that the past might have been better in whatever respect, which amounts to saying that whatever is newer is better. Still, we hardly ever state our "progressism" in such a bold manner. The same ambiguity haunts the very word *modern.* In German the word means both "modern" and "fashionable," whereas English and other European tongues distinguish the two meanings. And yet the Germans might be right; it is not clear how the distinction should be defined, at least in contexts where both adjectives are usable. To be sure, in some cases those words are not interchangeable; in expressions like *modern technology, modern science,* and *modern industrial management,* the word *fashionable* would not do, but it is hard to explain the difference between *modern ideas* and *fashionable ideas, modern painting* and *fashionable painting* or *modern clothes* and *fashionable clothes.*

In many instances the term *modern* seems to be value-free and neutral, not unlike *fashionable:* modern is what is prevailing in our time, and indeed the word is often used sarcastically (as in Chaplin's *Modern Times*). On the other hand, the expressions *modern science* and *modern technology* strongly suggest, at least in common usage, that what is modern is thereby better. The ambiguity of meaning reflects perhaps the ambiguity, just mentioned, which haunts our attitude toward changes: they are both welcomed and feared, both desirable and cursed. Many companies advertise their products with phrases implying both attitudes: "good old-fashioned furniture" or "soup like Grandma used to make" as well as "an entirely new soap" or "an exciting novelty in the laundry-detergent industry." Both kinds of tricks seem to work; perhaps the sociology of advertising has produced an analysis of how, where, and why those apparently contradictory slogans prove to be successful.

Having no clear idea what *modernity* is, we have recently tried to escape forward from the issue by talking about *postmodernity* (an extension or an imitation of the somewhat older expressions *postindustrial society, postcapitalism,* etc.). I do not know what postmodern is and how it differs from premodern, nor do I feel that I ought to know. And what might come after the postmodern? The post-postmodern, the neo-postmodern, the neo-antimodern? When we leave aside the labels, the real question remains: Why is the malaise associated with the experience of modernity so widely felt, and where are the sources of those aspects of modernity that make this malaise particularly painful?

How far back modernity may be extended depends, of course, on what we believe constitutes the meaning of the notion. If it is big business, ra-

tional planning, the welfare state, and the subsequent bureaucratization of social relationships, the extent of modernity is to be measured in decades rather than centuries. If we think, however, that the foundation of modernity is in science, it would be proper to date it from the first half of the seventeenth century, when the basic rules of scientific inquiry were elaborated and codified and scientists realized—thanks mainly to Galileo and his followers—that physics was not to be conceived as a report from experience but rather as an elaboration of abstract models never to be perfectly embodied in experimental conditions. Yet nothing prevents us from probing more deeply into the past: the crucial condition of modern science was the movement toward the emancipation of secular reason from revelation, and the struggle for the independence of the faculties of arts from those of theology in medieval universities was an important part of this process. The very distinction between natural and divinely inspired knowledge, as it was worked out in Christian philosophy from the eleventh century onwards, was, in its turn, the conceptual foundation of this struggle, and it would be difficult to decide which came first: the purely philosophical separation of the two areas of knowledge or the social process whereby the intellectual urban class with its claims to autonomy was established.

Shall we then project our "modernity" onto the eleventh century and make St. Anselm and Abelard its (respectively unwilling and willing) protagonists? There is nothing conceptually wrong with such an extension, but there is nothing very helpful about it either. We can go indefinitely far, of course, in tracing back the roots of our civilization, but the question so many of us have been trying to cope with is not so much when modernity started, but What is the core—whether or not explicitly expressed—of our contemporary widespread *Unbegahen in der Kultur*? Anyway, if the word *modernity* is to be useful, the meaning of the first question has to depend on the answer to the latter. And the first answer that naturally comes to mind is summed up, of course, in the Weberian *Entzauberung*—disenchantment—or in any similar word roughly covering the same phenomenon.

We experience an overwhelming and at the same time humiliating feeling of déjà vu in following and participating in contemporary discussions about the destructive effects of the so-called secularization of Western civilization, the apparently progressive evaporation of our religious legacy, and the sad spectacle of a godless world. It appears as if we suddenly woke up to perceive things which the humble, and not necessarily highly educated, priests have been seeing—and warning us about—for three centuries and which they have repeatedly denounced in their Sunday sermons. They kept telling

their flocks that a world that has forgotten God has forgotten the very distinction between good and evil and has made human life meaningless, sunk into nihilism. Now, proudly stuffed with our sociological, historical, anthropological and philosophical knowledge, we discover the same simple wisdom, which we try to express in a slightly more sophisticated idiom.

I admit that by being old and simple, this wisdom does not necessarily cease to be true, and indeed I do believe it to be true (with some qualifications). Was Descartes the first and the main culprit? Probably so, even on the assumption that he codified philosophically a cultural trend that had already paved its way before him. By equating matter with extension and therefore abolishing the real variety in the physical universe, by letting this universe infallibly obey a few simple and all-explanatory laws of mechanics, and by reducing God to its logically necessary creator and support—a support, however, that was constant and thus robbed of its significance in explaining any particular event—he definitively, or so it seemed, did away with the concept of Cosmos, of a purposeful order of nature. The world became soulless, and only on this presupposition could modern science evolve. No miracles and no mysteries, no divine or diabolical interventions in the course of events, were conceivable any longer; all the later and still-continuing efforts to patch up the clash between the Christian wisdom of old and the so-called scientific worldview were bound to be unconvincing for this simple reason.

To be sure, it took time for the consequences of this new universe to unfold. Massive, self-aware secularity is a relatively recent phenomenon. It seems, however, from our current perspective, that the erosion of faith, inexorably advancing in educated classes, was unavoidable. The faith could have survived, ambiguously sheltered from the invasion of rationalism by a number of logical devices and relegated to a corner where it seemed both harmless and insignificant. For generations, many people could live without realizing that they were denizens of two incompatible worlds and, by a thin shell, protect the comfort of faith while trusting progress, scientific truth and modern technology.

The shell was eventually to be broken, and this was ultimately done by Nietzsche's noisy philosophical hammer. His destructive passion brought havoc into the seeming spiritual safety of the middle classes and demolished what he believed was the bad faith of those who refused to be witnesses to the death of God. He was successful in passionately attacking the spurious mental security of people who failed to realize what really had happened, because it was he who said everything to the end: the world generates no

meaning and no distinction between good and evil; reality is pointless, and there is no other hidden reality behind it; the world as we see it is the Ultimum; it does not try to convey a message to us; it does not refer to anything else; it is self-exhausting and deaf-mute. All this had to be said, and Nietzsche found a solution or a medicine for the despair: this solution was madness. Not much could have been said after him on the lines he had laid out.

It might have appeared that it was his destiny to become the prophet of modernity. In fact, he was too ambiguous to assume this task. On one hand he affirmed, under duress, the irreversible intellectual and moral consequences of modernity and poured scorn on those who timidly hoped to save something from the old tradition; on the other hand he denounced the horror of modernity, the bitter harvest of progress; he accepted what he knew—and said—was terrifying. He praised the spirit of science against the Christian "lies," but at the same time, he wanted to escape from the misery of democratic leveling and sought refuge in the ideal of a barbarous genius. Yet modernity wants to be satisfied in its superiority and not torn asunder by doubt and despair.

Therefore Nietzsche did not become the explicit orthodoxy of our age. The explicit orthodoxy still consists of patching up. We try to assert our modernity but escape from its effects by various intellectual devices, in order to convince ourselves that meaning can be restored or recovered apart from the traditional religious legacy of mankind and in spite of the destruction brought about by modernity. Some versions of liberal pop-theology contribute to this work. So do some varieties of Marxism. Nobody can foresee for how long and to what extent this work of appeasement may prove successful. But the previously mentioned intellectuals' awakening to the dangers of secularity does not seem to be a promising avenue for getting out of our present predicament, not because such reflections are false, but because we may suspect they are born of an inconsistent, manipulative spirit. There is something alarmingly desperate in intellectuals who have no religious attachment, faith or loyalty proper and who insist on the irreplaceable educational and moral role of religion in our world and deplore its fragility, to which they themselves eminently bear witness. I do not blame them either for being irreligious or for asserting the crucial value of religious experience; I simply cannot persuade myself that their work might produce changes they believe desirable, because to spread faith, faith is needed and not an intellectual assertion of the social utility of faith. And the modern reflection on the place of the sacred in human life does not want to be

manipulative in the sense of Machiavelli or of the seventeenth-century libertines who admitted that while piety was necessary for the simpletons, skeptical incredulity suited the enlightened. Therefore such an approach, however understandable, not only leaves us where we were before but is itself a product of the same modernity it tries to restrict, and it expresses modernity's melancholic dissatisfaction with itself.

We ought to be cautious, however, when we make judgments about what in our culture expresses modernity and what expresses the antimodern resistance. We know from historical experience that what is new in cultural processes often appears disguised as the old, and vice versa—the old may easily put on fashionable clothes. The Reformation was ostensibly and self-consciously reactionary: its dream was to reverse the corrupting effects of the centuries-long developments in theology, in the growth of secular reason, in institutional forms of Christianity, and to recover the pristine purity of faith of apostolic times; but, by doing away with accumulated tradition as a source of intellectual and moral authority, it in fact encouraged a movement which was exactly opposed to its intention; it liberated the spirit of rational inquiry into religious matters because it made reason — otherwise violently attacked — independent from the Church and tradition. Romantic nationalism often expressed itself as a nostalgic quest for the lost beauty of the preindustrial world, but by thus praising the *praeteritum,* it contributed greatly to the eminently modern phenomenon which is the idea of the nation-state; and such a superbly modern product as Nazism was a monstrous revival of those romantic reveries, thereby perhaps disproving the notion that we can properly measure modernity on the axis "tradition-rationality." Marxism was a mixture of an unequivocal enthusiasm for modernity, rational organization, and technological progress with the same yearning after the archaic community, and it culminated in the utopian expectation of the perfect world of the future, in which both sets of values would be implemented and make a harmonious alloy: modern factory and the Athenian agora would somehow merge into one. Existential philosophy might have appeared to be a highly modern phenomenon—which it was, in its vocabulary and conceptual network—yet from today's perspective it seems rather a desperate attempt to revindicate the idea of personal responsibility in face of a world in which progress insists that human persons become, with their assent, no more than the media whereby anonymous social, bureaucratic, or technical forces express themselves and in which people are unaware that in letting themselves be reduced to irresponsible

instruments of the impersonal work of the society, they rob themselves of their humanity.

And so the "cunning reason" of history probably has not stopped operating, and nobody can guess, let alone have any certainty about, whether his own contribution to the collective life is to be seen in terms of modernity or of the reactionary resistance to it, nor, for that matter, which of them deserves support.

We might look for comfort in the idea that civilizations are able to take care of themselves and to mobilize self-correcting mechanisms or produce antibodies that fight the perilous effects of their own growth. The experience that led to this idea is not quite reassuring, though: after all, we know that the symptoms of a disease are often the organism's attempts at self-cure; most of us die as a result of self-defense devices which our bodies employ to combat external dangers. Antibodies can kill. So might the unpredictable cost of self-regulation kill a civilization before it regains the sought-after equilibrium. It is true, no doubt, that the criticism of our modernity—the modernity associated with, or perhaps put into movement by, the industrialization process—began as soon as did modernity itself, and that it has continued to spread since. Leaving aside the great eighteenth- and nineteenth-century critics of modernity—Vico, Rousseau, Tocqueville, the romantics—we know in our age a number of outstanding thinkers who have pointed out and deplored the progressive loss of meaning in the manipulation-prone *Massengesellschaft*. Husserl attacked, in philosophical terms, the inability of modern science to identity its own objects meaningfully, its satisfaction with the phenomenalist exactitude that improves our predictive and controlling power over things but is gained at the expense of understanding. Heidegger spotted the root of our descent into impersonality in the oblivion of metaphysical insight. Jaspers associated the moral and mental passivity of seemingly liberated masses with the erosion of historical self-awareness and the subsequent loss of responsible subjectivity and of the ability to base personal relationships on trust. Ortega y Gasset noticed the collapse of high standards in the arts and humanities as a result of intellectuals being compelled to adjust themselves to the low tastes of the masses. So, in spuriously Marxist terms, did the Frankfurt School people.

The critique of modernity, whether literary or philosophical, might be seen, in its immense variety, as a self-defense organ of our civilization, but so far it has failed to prevent modernity from advancing at an unprecedented speed. The lament seems all-pervading; whatever area of life we re-

flect upon, our natural instinct is to ask, What is wrong with it? And indeed we keep asking, What is wrong with God? With democracy? With socialism? With art? With sex? With the family? With economic growth? It seems as though we live with the feeling of an all-encompassing crisis without being able, however, to identify its causes clearly, unless we escape into easy, one-word pseudosolutions ("capitalism," "God has been forgotten," etc.). The optimists often become very popular and are listened to avidly, but they are met with derision in intellectual circles; we prefer to be gloomy.

It seems to us sometimes that it is less the content of changes and more their dizzy pace which terrifies us and leaves us in a state of never-ending insecurity, feeling that nothing is certain or established any longer and that whatever is new is likely to become obsolete in no time. There are a few people still living among us who were born on earth where there were no cars and no radios, and the electric light was an exciting novelty; during their lifetimes, how many literary and artistic schools have been born and died away, how many philosophical and ideological fashions have arisen and gone, how many states have been built or have perished! We all participate in those changes, and we bemoan them nonetheless, because they seem to deprive our lives of any substance we can safely rely upon.

I was told that near a Nazi extermination camp, where the soil was superbly fertilized with the ashes of uncountable cremated bodies of the victims, the cabbage grew so rapidly that it had no time to form a head and produced instead a stem with separate leaves; apparently it was not edible. This might serve as a parable for thinking about the morbid tempo of progress.

We know, of course, that we must not extrapolate the recent curves of growth—some of them exponential—in various areas of civilization, and that the curves must decline one way or another or perhaps turn into S-curves; we fear, however, that the change might come too late or be caused by catastrophes that will destroy the civilization by healing it.

It would be silly, of course, to be either "for" or "against" modernity *tout court,* not only because it is pointless to try to stop the development of technology, science, and economic rationality, but because both modernity and antimodernity may be expressed in barbarous and antihuman forms. The Iranian theocratic revolution was clearly antimodern, and in Afghanistan it is the invaders who carry in various ways the spirit of modernity against the nationalist and religious resistance of poor tribes. It is trivially true that very often the blessings and the horrors of progress are inseparably tied to each other, as are the enjoyments and the miseries of traditionalism.

When I try, however, to point out the most dangerous characteristic of modernity, I tend to sum up my fear in one phrase: the disappearance of taboos. There is no way to distinguish between "good" and "bad" taboos, artificially to support the former and remove the latter; the abrogation of one, on the pretext of its irrationality, results in a domino effect that brings the withering away of others. Most sexual taboos have been abolished, and the remaining few—like the interdiction of incest and pedophilia—are under attack; groups in various countries openly advocate their right to engage in sexual intercourse with children, that is, their right to rape them, and demand—so far unsuccessfully—the abolition of corresponding legal sanctions. The taboo regarding respect for the bodies of the dead seems to be a candidate for extinction, and although the technique of transplanting organs has saved many lives and will doubtlessly save many more, I find it difficult not to feel sympathy for people who anticipate with horror a world in which dead bodies will be no more than a store of spare parts for the living or raw material for various industrial purposes; perhaps respect for the dead and for the living—and for life itself—are inseparable. Various traditional human bonds which make communal life possible, and without which our existence would be regulated only by greed and fear, are not likely to survive without a taboo system, and it is perhaps better to believe in the validity of even apparently silly taboos than to let them all vanish. To the extent that rationality and rationalization threaten the very presence of taboos of our civilization, they corrode its ability to survive. But it is quite improbable that taboos, which are barriers erected by instinct and not by conscious planning, could be saved, or selectively saved, by a rational technique; in this area we can only rely on the uncertain hope that the social self-preservation drive will prove strong enough to react to their evaporation, and that this reaction will not come in barbarous form.

The point is that in the normal sense of "rationality" there are no more rational grounds for respecting human life and human personal rights than there are, say, for forbidding the consumption of shrimp among Jews, of meat on Friday among Christians, and of wine among Muslims. They are all "irrational" taboos. And a totalitarian system which treats people as exchangeable parts in the state machinery, to be used, discarded, or destroyed according to the state's needs, is in a sense a triumph of rationality. Still, it is compelled, in order to survive, reluctantly to restore some of those irrational values and thus to deny its rationality, thereby proving that perfect rationality is a self-defeating goal.

CHAPTER ONE

What Is the Problem About Modernity?

Dating the Start of Modernity

Statements like "The modern age has come to an end" are easier to resonate to than to understand. We can see why people set such store on the demise of modernity—a demise that is supposedly unavoidable, if it has not already happened—only if we first ask what they mean by the word "modern", and just when do they think that Modernity began.

Raise these questions, and ambiguity takes over. Some people date the origin of modernity to the year 1436, with Gutenberg's adoption of moveable type; some to A.D. 1520, and Luther's rebellion against Church authority; others to 1648, and the end of the Thirty Years' War; others to the American or French Revolution of 1776 or 1789; while modern times start for a few only in 1895, with Freud's *Interpretation of Dreams* and the rise of "modernism" in the fine arts and literature. How we ourselves are to feel about the prospects of Modernity—whether we join those who are despondent at its end and say goodbye to it with regret, or those who view its departure with satisfaction and look forward with pleasure to the coming of "post-modern" times—depends on what we see as the heart and core of the "modern", and what key events in our eyes gave rise to the "modern" world.

In one sense, the idea of Modernity "coming to an end" is paradoxical. For advertisers of consumer goods, to be modern is just to be new (to be the latest thing, *le dernier cri*), superseding all similar things. Most of us are living in a consumption economy, which never tires of novelty, and its motto—*semper aliquid novi*—was already familiar to Paul of Tarsus. In this sense, the future brings us new (and "more modern") things one after the other, so that Modernity is the inexhaustible cornucopia of novelty. The

Modern age can have a stop, then, only in some quite other sense, which marks off an identifiable period of history, beginning in or around 1436 or 1648 or 1895, and now showing signs of completion. The critical question is, "What marks define the beginning and end of *Modernity*?"

The end of Modernity is closer to us than the beginning, and may be easier to spot; so let us look at the groups who write or speak about the coming, "post-modern" period in various fields of human activity, and decipher the signs that herald the end of Modernity for them. Recently, this debate has been most articulate in architecture. For thirty years after the Second World War, the modern style of Mies van der Rohe and his followers, with its anonymous, timeless, indistinguishable buildings, dominated large-scale public architecture worldwide. In the 1970s, a new generation of architects and designers, led by **Robert Venturi** in the United States, with colleagues in half-a-dozen European countries, fought against this featureless and minimal modern style, and reintroduced into architecture elements of decoration, local color, historical reference, and even fantasy that Mies would have objected to on intellectual as well as aesthetic grounds. These designers have been so productive that by now a noted German historian of architecture, Heinrich Klotz, has actually written a fullscale *History of Post-Modern Architecture*.

The debate about "post-modern" architecture is vocal, intriguing, and well publicized, but for our purposes it is rather marginal. When Venturi and his colleagues argue that the age of "modern" architecture is past, and must yield to a new "post-modern" style of building, their target of criticism is not modernity as a whole, but the particular movement in 20th-century art and design known as "modernism". Those who study the origins of the modernist style often trace it back to the late 19th century, particularly to the **Glasgow architect-engineer, Charles Rennie Mackintosh**: so, in architecture, we are concerned with a story only ninety years old—far less than historians have in mind, when they contrast modern with ancient and medieval history. Yet, for our purpose, architecture is neither irrelevant nor uninteresting: in some curious and unexpected ways modernist art and architecture, from 1900 on, picked up and gave new life to ideas and methods originating in the modern thought and practice of the 17th century. But, whatever else is or is not clear, the *Modernity* around which controversy rages today clearly started long before 1890.

Even the controversy about "post-Modernity" precedes the revolution in architecture begun by Venturi. The "post-modern" is the topic of a set of essays in social, economic and political criticism by Peter Drucker, dating from as early as 1957 and published in 1965 in a book, *Landmarks for Tomorrow*. Drucker pointed out radical differences between current

economic, social, and political conditions and those typically associated with the term "Modernity", and concluded that it is quite misleading to apply that term to "the way we live nowadays". He argued that, instead of assuming that the nations of the world can continue with business as usual, we must see that the nation-state, which claims unqualified sovereignty, is no longer the self-sustaining political unit that it was in the 17th and 18th centuries. The times that we live in demand institutions of new and more functional kinds: institutions that overlap national boundaries and serve *trans*national social and economic needs.

If the central topics of the debate about Modernity are the political claims of the modern nation-state, so that the end of Modernity is linked with the eclipse of national sovereignty, we must look for the beginning of that era in the 16th and 17th centuries. On this measure, the modern era began with the creation of separate, independent sovereign states, each of them organized around a particular nation, with its own language and culture, maintaining a government that was legitimated as expressing the national will, or national traditions, or interests. That brings us closer to what contemporary historians call the "early modern" period, and gives us three hundred or more years of elbow room to maneuver in. Before the mid-16th century, the organization of states around nations was the exception, not the rule: before 1550, the general foundation of political obligation was still feudal fealty, not national loyalty. In this sense, the starting date for Modernity belongs where many historians already put it: somewhere in the period from 1600 to 1650.

This date for the start of Modernity also fits the preoccupations of other contemporary critics. The 1960s and '70s saw the renewal of an attack on the mechanistic "inhumanity" of Newtonian Science launched 150 years earlier by William Blake in England, and Friedrich Schiller in Germany. By the mid '60s, people argued, it was time to push Blake and Schiller's critiques through to a political completion. Blake had warned that industry would destroy the country, and turn it into a waste land of satanic mills, but the economic power and political clout of big business now meant that this process was unchecked. With Barry Commoner as a spokesman for biology, and Rachel Carson's *Silent Spring* as a rhetorical manifesto, people in the 1970s fought for "ecology" and "environmental protection", so as to defend the natural world against human despoilers and violators.

The satanic mills and factories about which Blake complained were products of the late 18th and 19th centuries: water or steam power were needed to run the machines that made these new methods of production more efficient than cottage industry had ever been. By this standard, the

beginnings of Modernity thus go back to around 1800. Newton's classical *Mathematical Principles of Natural Philosophy* was published in 1687, but his theory of dynamics and planetary motion was of no direct use to engineers. Machinery and "manufactories" waited until the effective development of the steam engine, after 1750. Taking the rise of industry as the mark of Modernity, then, places the start of the modern age on either side of the year 1800, at the time of the Industrial Revolution.

By contrast, if we see Newton's creation of modern science as the start of Modernity, the starting date is in the 1680s; or—to the extent that Newton completed intellectual tasks that were framed by Galileo in scientific terms, and as methodological issues by Descartes—back in the 1630s. This is where Modernity begins for many purposes: British and American universities begin their courses on modern philosophy with Descartes' *Meditations* and *Discourse on Method*, while their courses on the history of science present Galileo as the founder of modern science. The critics are far from unanimous in their objections to modernism and Modernity, and in their chronologies of the modern era, but for most of them the chronology eventually reaches back to the early decades of the 17th century.

If critics of Modernity cannot agree on when the Modern Age began, the same is also true of its supporters. The German philosopher Jürgen Habermas pokes fun at the loose way in which some writers throw the phrase "post-modern" around, and laughs at them as "posties". For him, the modern era began when, inspired by the French Revolution, Immanuel Kant showed how impartial, universal moral standards can be applied to judge intentions and policies in the political realm. In Kant, the French Enlightenment's social ideals found philosophical expression; and, ever since, progressive politics has been directed by the impartial demands of Kantian equity. By destroying the *ancien régime,* the French Revolution opened the road to democracy and political participation, and its moral legacy is as powerful today as it was in the late 18th century. For Habermas, then, the starting point is the last quarter of the 18th century, more specifically the year 1776 or 1789.

That date, however, is only a stepping stone to an earlier beginning. Kant's work did not come out of a blue sky. His emphasis on universal moral maxims extends into ethics an ideal of "rationality" that had been formulated by Descartes, in logic and natural philosophy, more than a century before. Once again, "Modernity" is the historical phase that begins with Galileo's and Descartes' commitment to new, rational methods of

inquiry; and any suggestion that Modernity today is over and done with is suspect, being at least reactionary, and very likely irrationalist, too. Contemporary appeals to the "post-modern" may thus serve only as additional obstacles to further emancipatory change.

Other writers value Modernity in other ways, and for other reasons. Old-time progressive politics rested on a long-term faith that science is the proven road to human health and welfare, and this faith shaped the technological agenda for half-a-dozen World Fairs. This dream still carries conviction for many people today: what underlies their continued trust in science and industry is their commitment to the conception of "rationality" that was established among European natural philosophers in the 17th century, and promised intellectual certainty and harmony. The scientific blessings of our age (above all, those in medicine) were not widely available before the late 19th century, but these blessings were happy outcomes of scientific inquiries that have made continuous progress ever since Galileo and Descartes, and so were the long-term products of the 17th-century revolutions undertaken in physics by Galileo, Kepler, and Newton, and in philosophy by Descartes, Locke, and Leibniz.

Modern science and technology can thus be seen as the source either of blessings, or of problems, or both. In either case, their intellectual origin makes the 1630s the most plausible starting date for Modernity. Then, it seems, scientific inquiries became "rational"—thanks to Galileo in astronomy and mechanics, and to Descartes in logic and epistemology. Thirty years later, this commitment to "rationality" was extended into the practical realm, when the political and diplomatic system of the European States was reorganized on the basis of *nations*. From then on, at least in theory, the warrant for a sovereign monarch's exercise of power lay less in the fact of an inherited feudal title than in the will of the people who consented to his rule: once this became the recognized basis of state authority, politics could also be analyzed in the new "rational" terms.

Despite all the ambiguities surrounding the idea of Modernity, and the varied dates that different people give for its origin, the confusions and disagreements hide an underlying consensus. Throughout the current controversy—whether about the modern and the post-modern in art and architecture, the virtues of modern science, or the defects of modern technology—the arguments rest on shared assumptions about rationality. All parties to the debate agree that the self-styled "new philosophers" of the 17th century were responsible for new ways of thinking about nature and society. They committed the modern world to thinking about nature in a new and "scientific" way, and to use more "rational" methods to deal with the problems of human life and society. Their work was therefore a

turning point in European history, and deserves to be marked off as the true starting point of Modernity.

In this respect, other disciplines and activities thus take a cue from philosophy and natural science. Questions about the birth and death of Modernity, or the beginning and end of the Modern Age, are most urgent in those key fields. Physicists and biologists are aware that the scope and methods of science today differ markedly from those of Lavoisier's or Newton's time; but the development of quantum electrodynamics out of Maxwell's electromagnetism, or of biomolecular genetics from Bernard's physiology, involves (in their eyes) no discontinuity comparable to that which occurred in the 1630s. Such 20th-century sciences as quantum mechanics, ecology and psychoanalysis take us a long way from the axioms of 17th-century "natural philosophy"—so much so that a few writers are tempted to call these contemporary disciplines "post-modern sciences". But this phrase does not mark the break with earlier "modern" science that is implied in Venturi's substitution of "post-modern" for "modernist" architecture. The changes of intellectual method or standpoint *within* 20th-century natural science in no way mean that molecular biology, for example, has *broken with* the ideas of Claude Bernard or Charles Darwin.

Philosophy, by contrast, now faces a more drastic situation. People working in the natural sciences share in more or less agreed-upon tasks, but the agenda of philosophy has always been contested: its credentials have never been agreed upon, even by its classic authors. That self-doubt was never more striking or severe than in our own century. **John Dewey's** 1929 Gifford Lectures on *The Quest for Certainty* claimed that the debate in philosophy had rested, ever since the 1630s, on too passive a view of the human mind, and on inappropriate demands for geometrical certainty. In the 1940s **Ludwig Wittgenstein** argued that endemic confusion over the "grammar" of language leads to vacuous speculations: far from being profound, philosophy thus distracts us from the truly important issues. Edmund Husserl and Martin Heidegger wrote no less caustically about the philosophical enterprise; while **Richard Rorty, surveying** the debate from the late 1970s, concluded that philosophers have little left to do except to join in a personal conversation about the world as they see it, from all of their individual points of view. Reading Rorty's essays, we carry off the image of a party of ex-soldiers disabled in the intellectual wars, sharing, over a glass of wine, memories of "old, forgotten, far-off things, and battles long ago."

Given so problematic an agenda, what are philosophers to do? Must they now regard all philosophy as a kind of autobiography; or can they piece together an alternative program, out of the wreckage left by their parents'

and grandparents' demolition work? The recent critique here gives us some first useful clues. **When doubts are raised about the legitimacy of philosophy, what is called in question is still the tradition founded by René Descartes at the very beginning of Modernity.** Though Wittgenstein opens his *Philosophical Investigations* with a passage from Augustine and also discusses some positions from Plato, his main thrust (like Dewey's and Heidegger's) is directed at a "theory-centered" *style* of philosophizing—i.e., one that poses problems, and seeks solutions, stated in timeless, universal terms—and it was just that philosophical style, whose charms were linked to the quest for certainty, that defined the agenda of "modern" philosophy, from 1650 on.

Beginning with Descartes, the "theory-centered" style of philosophy is (in a word) *modern* philosophy, while conversely "modern" philosophy is more or less entirely *theory-centered* philosophy. **In philosophy more than elsewhere, then, one can argue that Modernity is over and done with.** Whereas in natural science the continued evolution of modern ideas and methods has bred a new generation of ideas and methods that can escape criticisms that are fatal to 17th-century ideas about scientific method, in philosophy there is no way left in which this can happen. After the destructive work of Dewey, Heidegger, Wittgenstein, and Rorty, philosophy has limited options. These boil down to three possibilities: It can cling to the discredited research program of a purely theoretical (i.e. "modern") philosophy, which will end by driving it out of business; it can look for new and less exclusively theoretical ways of working, and develop the methods needed for a more practical ("*post*-modern") agenda; or it can **return to its pre-17th-century traditions, and try to recover the lost ("*pre*-modern") topics that were sidetracked by Descartes,** but can be usefully taken up for the future.

If the cases of science and philosophy are any general guide to the issues underlying the contemporary critique of the "modern" age, or underlying the recent doubts about the value of Modernity, they confirm that the epoch whose end we supposedly see today began some time in the first half of the 17th century. In a dozen areas, the modes of life and thought in modern Europe from 1700 on (modern science and medicine, engineering and institutions) were assumed to be more *rational* than those typical of medieval Europe, or those found in less developed societies and cultures today. Further, it was assumed that uniquely rational procedures exist for handling the intellectual and practical problems of any field of study, procedures which are available to anyone who sets superstition and mythology aside, and attacks those problems in ways free of local prejudice and transient fashion. These assumptions were not confined to philoso-

phers, but were shared by people in all walks of life, and lay deep in our "modern" ways of thinking about the world.

In the last few years, those assumptions have come under damaging fire. As a result, the critique of Modernity has broadened into a critique of Rationality itself. Faced with questions about rationality, Rorty takes what he calls a "frankly ethnocentric" position: every culture is entitled to judge matters of rationality by its own lights. In a similar spirit, Alasdair MacIntyre requires us to look behind all questions of abstract "rationality" and inquire *whose* conception of rationality is operative in any situation. If the adoption of "rational" modes of thought and practice was the crucial new feature of Modernity, then the dividing line between Medieval and Modern times rests more on our philosophical assumptions than we had supposed. Now that rationality too is open to challenge, the traditional picture of a medieval world dominated by theology yielding to a modern world committed to rationality must be reconsidered.

Evidently, *something* important happened early in the 17th century, as a result of which—for good or for ill, and probably for both—society and culture in Western Europe and North America developed in a different direction from that which they would otherwise have followed. But this still requires us to ask, first, what the events were that were so crucial to the creation of modern Europe; secondly, how these events influenced the ways in which Europeans lived and thought later in the century; and, lastly, how they shaped the development of Modernity right up to our own time—not least, our horizons of expectation for the future.

Most scholars agree on one point. The "modern" commitment to rationality in human affairs was a product of those intellectual changes in the mid-17th-century whose protagonists were Galileo in physics and astronomy, and René Descartes in mathematics and epistemology. Beyond this point, different people go on in different directions. Some focus on the merits of these changes, some on their damaging by-products, while a few attempt to strike a balance between the costs and benefits of the new attitudes. What is rarely questioned is the *timing* of the changeover: the significant changes are usually placed between the prime of Galileo in the early 1600s, and the appearance of Newton's *Principia* in 1687.

As the old song warns, however, what everyone is liable to assume "ain't necessarily so." Too often, what everyone *believes,* nobody *knows.* Until recently, people assumed that Scottish tartans were woven to old designs handed on from generation to generation within a Highland clan, and it was a shock when the historians found that they were invented by an enterprising 18th-century textile merchant from South of the Border. Until recently, again, historians of science believed that William Harvey discov-

ered the circulation of blood, by refuting Galen's theory that the blood "ebbed and flowed" in the veins: a little first-hand research showed Donald Fleming that Galen, too, believed in a unidirectional blood circulation, and that Harvey refined his theory rather than refuting it. The unanimity of earlier historians, it seemed, had been the result of their borrowing from each other's narratives instead of returning to the original texts.

As we have just seen, age-old traditions are sometimes conjured into existence long after the event, and the circumstances of their creation throw as much light on the times in which they were invented and accepted as they do on the times to which they ostensibly refer. As a result, all we can safely conclude from this initial survey of the debate between the moderns and the post-moderns is that, for much of the 20th century, people in Western Europe and North America generally accepted two statements about the origins of Modernity and the modern era: viz., that the modern age began in the 17th century, and that the transition from medieval to modern modes of thought and practice rested on the adoption of rational methods in all serious fields of intellectual inquiry—by Galileo Galilei in physics, by René Descartes in epistemology—with their example soon being followed in political theory by Thomas Hobbes.

These general beliefs are the foundation stones of what we may call the *standard account* or *received view* of Modernity. But the existence of a consensus is one thing: the soundness of this view, the reliability of the historical assumptions on which it depends, are something else. Those questions are sufficiently open to doubt to justify our starting our inquiries, here, by looking again more closely at the actual credentials, and the historical basis, of the standard account.

The Standard Account and Its Defects

Those of us who grew up in England in the 1930s and '40s had little doubt what Modernity was, and we were clear about its merits. It was our good luck to be born into the modern world, rather than some earlier, benighted time. We were better fed, more comfortable, and healthier than our ancestors. Even more, we were free to think and say what we liked, and follow our ideas in any direction that youthful curiosity pointed us. For us, Modernity was unquestionably "a Good Thing"; and we only hoped that, for the sake of the rest of humanity, the whole world would soon become as "modern" as us.

In those two decades we also shared in the received wisdom about the beginning of Modernity. We were told that by A.D. 1600 most of Europe,

notably the Protestant countries of Northern Europe, had reached a new level of prosperity and material comfort. The development of trade, the growth of cities, and the invention of printed books, had made literacy as widespread in the prosperous laity as it had earlier been among priests, monks, and other ecclesiastics. A secular culture emerged, characteristic of the educated laity rather than of the Church. Lay scholars read and thought for themselves, no longer recognized the Church's right to tell them what to believe, and began to judge all doctrines by their inherent plausibility. Turning away from medieval scholasticism, 17th-century thinkers developed new ideas based on their first-hand experience.

The rise of a lay culture cleared the ground for a definitive break with the Middle Ages, in both the intellectual and the practical realms. The intellectual revolution was launched by Galileo Galilei, and by René Descartes. It had two aspects: it was a *scientific* revolution, because it led to striking innovations in physics and astronomy, and it was the birth of a new method in *philosophy,* since it established a research tradition in theory of knowledge and philosophy of mind that has lasted right up to our own times. In fact, the founding documents of modern thought—Galileo's *Dialogues concerning the Two Principal World Systems* and Descartes' *Discourse on Method*—both dated from the same decade: that of the 1630s.

We were taught that this 17th-century insistence on the power of *rationality,* along with the rejection of tradition and superstition—the two were not clearly distinguished—reshaped European life and society generally. After a brief flowering in Classical Greece, natural science had made little progress for two thousand years, because people either did not understand, or were distracted from, the systematic use of "scientific method". Earlier ideas of Nature were thus refined spasmodically and haphazardly, for lack of recognized ways to improve scientific thought systematically and methodically. Once the "new philosophers" (notably, Galileo, Bacon, and Descartes) had brought to light and clarified the conditions for intellectual progress in science, ideas of Nature became progressively more rational and realistic. Meanwhile, alongside the new empirical sciences of nature, philosophy was being emancipated from the tutelage of theology, thus setting aside earlier errors and prejudices, and making a fresh start. What Descartes had done for scientific argument in the *Discourse on Method,* he did for general philosophy in his *Meditations.* He carried the analysis back to primitive elements in experience that were, in principle, available to reflective thinkers in any culture, and at all times. As a result, philosophy became a field of "pure" inquiry, open to all clear-headed, reflective, self-critical thinkers.

The 1930s view of Modernity put less emphasis on technology or the

practical arts. Initially, the 17th-century revolution in natural science and philosophy had no direct effect on medicine or engineering: the new scientists helped design a few devices, such as vacuum pumps, ship's chronometers, and microscopes; but, as Bacon had foreseen, it was a long time before the theoretical light of 17th-century science yielded an equal harvest of practical fruit. (In the event, it took until after 1850.) However, though hopes of technological improvement were deferred, they were none-the-less guaranteed. Given enough time, a sound theory of nature could not help generating practical dividends.

Finally (we learned) the splits within Christendom, and the growing power of the laity, allowed European nations to insist on their sovereign authority to manage their social and political lives, which the medieval Papacy had usurped and the Counter-Reformation Church still coveted. By the year 1630, the Holy Roman Empire was an empty shell of an institution: from now on, European politics focused singlemindedly on the acts of sovereign Nation States. So understood, loyalty and political obligation referred to one state at a time. A few monarchs, like Charles I of England, claimed to be unchallenged embodiments of their nations' sovereignty; but every country had a right to order its affairs, free of interference by outsiders, notably ecclesiastical outsiders. All challenges to sovereign authority arose from within the nation-state in question: for instance, from members of a new, mercantile class, who sought a larger share in the exercise of that national sovereignty. True: in the 1640s, tranquil old England had seen a Civil War, which led to the execution of Charles I. But this (we were told) was a teething trouble of the new age: it sprang from Charles' obstinacy in pressing anachronistic claims. As late as the 1640s, the structure of the Nation-State was not yet clear: the new patterns of society and loyalty took their definitive form only after 1660. Meanwhile, the emancipatory power of reason generated a ferment of enthusiasms that still had to be worked through and outgrown.

One way or another, then, a combination of sensory experience with mathematical reasoning, Newton's science with Descartes' philosophy, combined to construct a world of physical theory and technical practice of which we in the England of the 1930s were the happy inheritors. Right up to the 1950s, indeed, this optimistic line remained appealing, and the authenticity of the historical narrative was rarely questioned. Even now, historians of early modern England still treat the early 17th century as the transition point from medieval to modern times. If this means that William Shakespeare is not a truly modern but a late-medieval dramatist, that leaves them unmoved. In their eyes, this view of Shakespeare is no stranger than John Maynard Keynes' description of Isaac Newton, on the tercentennial

of his birth in 1942, as being not merely the first genius of modern science, but also "the last of the Magi".

Looking back at the "received view" of Modernity after fifty years, my inclination is to retort, "Don't believe a word of it!" From the start, that whole story was one-sided and over-optimistic, and veered into self-congratulation. True, it is easy enough to criticize your own former beliefs harshly, so I must try not to exaggerate. In some respects, the standard account is still correct; but we need to balance these truths against its major errors of history and interpretation. These defects become more evident with each year that goes by. The originality of the 17th-century scientists' work in mechanics and astronomy—that of Galileo and Kepler, Descartes, Huygens, and above all Newton—is as real and important as ever. But any assumption that this success was the outcome of substituting a rationally self-justifying method for the medieval reliance on tradition and superstition misses all the light and shade in a complex sequence of events. On the frontier between philosophy and the sciences, many things have changed since 1950: these changes undermine earlier assumptions that the logical recipe for making discoveries about nature lies in a universal scientific method. The worst defects in the standard account, however, are not matters of philosophy, but of straight historical fact. The historical assumptions on which it rested are no longer credible.

The received view took it for granted that the political, economic, social, and intellectual condition of Western Europe radically improved from 1600 on, in ways that encouraged the development of new political institutions, and more rational methods of inquiry. This assumption is increasingly open to challenge. Specifically, in the 1930s we assumed that 17th-century philosophy and science were the products of prosperity, and that belief no longer bears scrutiny. **Far from the years 1605–1650 being prosperous or comfortable, they are now seen as having been among the most uncomfortable, and even frantic, years in all European history.** Instead of regarding Modern Science and Philosophy as the products of leisure, therefore, we will do better to turn the received view upside down, and treat them as responses to a contemporary crisis.

We also assumed that, after 1600, the yoke of religion was lighter than before; **whereas the theological situation was in fact less onerous in the mid-16th century than it became from 1620 to 1660.** Despite his radical ideas, Nicholaus Copernicus in the 1530s or 1540s did not suffer the rigid Church discipline that Galileo was exposed to a hundred years later. After the Council of Trent, the confrontation between the Protestant and Catholic heirs to historic Christianity took on a fresh intolerance. This set "papists" and "heretics" at one another's throats, and made the Thirty

Years' War, from 1618 to 1648, a particularly bloody and brutal conflict. In any event, the cultural break with the Middle Ages did not need to wait for the 17th century: it had taken place a good 100 or 150 years earlier. When we compare the spirit of 17th-century thinkers, and the content of their ideas, with the emancipatory ideas of 16th-century writers, indeed, we may even find 17th-century innovations in science and philosophy beginning to look less like revolutionary advances, and more like a defensive counter-revolution.

As a first constructive step toward a better account of the origins of Modernity, let us see why these assumptions no longer carry the same conviction among general historians today that they did in the 1930s. Over the last thirty years, modern historians have reached a unanimous verdict about the social and economic condition of Europe from 1610 to 1660. In the 16th century, Europe enjoyed a largely unbroken economic expansion, building up its capital holdings from the silver in the holds of the treasure ships from Spain's South American colonies: in the 17th century, the prosperity came to a grinding halt. It was followed by years of alternating depression and uncertainty. In early 17th-century Europe, life was so far from being comfortable that, over much of the continent from 1615 to 1650, people had a fair chance of having their throats cut and their houses burned down by strangers who merely disliked their religion. Far from this being a time of prosperity and reasonableness, it now looks like a scene from Lebanon in the 1980s. As many historians put it, from 1620 on the state of Europe was one of general crisis.

The picture of early 17th-century Europe as in "general crisis" was made explicit in the 1950s by the French historian, Roland Mousnier, but it has since been developed by historians of many backgrounds, and from countries as far apart as Scandinavia and Italy, the U.S.A. and the Soviet Union. Naturally, they give different interpretations of the crisis, but the basic facts are not in dispute. By 1600, the political dominance of Spain was ending, France was divided along religious lines, England was drifting into civil war. In Central Europe, the fragmented states of Germany were tearing one another apart, the Catholic princes being kept in line by Austria, and the Protestants reinforced by Sweden. Economic expansion was replaced by depression: there was a grave slump from 1619 to 1622. International trade fell away and unemployment was general, so creating a pool of mercenaries available for hire in the Thirty Years' War, and all these misfortunes were aggravated by a worldwide worsening of the climate, with unusually high levels of carbon in the atmosphere. (This was

the time of the Little Ice Age—as described in Virginia Woolf's novel *Orlando*—when the River Thames froze over at London, and whole oxen were roasted on the ice.)

As Spain lost its undisputed command of the South Atlantic, the inflow of silver became unreliable, and the growth of Europe's capital base was checked. There were recurrences of the plague: France was specially hard hit in 1630–32 and 1647–49, while the Great Plague of 1665 in England was only the last in a sequence of violent outbreaks. Meanwhile, a series of cool, wet summers had severe effects on food production. With 80 to 90 percent of the population dependent on farming, this led to widespread suffering and rural depopulation. In marginal upland areas above all (we are told) there was, from 1615 on, a steady fall in grain yields, and entire villages were abandoned, to swell the disease-ridden city slums. Amid these catastrophes, the United Provinces of the Netherlands (Holland, as we know it) stands out as the sole exception, enjoying a Golden Age at a time when the rest of Europe went through a particularly bad patch.

Despite this unanimity among general historians, surprisingly few writers on science and philosophy in the 17th century take that verdict into account. Instead, they continue to treat the reputed prosperity and relaxation of the early 17th century as an obvious and familiar fact. Consult Volume IV of *The New Cambridge Modern History,* covering the late 16th and early 17th century, and you will discover that every essay but one considers how the Religious Wars, notably the Thirty Years' War, affected their subjects. The single exception is the essay on the history of 17th-century science, which ignores these brutal conflicts and treats the agenda of natural science as having arisen autonomously, out of its internal arguments alone.

The second of our earlier assumptions has no more historical basis. Any idea that ecclesiastical constraints and controls were relaxed in the 17th century is misconceived: if anything, the truth was more nearly the opposite. Rejecting all the Protestant reformers' attempts to change the institutions and practices of Christianity from within, the Papacy chose direct confrontation, and denounced the Protestants as schismatic. This policy was launched in the late 16th century after the Council of Trent, but culminated after 1618, with the bloodshed of the Thirty Years' War. From then on, backsliders met with no mercy. Theological commitments were not less rigorous and demanding, but more. There was less chance for critical discussion of doctrine, not more. For the first time, the need to close ranks and defend Catholicism against the Protestant heretics was an occasion for elevating key doctrines out of reach of reappraisal, even by

the most sympathetic and convinced believers. The distinction between "doctrines" and "dogmas" was invented by the Council of Trent: Counter-Reformation Catholicism was thus dogmatic, in a way that the pre-Reformation Christianity of, say, an Aquinas could never have been. Theological pressure on scientists and other intellectual innovators did not weaken in the first half of the 17th century: rather, it *intensified.* Nor was this the case on the Catholic side of the fence exclusively: on the Protestant side, equally, many Calvinists and Lutherans were just as rigorous and dogmatic as any Jesuit or Jansenist.

The third assumption is at best a half-truth. In the 17th century, the spread of education and literacy among lay people gave their learning an increasing influence over European culture, and so helped destroy the Church's earlier monopoly in science and scholarship. In many countries, it effectively drove the ecclesiastical culture away from the center of the national scene. But this change was no novelty. Already, by 1600, printed books had been available for over a century. Any suggestion that modern *literature*—in contrast to modern science or philosophy—was significantly influential only after 1600 will not bear examination. In this respect, Galileo and Descartes were late products of changes that were already well under way in Western Europe by 1520, and in Italy a good time before. The cultural world of the 1630s, embodied in men like Blaise Pascal and Jean Racine, John Donne and Thomas Browne, had its distinctive character. But, when we place that mid-17th-century culture beside that of the 16th-century humanists—such writers as Desiderius Erasmus or François Rabelais, William Shakespeare, Michel de Montaigne, or Francis Bacon—we can scarcely go on arguing that the lay culture of Modernity was a product of the 17th century alone.

Printing opened the classical tradition of learning to lay readers, and so was an important source of Modernity. But its fruits began long before Protestants and Catholics reached their later hostility, and the acrimony of the Council of Trent overlaid and distracted attention from the less polemical concerns of the 16th century. If anything, the transition from the 1500s to the 1600s (from *Pantagruel* to *Pilgrim's Progress,* from the *Essais* of Montaigne to Descartes' *Meditations,* and from Shakespeare to Racine) saw a narrowing in the focus of preoccupations, and a closing in of intellectual horizons, not least the "horizon of expectations." As late as the first years of the 17th century, Francis Bacon looked forward to a future for humanity whose time-scale had no clear bounds. Forty years later, serious thinkers in England shared the belief of the Commonwealth worthies, that God's World was in its last days and "the End of the World" was literally "at hand"—to be completed by an Apocalypse, probably in or around the

year 1657. When Andrew Marvell wrote, at least half in fun, in his *Ode to his Coy Mistress,*

> Had we but World enough and Time.
> This coyness, Lady, were no crime ...
> But at my back I always hear
> Time's wingèd chariot hurrying near,

his readers understood all his allusions to "the Conversion of the Jews" and the rest as echoes of the fashionable concern with the prophecies in the *Book of Revelations.*

In addition to reconsidering the historical assumptions underlying the received view, which depicted the 17th century as a time when the conditions of work in the sciences strikingly improved, we also need to look again at the deeper belief that 17th-century science and philosophy developed an original concern for rationality and the claims of Reason. This belief is misleading in two ways. Rather than expanding the scope for rational or reasonable debate, 17th-century scientists narrowed it. To Aristotle, both Theory and Practice were open to rational analysis, in ways that differed from one field of study to another. He recognized that the kinds of argument relevant to different issues depend on the nature of those issues, and differ in degrees of formality or certainty: what is "reasonable" in clinical medicine is judged in different terms from what is "logical" in geometrical theory. Seventeenth-century philosophers and scientists, by contrast, followed the example of Plato. They limited "rationality" to theoretical arguments that achieve a quasi-geometrical certainty or necessity: for them, theoretical physics was thus a field for rational study and debate, in a way that ethics and law were not. Instead of pursuing a concern with "reasonable" procedures of all kinds, Descartes and his successors hoped eventually to bring all subjects into the ambit of some formal theory: as a result, being impressed only by formally valid demonstrations, they ended by changing the very language of Reason—notably, key words like "reason", "rational", and "rationality"—in subtle but influential ways.

Nor were the founders of modern science theologically lukewarm or even agnostic—let alone atheist. Isaac Newton found it gratifying that his physics could "work with considering men for belief in a Deity." But he did so, not just because he put a fanciful interpretation on his work, but because one goal of his intellectual project was to justify his Arian views on theology: i.e., his "Arianism," as had been taught by Arius, the major opponent of Athanasius, who made the doctrine of the Trinity orthodox at the Council of Nicaea in the 4th century A.D. In this, he was by no means

unusual among 17th-century scientists. Robert Boyle, too, liked to think of his scientific work as serving a pious purpose, by demonstrating God's Action in Nature (this made him, as he said, a "Christian virtuoso"), while Gottfried Wilhelm Leibniz placed theological constraints on the patterns of explanation within physics quite as stringent as any that a medieval theologian might have demanded.

To hint at a point that will be of importance to us later: one aim of 17th-century philosophers was to frame all their questions in terms that rendered them ***independent of context;*** while our own procedure will be the opposite—to ***recontextualize*** the questions these philosophers took most pride in decontextualizing. The view that modern science relied from the very start on rational arguments, divorced from all questions of metaphysics or theology, again assumed that the tests of "rationality" carry over from one context or situation to another, just as they stand: i.e., that we can know without further examination what arguments are rational in any field, or at any time, by reapplying those that are familiar in our own experience. Here, by contrast, instead of assuming that we know in advance what questions 16th- or 17th-century writers saw as "rational" at the time, or what kinds of arguments carried weight with them then, we shall need evidence of what was *in fact* at stake in their inquiries.

Our examination of the standard account of Modernity began with a review of its underlying historical and philosophical assumptions, many of which, we hinted, were exaggerated, or even downright false. In the light of this review, where does that received view stand? Clearly, it is time to give up any assumption that the 17th century was a time—the first time—when lay scholars in Europe were prosperous, comfortable, and free enough from ecclesiastical pressure to have original ideas; and it is also time to reconstruct our account of the transition from the medieval to the modern world on a more realistic basis. There must be some better way to draw the line between these two periods, and so avoid the confusions built into our present conception of Modernity. One item on our agenda is thus to outline a revised narrative that can avoid this confusion, and so supersede the standard account.

But that is only one of two complementary tasks. Since the 1950s, when Roland Mousnier wrote about the "general crisis" of the early 17th century, it should be obvious that Galileo and Descartes did not work in prosperous or comfortable times. Even in the 1920s or '30s, however, enough was known to show (if people cared to ask) that the standard account did not hold water. The statistics of recession and depression in the years after

1618 were investigated and published in detail only in the last twenty years, but no writer of the 1930s could plead ignorance of the trial of Galileo, the Thirty Years' War, or the Renaissance Humanism of, for instance, Erasmus and Rabelais, Montaigne, and Shakespeare. The time has therefore come for us to ask why the twin myths of "rational" Modernity and "modern" Rationality, which continue to carry conviction for many people even in our own day, won such an eager response among philosophers and historians of science after 1920. Like any historical tradition, the standard account of Modernity is the narrative of a past episode *reflected in* a more recent mirror: as such, it can be a source of insight both about the episode itself, and about the writers who held up this particular retrospective mirror.

Both sides of that relation claim our attention here. If we are to reach a balanced assessment of the claims of Modernity, we must keep these two tasks in proportion. On the one hand, we can justly criticize 20th-century assumptions about Modernity, only if we take more seriously the actual historical facts about the origins of the modern period. On the other hand, we can pose our historical questions about the period more exactly only if we make allowance for the special perspectives—even, the distortions—that were imposed on the received view by the faulty historical and philosophical assumptions looked at in this first review. As we learn to correct our historical account of Modernity, we may keep at least half an eye on our own historiographical mirror, and so come to understand better the nature of its special perspectives. Conversely, as we set out to eliminate the distortions from that mirror, we may keep in mind whatever discoveries come to light along the way, to show in just what contexts and circumstances the features typical of "modern" life or thought, society or culture, actually made their first appearance in the history of Western Europe and North America.

The Modernity of the Renaissance

The first step in developing our revised narrative of the origins of Modernity must be to return and look again at the Renaissance. As a historical period, the Renaissance gives tidy-minded chronologists some trouble. It saw the first seeds of many "modern" developments, but made few radical changes in the political and institutional forms of "medieval" Europe, and certainly did not abandon them. In the familiar tripartite chronology of European history—ancient, medieval, and modern—the Renaissance falls somewhere on the boundary between the second and third divisions. As a result, historians who rely on that traditional division must treat it either