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Science, Tradition, and the Science of Tradition

The Argument

Science consists in progress by innovation. Scientists, however, are committed to all kinds of traditions that persist or recur in society regardless of intellectual and institutional changes. Merton’s thesis about the origins of the scientific revolution in seventeenth-century England offers a sociohistorical confirmation of this revisionist view: the emergence of a highly rational scientific method out of the religious-ethical sentiments of the English Puritans implies that scientific knowledge does indeed grow out of – and not really against – customary modes of thought.

In tracing the intellectual origins of this view back to the religious controversy between Protestants and Catholics, the essay demonstrates that the essential conflict between them with regard to natural science stemmed from their antagonistic conceptions of tradition and its function in the production of genuine knowledge – of religious as well as of natural affairs. Whereas the Protestants believed only in those truths that are immediately revealed by God to each man through his reason, the Catholics adhered to truths that are related to men or “made” by them through culture and history.

Tradition in Science:
Some Preliminary Remarks on the Essential Tension

In one of his early and most influential essays on the culture of modern science, Thomas Kuhn challenges the “popular stereotype” that “the scientist must be, at least potentially, an innovator” and urges us instead to “recognize the extent to which the basic scientist must also be a firm traditionalist” (Kuhn 1977, 237). Kuhn’s main assertion is that “new theories and, to an increasing extent, novel discoveries in the mature sciences are not born de novo. On the contrary, they emerge from old theories and within a matrix of old beliefs about the phenomena that the world does and does not contain” (ibid., 234). The integration of tradition – the common beliefs and practices of a community, habitually accepted by the student as the system of
"normal science" – with innovation, which in its true sense requires the refutation or at least readjustment of that system according to individual rational decisions, poses, according to Kuhn, a serious ethical dilemma for the scientist: "The scientist requires a thoroughgoing commitment to the tradition with which, if he is fully successful, he will break." This ambivalent commitment to both tradition and innovation constitutes the "essential tension in scientific research" (ibid., 235).

Kuhn's ideas about the function of traditional reasoning in the constitution of modern science have since been widely discussed by theorists of science. More important, they have been adopted by leading practitioners of science – that is, by innovators who have come to recognize the inevitability of traditional reasoning in their own scientific work.

On the whole, however, such candid admissions have yet to meet with widespread agreement among historians and philosophers of science. The common view of what science is all about is still strongly antitraditional.

It is primarily against this hardened liberal-positivist conception of science that Kuhn forwards his revisionist arguments. He seeks to overcome the convenient conceptual dichotomy between the rational and the traditional in science by showing (a) that rationalism itself must be seen as a profoundly traditional mode of reasoning, developed by and typical of our civilization, and (b) that traditionality, while not being rational in the common positivistic sense of the term, is nonetheless reasonable in its idiom of knowledge.

Kuhn's famous and controversial notion of "paradigm" bears this out most poignantly: a scientific paradigm in his account, embodies the sense that scientific activities are not guided by rational criteria, but are primarily defined and controlled by deeply rooted communal rules that have proven their ability to order the contingent experience of a social constituency. Kuhn shows that scientific activity is very much like other traditional practices in that it too consists in the reverence for a great foundational act that took place in the past (an important discovery, a successful experiment, etc.) and must be continually repeated (Kuhn [1962] 1970, 174-98).

Scientific paradigms differ, however, from other traditions because they are normally traditions of a limited life span; and yet, like longer (religious or ethnic)

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1 See the various "appraisals and applications" in Gutting 1980. For earlier and alternative treatments of the problem of tradition in science, see Popper [1948] 1962, 120-35; Polanyi 1946; and Ziman 1968. There are interesting affinities between Kuhn's depiction of the scientist as a "firm traditionalist" and T. S. Eliot's attack on the notion of "personality" in Tradition and the Individual Talent, where he argues that literary originality is not opposed to tradition but in fact rooted in it (1934, 14).

2 Thus, for example, Werner Heisenberg says that "any scientific work can only be defined by formulating the questions that we want to answer. But in order to formulate the questions we need concepts by which we hope to get hold of the phenomena. These concepts are usually taken from the past history of science; they suggest a possible picture of the phenomena. But if we are going to enter into a new realm of phenomena, these concepts may act as a collection of prejudices, which hamper progress rather than foster it. Even then we have to use concepts, and we can't help falling back on those given to us by tradition . . . Therefore, one may say that in a state of science where fundamental concepts are to be changed, tradition is both the condition for progress and a hindrance" (Heisenberg 1975, 219, 234). For similar views see Oppenheimer 1959. On Albert Einstein's consciousness of his Jewish tradition and its impact on his work, see the perceptive essays of Feuer 1971 and Elkana 1982.
traditions, they too persist because they are self-validating – they produce a world in which they are true. It is partly for this reason that scientific theories, though based on more open and self-critical regulations and hence more susceptible to modifications, are so hard to change; according to Kuhn, they are likely to collapse altogether. In any case, the scientific community, once it has failed to hold to the old paradigmatic tradition, immediately coheres around the new theory and turns it into a new tradition. In the dynamics of change Kuhn sees no escape from the “traditional” because, like all our cultural endeavors, science too is primarily a deeply conservative mechanism, a system of rules devised by men in order to control and determine their new and unbearably contingent experience.³

Kuhn’s rehabilitation of the traditional in scientific culture is indicative of his wider and more ambitious project – to redefine the very nature of scientific knowledge. By pointing out the nonlogical and communal factors that make it up, he aims to undermine the central belief sustaining the entire liberal-positivist ideology of science – namely (to use Barry Barnes’ phrase), its “myth of rationalism” (Barnes 1985, 85). According to that ideology, scientific knowledge and progress flow from free-thinking individuals who, as opposed to the traditionalists, observe the phenomena objectively, seemingly unconstrained by any preestablished conceptions, or prejudices, and can thus reason securely from the raw sense-data of their experience to correct theories. Against this liberal overestimation of reason and the individual, Kuhn contends that “though science is practiced by individuals, scientific knowledge is intrinsically a group product and that neither its peculiar efficacy nor the manner in which it develops will be understood without reference to the special nature of the groups that produce it” (Kuhn 1977, xx). He emphasizes the fact that scientific research, like any other process by which we acquire knowledge, is always conducted according to certain common “rules of the game” (which he equates with “established viewpoints” or “preconceptions”), which are in fact traditional beliefs and as such can neither be fully determined, nor effectively curbed, by purely logical or empirical considerations. Hence the assignment of a “role for history”: namely, to trace the “formation” of science out of – and not really against – such communal beliefs.

When Kuhn urged the historians of science to turn their attention from the singular achievements of great scientists to the social conditions and group psychology which prevailed in their times, he knew, of course, that this methodological shift had already been adopted, and much advanced, by Robert K. Merton (Kuhn 1968, 79). Merton’s overall contribution to the history and sociology of science is well known and need not be discussed here. My concern in this paper is only to comment briefly on his treatment of tradition in science.

³ As E. A. Burtt puts it: “Possibly the world of external facts is much more fertile and plastic than we have ventured to suppose; it may be that all these cosmologies and many more analyses and classifications are genuine ways of arranging what nature offers to our understanding, and that the main condition determining our selection between them is something in us rather than something in the external world” (1924, 305).
Already in his earliest studies in the historical sociology of science, Merton sets out to expose in concrete sociological terms and historical examples how scientific rationalism arose out of – and still very much consists in – utterly a-rational traditions of thought (Merton 1936, 894–904). He does it by shifting the focus of interest from the defective rationality of traditional reasoning to its effective latent functionality or practical reasonableness in regulating heterogeneous social life. As we shall see, his new conception of the reasonableness of tradition is a key argument in his lifelong battle against the vogue of positivism in all the spheres of social research.

Much like the positivists, but ultimately against them, Merton too takes tradition to be those beliefs and practices that persist or recur in society regardless of intellectual and institutional changes. His working hypothesis is that whatever has become traditional in society must have proved beneficial to its common welfare. Inasmuch as tradition is an unconscious and inertial process by which society disseminates knowledge, it is indeed nonlogical; but, he argues, this fact alone does not render this knowledge false, as the positivists would have it. Rather, traditions have a logic of their own, a nonrationalistic one. The practical wisdom they store serves “latent functions” in the regulation of social life (Merton 1957, 64, 81, 129). These functions are neither recognized nor intended by their practitioners, who merely perform their customary acts in the “inertia of tradition.” But they must be recognized by the sociologist, whose duty is to show how these apparently irrational modes of thought become reasonable when viewed in the right social context. Whereas the positivists see all traditional beliefs as inimical to the production and progress of genuine scientific knowledge, Merton attempts to show that in practice scientific method is deeply rooted in such beliefs.

This heuristic principle had far-reaching implications for the scholarship of modern science, as it enabled Merton to expose the a-rational mechanism that produced the rational methods of science, and thereby to undermine the central rationalistic argument of the positivists. For the latter asserted that modern science is the creation of a new kind of rationalism, sometimes referred to as functional or instrumental reasoning (Zwecksrationalität). According to this positivistic assertion, the makers of modern science were successful in their enterprise because they were thoroughly rational, and they were rational because, and inasmuch as, they worked in a simple motives-means-ends framework: unlike their predecessors in antiquity and in the Renaissance or those adversaries who were still committed to other considerations – ontological, theological, aesthetic, and the like – the new-breed scientists presumably were motivated solely by realistic aims which they then pursued by the most suitable means and according to strict logical and critical standards.

Against this positivistic theory Merton contends that although the makers of modern science were technically rational in their ability to adapt means to ends, the psychological motives for acting in that way were largely a-rational. His theory is best exemplified in his classic analysis of the English scientific revolution where, he claims, a highly rational scientific method evolved out of the religious-ethical sentiments of the English Puritans. In this study he seeks to show that the English
scientists espoused the canons of modern science because they were primarily committed to certain moral principles of belief rather than to any logical principles of cognition. Modern science, in his account, was thus occasioned, but not caused, by religion; it consists indeed in its rigorous rational method, and yet this method itself stemmed from, and is still inspired by, a-rational motivations. Thus, for example, while it is true that the eschatological beliefs embedded in the Christian millenarian tradition are, in themselves, nonrational by strictly technical and cognitive standards, yet, for the historian-sociologist of modern science, they are significant because they lent impetus to certain rational practices—for example, the attempts to calculate events in probabilistic terms. Such and similar nonlogical traditions were crucial for the making of modern scientific culture, as they still are for its understanding.

We can now see, then, that both Merton and Kuhn establish their sociohistorical revision of scientific positivism on a new theory or rehabilitation of tradition as a genuine medium of knowledge. In their rejection of the claims and tactics of the aggressive progressivists in their field, both theorists assent to revisionist views, such that are commonly associated with political conservatism. And indeed both can be seen as conservative theorists of science if in that term one understands an approach to human affairs that, as Michael Oakeshott phrased it, gives priority to “the strongest, and not merely the highest, human impulses” (1947–48, 355). Furthermore, their attempt to reaffirm the traditional over and against the rational in science is redolent of Oakeshott’s similar attempt in politics. Because just as they redefine and establish scientific knowledge as a primarily practical skill, one based on socially grounded customs rather than on abstract reason (or, in Kuhn’s idiom, on conventional paradigms rather than on purportedly essential rules that might be abstracted from them), so does Oakeshott redefine the a-rational nature of political knowledge. In a famous essay Oakeshott argues against the liberal ideal of “rationalism in politics” because it projects a kind of political knowledge that is both much too theoretical and merely technical, knowledge that “is susceptible of formulation in

4 This, in my view, is the essential thematic argument of the sociohistorical investigations in the celebrated, but much contested, chapters 4, 5 and 6 of Merton’s thesis of 1936—as Merton himself (1970, xviii–xxix) affirms. This argument has been succinctly formulated by Patel (1975): “[Merton] does not consider Protestantism as the cause of the growth of science in seventeenth-century England. His contention is modest. He considers that the growth of science at that particular time and place was the latent consequence of Protestantism. Thus, religion is neither a sufficient nor a necessary condition for the growth of science” (p. 71). See also the important methodological comments of Abraham 1983.

5 This theme, only intimated by Merton, has since been fully worked out by Webster (1975, 27–31, 484ff.).

6 The revival of methodological—and ideological—revisionism in modern historiography has not been as effective and successful in the historiography of science as in other fields. Whereas Pocock (1962) and Skinner (1969) have completely changed the historiography of political thought, Frances Yates’ call to reorient the course of the historiography of science has gone largely unnoticed. Her attempt to trace the intellectual origins of the scientific revolution of the seventeenth century back to the Renaissance and medieval traditions—“I would thus urge that the history of science in this period, instead of being read solely forwards for its premonitions of what was to come, should also be read backwards, seeking its connections with what had gone before” (1967, 270)—has met with severe criticism and now seems to have withered away.
rules, principles, directions, and maxims” and may therefore be learned and applied from a book. Oakeshott suggests instead that politics is a practical and essentially traditional knowledge that “can neither be taught nor learned, but only imparted” to the student by his master or by social institutions, by way of “initiation into the moral and intellectual habits and achievements of his society.” It involves “an entry into the partnership between past and present, a sharing of concrete knowledge,” the knowledge produced and preserved by tradition (Oakeshott 1962, 10, 32). The image of science espoused by both Merton and Kuhn is thus very much like Oakeshott’s image of politics: both science and politics are seen as subject to the authority of concrete social traditions, rather than to that of abstract individual reason.

The remarks above make clear, I think, to what extent the debate about tradition in science is motivated and determined by the ideological convictions of the participants. What seems a rather marginal topic in the theory of science – whether and to what extent modern science is traditional – has wider significance and implications than its title suggests. And it is only when we grasp these wider dimensions of the dispute that we can fully comprehend why, in Kuhn’s view, this particular problem poses such a challenge to both practitioners and theorists of modern science; why, in his words, it constitutes “the essential tension in scientific research.” The issue here is not only the legitimacy of traditional (i.e., nonrational) beliefs in scientific practice, but rather the legitimacy of modern scientific knowledge itself – namely, whether it is, or can ever be, as fully rational as it claims to be. If we follow Merton and Kuhn to the ultimate conclusion of their investigations, then we must answer this question in the negative: modern science, in their account, is deeply bound by the prejudices of the past, and will always be, because, ultimately, scientists are human, all-too-human, beings; like all human beings they are wary of disorder in their social world; they need regularities to which they can adjust themselves; and they find these in the rites of communal continuity with the past.7

The “essential tension,” as Kuhn presents it, is a most constructive notion; yet I find it too limited in scope. In Kuhn’s version it applies only to the personal conflict of the individual scientist as he or she finds himself or herself committed to two equally strong, but essentially contradictory, ethical codes – the social (maintaining stability by tradition) and the professional (making progress by innovation). However, in view of the more general ideological commitments that underlie this personal psychological conflict, I think we can extend the applicative range of this “essential tension” to whole social groups in history. We can, in other words, present the general problem of tradition as we understand it – namely, the debate about the validity of customary modes of thought and action in the age of individual rationalism.

7 In his classic study of the social and cultural commitments of scientists in the past, Gerald Holton notes, as a general rule, that these commitments are “neither directly evolved from, nor resolvable into, objective observation on the one hand, or logical, mathematical, and other formal analytical ratiocination on the other hand” (1973, 57). They are what Collingwood has elsewhere defined as “absolute presuppositions” – the primary assumptions about reality that every community construes in order to “bridge over the gap of ignorance,” and thus serve as the points of departure for all further observations and interpretations of the phenomena.
– as the problem that constitutes the “essential tension” in the history of modern culture.

My main aim in this paper is to trace the intellectual origins of this debate. As I shall try to show, the problem of tradition in this distinctly modern vogue first became topical in the religious warfare between Protestants and Catholics over the legitimacy of merely traditional – that is, nonscriptural – beliefs and rites in Christian doctrine. I shall try to show how in the course of this warfare the two parties developed opposing ideals of religious knowledge that were subsequently applied to scientific knowledge. My main argument will be that the essential conflict between Protestants and Catholics with regard to natural science stemmed from their antagonistic conceptions of tradition and its function in the production of genuine knowledge – religious as well as scientific.

Very schematically put, it can be argued that for the Protestants, religious knowledge in its ideal form had to be absolutely original and pure. Since Christian doctrine was revealed by its Creator to all in a most perspicuous form, this knowledge could, in principle, be directly and immediately recovered by every person solely from its concrete original matter – the biblical text. Hence, the Protestant polemicists rejected later additions, interpretations, and other modifications of this pure text as being merely man-made authorities rather than God-given truths. For the Catholics, on the other hand, religious knowledge was only partly revealed by God (and even this “through a glass darkly”) and mostly related by men – mainly by his apostles, saints, and appointed church ministers – in history, as they sought to accommodate his fixed plan to the changing human conditions by means of customary rules, decrees, rites, and similar local traditions. Religious truth, as they perceived it, was not so much “given” as “made”; therefore it could not be induced directly from its perfect natural origin but had to be deduced from its copious historical traditions.

These distinctions may not appear relevant to the issue under discussion, but I think they are crucial to it and indeed may change some of our conceptions about the Protestant origins of modern science. What I would like to suggest is that while it may be true to maintain, as Merton and his followers do, that modern scientific culture developed from essentially Protestant conceptions of rationality, individuality, originality, utility, and so forth, perhaps it would be more accurate to say that this is true only for one view of science – that of the liberal-positivist persuasion; if, however, we adopt the alternative, so-called conservative, view of science, like the one held by Kuhn – according to which science is primarily a collective, mostly anonymous, and always hereditary activity carried out according to preestablished cultural rules and practices – then we could indeed say that this latter version of science owes less to Protestant ideology and more to the distinctly Catholic ideas about the traditional make-up of all our cultural creations.8

8 These schematic formulations about the validity of the “Catholic” Weltanschauung are generally compatible with the well-known thesis of Pierre Duhem (1969) about the emergence of modern science out of the medieval-Catholic tradition of interpretation (or hypothetical representation) of the phenomena. Duhem himself has pointed out this historical-theoretical connection, and committed himself to its
"Perfect Originals" Versus "Corrupt Copies": The Protestant Refutation of Tradition

In a famous passage in the History of the Royal Society, Thomas Sprat contends that the Church of England will not only be safe amidst the consequences of a Rational Age, but amidst all the improvements of Knowledge, and the subversion of old Opinions about Nature, and introduction of new ways of Reasoning thereon. This will be evident, when we behold the agreement that is between the present Design of the Royal Society, and that of our Church in its beginning. They both may lay equal claim to the word Reformation; the one having compass’d it in Religion, the other purporting it in Philosophy. They both have taken a like course to bring this about; each of them passing by the corrupt Copies, and referring themselves to the perfect Originals for their instruction; the one to the Scripture, the other to the large Volume of the Creatures. They are both unjustly accus’d by their enemies of the same crimes, of having forsaken the Ancient Traditions, and ventur’d on Novelties. They both suppose alike, that their Ancestors might err; and yet retain a sufficient reverence for them. . . . Such is the Harmony between their Interests and Tempers. (Sprat 1667, 370-71)

Sprat’s words still reverberate in the vast literature on the scientific revolution of the seventeenth century. As I shall try to show, they also reveal much about the Protestant conception of tradition and the nature of knowledge.

Sprat’s main assertion, that the activists in both the religious and scientific movements of the age were inspired by the same reformative ideal of personal judgment (libre examen), has been much discussed and largely accepted by modern scholars (Jones [1936] 1965; Merton [1938] 1970, 136; Mason 1953, 66; Westfall 1958, 219; Dillenberger 1960, 130). It is now commonly agreed that the antclerical polemics of the reformists was crucial for the emergence of new modes of inquiry in all spheres of life because it undermined not only Catholic scholasticism but also its concomitant ideologies – Aristotelian ontologism, Roman legalism, historical holism, and the like (Hill 1965, 113). Yet, the question whether this religious radicalism motivated and determined the development of modern science is still very much contested. Sprat’s words concerning “the Harmony between [the] Interests and Tempers” of the religious and the scientific revolutionaries strongly imply social and psychological affinity, but the precise nature of that harmony is rather ambiguous.

On the whole, most modern scholars tend to agree with Sprat that the study of nature in England was not unique to any particular Christian creed, but rather was part of a larger intellectual revolution (Hooykaas 1956; Rabb 1962; Kemsley 1968; Morgan 1979). They commonly attribute the rise of modern science to the “revolutionary spirit” of the age, to a new kind of experience – an immediate and personal one – and to a sense of freedom that were thus akin to, but not caused by, the religious hermeneutical position by aligning himself with Cardinal Bellarmine’s side in the latter’s campaign against Galileo and other positivists of the day.
ideas of the Reformation. As T. R. Rabb has argued, the rise of modern science "was not due to any inherent Puritan tendency, but rather to the revolutionary's natural adoption of the convenient, ready-made Baconian philosophy" (Rabb 1962, 64). Like Sprat, then, modern scholars tend to see the scientific revolution as a rather heterogeneous movement of individuals primarily motivated and united by a new philosophical world view – the Baconian philosophy – and its central ideal of knowledge, and not, as the Weber-Merton thesis would have it, by ethical-religious sentiments. Yet such views, which tacitly adhere to the liberal-positivist conviction about the primacy of a new kind of reason in the modern scientific culture, fail to see the connection between older religious creeds and the new ideal of knowledge. Even a rough scheme of this new ideal would suffice, I think, to point out its distinctly "Protestant" characteristics.

The new ideal of knowledge consisted in what might be termed individual rationalism. Its basic assumption was that the world consists of facts, and knowledge of the world in ideas and propositions representing these facts. The best way to gain knowledge is to let the world act causally on our senses – that is, to experience its objects immediately and methodically. The principle of knowledge as a controlled personal experience was established by Descartes in his *Rules for the Direction of the Mind*. According to Descartes, however, real knowledge or science must be not only evident – by which he meant there must be a congruence between ideas in the mind and the objects of reality – but also certain – that is, it must be critically tested and demonstrated by the individual by means of a reliable method. The important point for our concern is that the new certainty was based on the personal experience and reasoning of the individual, not on traditional authorities.9 The introduction of experimental and inductive methods seemed to ensure, contra the skeptics, that the new scientist would indeed be freed from beliefs presented by authority and rely on his own observation, senses, and powers of ratiocination. Reason, the possession of every human being, is all that is needed to derive general knowledge from the personal experience of objective reality.

Now this rationalist conception of knowledge was at the heart of the Protestants' polemics against the Catholic traditionalist conception of knowledge: tradition, they argued, could not be a genuine source of knowledge, because real knowledge is gained by an immediate personal experience, not through historical collective experience. Of course, the early Protestants did not conceive of their task in such philosophical terms; their attack on tradition stemmed from a general aversion to the social policy of the Church and to the religious traditions that sustained it.10 Never-

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9 Perhaps because of his loyalty to Catholicism, Descartes himself was wary of the possible subversive consequences of his method in other fields: he warned against its abuse in nonscientific (i.e., religious) disputations. But as Butterfield (1951, 127–78) has shown, the Cartesian method of criticism was transferred to, and proved particularly effective in, the religious field.

10 Tavard (1959) argues that the concept "tradition" acquired its pejorative meanings only in the later Middle Ages, as the Church became the object of social criticism, and that previously the term had been understood differently and had much more positive connotations – connotations that were roughly
theless, I would like to argue that their historical and theological arguments against tradition were conceived on precisely such epistemological premises.11

From the outset the Protestants rejected as heretical two fundamental Catholic principles: (a) that the Christian doctrine was only partly revealed in the biblical text; and (b) that it could (and did) develop in history by means of oral and practical traditions. The Protestants based their entire ideology on the principle of individualism, which opposed not only the affirmations of the Christian community of tradition but any divine revelation not made directly to the individual reason. The Calvinists, in particular, denounced the notion of tradition as too all-embracing and thus incompatible with the principle of personal responsibility: they held that each man had to accept the responsibility for finding the truth for himself and, more generally, that man must be freed from human authority in order to become more submissive to divine authority.

The most thorough theological debate on the problem of tradition took place at the Council of Trent, but it failed to reach any satisfactory conclusion (Hull, 1929). The pro-Catholic resolution, which stated that “this truth of the Bible is contained partly in written books, partly in unwritten traditions,” was unacceptable to the faithful Protestants, especially the followers of Luther, who continued to rely on the Scriptures alone: *solum verbum est vehiculum gratiae* (the word only is the way to grace), declared Luther, thereby identifying the grace of God solely with the word of Scripture. Like their master, most early Protestants tended to push the principle of *sola scriptura* to its limits. They dismissed the Catholic attempt to extend revelation to secondary and nonverbal means – to unwritten traditions – as a cunning device of the church magistrates to gain control over the minds of simple believers. As one critical observer of the Council of Trent commented:

> We are now living in the last times, concerning the dreadful dangers of which, especially as they pertain to doctrine and faith, Christ and the apostles uttered the gloomiest of prophecies. Therefore it must be a reprobate mind which can be persuaded in these dangerous times to forsake the clear light of the Scripture and

synonymous with the Hellenistic doctrine of *paideia*. Cf. Louth 1983, 73–95 for a modern defense of this Catholic sense of tradition. Heiko Oberman’s historical reconstruction (1986, 269–96) is a masterful meditative presentation of the controversy from the Protestant perspective. Arguing that the Reformers were not opposed to tradition as such but simply held to an alternative, much less authoritative, concept of tradition, Oberman sums up the whole controversy as “a clash between two concepts of tradition.”

11 In his pioneering study on the problem of knowledge in the seventeenth century, van Leeuwen convincingly argues that “the solution to the problem of certainty arose from a controversy between Catholics and Protestants concerning what beliefs are necessary for salvation. Each side claimed its doctrines to be the necessary ones, and the question then arose by what criterion or rule one could decide with certainty which doctrines were necessary” (1963, xiv). This view has been reiterated, and much advanced, by Popkin (1979, 15, 84, and passim), and by Shapiro (1983). In her important study on the development of new epistemological criteria of knowledge, Shapiro traces the origins of the modern (“Latitudinarian”) notion of knowledge as “probability” to Erasmus’ skeptical rebuttal of Luther’s belief in the possibility of attaining absolute “certainty” from the Scriptures (ibid., 75–76).
to entrust his faith to the darkness of uncertain traditions. (Chemnitz [1565] 1971, 2:277)

To counter the Catholic claim about the infallibility of oral traditions, Protestant theologians devised a new heuristic method of scriptural rationalism: whereas Catholic apologetics maintained that religious truth had been revealed gradually and mysteriously, principally through saints and magistrates, over a thousand years of ecclesiastical development, the Protestant polemicists insisted on the immediacy and perspicuity of this truth, which in principle allowed every man to discern it in the Scriptures, simply by means of his natural rational capacities.

The main problem of the Protestants, however, was to overcome the fundamental Catholic argument that Scripture is not always perfectly transparent, and that by itself it does not furnish us with the full meaning of the text. While they believed in the efficacy of human reason to deal even with the most problematic passages in the Bible, many Protestants in later generations found the *sola scriptura* principle too limiting; they wished to extend the effective range of the Christian doctrine beyond the historical-theological connotations of the Scriptural words. They did it in two basic patterns of interpretation – first, during the seventeenth century especially, *inwardly*, toward a more spiritual or puritan rendering of reality (the various mystical sects and enthusiasts) as well as of Scripture, leading them, as Louis Bouyer has put it, “to neglect and even formally to exclude the human element from Scripture” (Bouyer 1956, 173); and then, during and specially near the end of the eighteenth century, *outwardly*, toward more human and historical interpretations, when biblical scholars in Germany immersed themselves in the Hebraic era of the early Church, especially in the activities and writings of the apostles (Frei 1974, 158–68, 222–35). Inasmuch as they sought to remain in union with the apostles, these liberal Protestants too seemed to adhere to tradition; but in fact their aims and methods were different from those of the Catholics because, as Cognar has observed, whereas the Catholics sought “the fulness of the apostolic heritage,” the Protestants sought only “the purity of the apostolic witness” (Cognar 1966, 152). As in most other disputes in this long warfare, the dispute about the apostolic tradition was in fact a dispute about the legitimacy of the Church itself: whereas the Catholic faith in the Church was faith in a real historical society, which united the past and the present and all religious groups and sects in one living tradition, the Protestants saw the Church as being merely a spiritual union of Christians, the sole duty of which was to be a custodian of the sacred Scripture, not an arbiter of Christian morality.

As we can see from these brief remarks, the dispute about the function of tradition in Christianity hinged on a crucial disagreement with regard to the constitution of religious knowledge itself. The Protestant attempt to recover the pure timeless essence of Christianity by stripping it of its later, merely traditional, elements – that is, the Hellenic, patristic, medieval, and all other accretions of a thousand years of doctrinal development – was, in the final analysis, an attempt to separate religion from history. Whether it was an attempt to reduce Christianity to its Hebraic
prophetic and apocalyptic elements, as in many millenarian sects, or to its clear philosophical principles, as in Socinianism, the message was clear: the Christian doctrine was pure and complete already in its original primitive form. Any historical change in it was therefore seen as its degeneration and corruption.

This faith in the absolute authority of the original act of creation – be it in religious or in natural affairs – permeated the Protestant movement in all its guises; and it is precisely this faith, or “myth of the origin,” that infiltrates Sprat’s characterization of the Reformers in religion and science alike as “passing by the corrupt Copies, and referring themselves to the perfect Originals for their instruction.” We may paraphrase Sprat’s idioms and say that whereas Protestantism consists in an attempt to know religious and natural phenomena by restoring them to their “perfect Originals” – that is, to the forms in which they were given by divine revelation or natural creation – Catholicism resigns itself to their “corrupt Copies” – that is, it attempts to glean knowledge from the forms in which they have been made up by human modifications in history, as inevitably processed by tradition.

This “myth of the origin” exercised a strong fascination on many of the leading Protestant men of science in the seventeenth century. The belief that God had once revealed the truth of natural reality to humans, or at least made it accessible to them as long as their minds were innocent and therefore still capable of receiving immediate impressions without prejudice, was exquisitely blended with the new positivistic ideal of knowledge as correct representation of external reality (Rorty 1979, 45ff.). This belief was shared by three of the most prominent figures in the scientific revolution: Bacon, Boyle, and Newton. Much as they differed from one another in their scientific theories and practices, all three sought to mold a new kind of knowledge which would retrieve or emulate that knowledge which they regarded as the most original one – be it Adamic, Phoenician, pre-Socratic, Hermetic, or other. Knowledge, in short, had to be restored to what it once was – merely and purely given, not made up. In the case of Newton, this notion led him so far as to suppose that some of his own discoveries had already been known to philosophers in antiquity; thus, for example, he thought that the ancients’ concept of “harmony” referred in fact to “gravity”; he was convinced that the logical principles of his natural philosophy, like the moral lessons of the Scriptures, “will appear to us by the Light of Nature” if we get rid of all the theological and metaphysical interpretations imposed on them by tradition (Newton 1931, 405; cf. McGuire and Rattansi 1966).

Bacon’s notion that real knowledge required a reunion “with things in themselves in a chaste, holy, and legal wedlock” perfectly matches this ideal (Bacon 1858–74, 4:66). It prompted him to present his great reform of knowledge in reflexive terms, as a restoration of original knowledge. Its end, he says, is “a restitution and reinvesting (in great part) of man to sovereignty and power (for whenssoever he shall be able to call the creatures by their true names he shall again command them) which he had in

12 Bacon 1858–74, 6:695ff.; Boyle 1772, 1:405; Newton 1934, Bk. III, props. iv–ix. Newton’s famous hypotheses non fingo may be seen, according to my interpretation, as the ultimate positivist-Protestant rejection of the hermeneutical-Catholic view of what scientific knowledge is all about.
the first state of creation" (ibid., 6:34). This restorative trend was particularly strong among the Puritans, who combined these beliefs with eschatological visions and expectations (Webster 1975, 27–31). Whether these and other Protestant theorists of science derived their ideas directly from Bacon is still debatable; but there is no doubt that, on the whole, this trend of thought, which reached Newton and beyond, took its inspiration and impetus from Bacon’s work. 13 He neither believed in their efforts to purify religious and moral sentiments nor took part in these efforts, but he may well have taught them how to purify scientific knowledge.

In his admiration for the Adamic and other pristine forms of knowledge — most notably the mythological and pre-Socratic — Bacon expressed the basic Protestant sentiments and ideals. He held to the view that

it was not the pure knowledge of nature and universality, a knowledge by the light [thereof] man did give names onto other creatures in Paradise, as they were brought before him, according unto their properties, which gave the occasion to the Fall; but it was the proud knowledge of good and evil, with an intent in man to give law unto himself and to depend no more on God’s commandments, which was the form of temptation. (Bacon 1858–74, 6:91)

Much as he detested the ideal and all forms of primitivism, and constantly hailed the vast advantages of the moderns over the ancients, Bacon was still fascinated by the latters’ innocence, as it displayed an uninhibited relationship to the things-in-themselves, and sought to retrieve it for modern man (Rossi 1968, chap. 3). His attempt to regain the “wisdom of the ancients” from pagan mythology was based on the conviction that “between the hidden depths of antiquity and the days of tradition and evidence that followed there is drawn a veil, as it were, of fables, which come in and occupy the middle region that separates what has perished from what survives” (Bacon 1858–74, 6:695). And although he was ready to admit that his “reverence for the primitive times” may have carried him too far, he was still willing to believe that

beneath no small number of these fables of the ancient poets there lay from the very beginning a mystery and allegory . . . in some of these fables, as well as in the very frame and texture of the story as in the propriety of the names . . . I find a conformity and connexion with the thing signified, so close and so evident, that one cannot help believing such a signification to have been designed and meditated from the first, and purposely shadowed out. (Ibid., 6:696)

Bacon, of course, knew well that the poetic wisdom of the ancients was incomplete and much inferior to modern science. Nevertheless, he believed that it could still serve as a corrective lesson to our excessively verbal and theoretical reasoning. Bacon makes clear that the mythopoeic and even more so the pre-Socratic approaches to nature were superior to the later philosophical ones: all the more so because their case was still one in which “reality ruled the mind,” whereas later, in Plato’s case,
“ideas ruled reality,” and finally, in Aristotle’s case, “words ruled ideas” (ibid., 3:86). With the latter, original knowledge was completely discarded and lost, as immediate and concrete observation of things was replaced by abstract and merely linguistic musings about them. From then on, Bacon concludes, all attempts to approach natural phenomena directly were hampered by words and theories, or the “Idols of the Market-place... which have crept into the understanding through the alliances of words and names. For men believe that their reason governs words; but it is also true that words react on the understanding; and this is what has rendered philosophy and the sciences sophistical and inactive” (ibid., 4:61). In his famous critique of the notion that truth is born of the “judgment of Time” (since “Time is like a river, which has brought down to us things light and puffed up, while those which are weighty have sunk”), Bacon neatly rules out tradition as a genuine medium of knowledge (ibid., 4:15).

For Bacon, as for Protestant thinkers at large, real knowledge of things consisted in grasping their original forms (“the form of a thing is the very thing itself”), by which he meant their concrete natural properties beyond their abstract human conceptions (Hesse 1968, 127–28). He duly resolved to go back to the things as nature made them before and regardless of what they have become in history, to re-cognize them as they had been known to the ancients in “the hidden depths of antiquity” before “the days of tradition and evidence which followed” corrupted them. Tradition as he understood it began when nature was not observed anymore by individuals, each making it up according to his own personal observation and reason, but rather processed for easy consumption by inventing “confused and ill-defined names... hastily and irregularly derived from realities” and thus creating all kinds of “fictions which owe their origin to false and idle theories.”

Bacon, then, was acutely aware of the historicity of knowledge, and hence of its traditionality. Inasmuch as he analyzed the dynamics of its sociolinguistic composition and historical development, he may well be considered the founder of the modern science of tradition. A central aim of his reform of knowledge was to repair the process of tradition by devising more secure methods of control over the transmission of knowledge in society. And yet, for all his ingenuity in recognizing the nature and problems of traditional knowledge, his efforts to reform it were hampered by his ideal of knowledge, by his epistemological puritanism, which led him to believe that we could gain back the things as they truly are in themselves – in their absolutely pure and original form – regardless of what they have become for us, simply by reaching them, as Gadamer once put it, “behind the back of language.”

And it was this (very Protestant) belief, that “truth is to be sought not in the felicity of any age, which is an unstable thing, but in the light of nature and experience, which is eternal” (Bacon 1854–74, 4:60), that a century later alerted Giambattista Vico to Bacon’s inadequate concept of knowledge. Upon reading Bacon’s treatise On the Wisdom of the Ancients, in which the author claimed to have rediscovered in the ancient fables modern philosophical and scientific truths, Vico remarked that this work was “more ingenious and learned than true” (Vico 1963,
To see what Vico meant by this remark we must first elaborate his alternative (and very Catholic) concept of knowledge. That will be my main concern in the next section.

"The Public Grounds of Truth": The Catholic Vindication of Tradition

Ever since Augustine declared that he "would not even believe the true Scriptures unless moved by the authority of the Catholic church," the problem of traditional authority over personal belief in Christianity has never been safely laid to rest. Over the many centuries of Catholic dominance, church officials made extensive use of this and similar remarks to establish the superiority of their official regulations over the mere individual decisions of reformers. Augustine's words on this topic became particularly important during the Reformation, as both Catholic apologists and Protestant polemicists claimed to have derived their main arguments from him.

Augustine's submission to ecclesiastical authority was rooted in his fundamentally negative view of human nature in general and of the deficiency of human reason in particular. These ideas found their clearest explication in his well-known polemics against Pelagius, the Christian Stoic. In that controversy he sought above all to counter the latter's refutation of the Original Sin. To do so he had to refute the Pelagian philosophical and anthropological theories about the value of the individual and the efficacy of his will and rational capacities to achieve goodness without the help of divine grace. Augustine rejected this early version of individual rationalism as being too favorable to man and therefore harmful to him. Fallen man, he argued, had to protect his hard-won humanity from the intrusions of natural forces, both from outside and from within himself. More than that, he needed constant reminding of his sinful origins and weak constitution. The biblical and ecclesiastical traditions supplied such a reminder. Following these tragic premises, Augustine then inveighed against the Pelagians and other positivists of the day that by affirming what they perceived to be man's true nature and place in the world they loosened his metaphysical moorings and set him adrift. As I shall suggest, the true founders of the science of tradition were those modern Catholic followers of Augustine who were loyal to the ecclesiastical tradition, but were not its servile followers. Indeed they did not so much believe tradition as believed in it.

I shall concentrate on two Catholic thinkers only: the French biblical philologist Richard Simon (1638–1712) and the Neapolitan mythological philologist Giambattista Vico (1668–1744). I would like to present both philologists in the context of our discussion – namely, as participants in the intellectual battle of the Reformation over the nature of religious knowledge.

Whereas Père Simon, the fierce campaigner against Protestant biblical scholars such as Vossius and Grotius, is a natural choice in this case, the choice of Vico is more complicated. He spent all his life in the Catholic stronghold of Naples and immersed himself mainly in ancient pagan literature. And yet, as I shall argue below (following
Paolo Rossi [1984], Peter Burke [1985] and other scholars who view Vico in the European context of ideas), the central issues of his philological studies were very much those of the Catholic Reformists; he simply looked at them from an entirely different perspective. In what follows I shall make clear that, much as they differed from each other in the subject matter and methods of their inquiries, both philologists pursued a common goal: to undermine the Protestant-rationalist belief in the absolute authority of the Scriptures. They both thought that the ideal of Scriptures which are absolutely original, self-contained, and purified of all fictional and traditional distortions was not only unattainable but fundamentally misconceived. They both regarded tradition as indispensable to the making of the biblical – and indeed any other – authority.

Richard Simon was a biblical scholar at the Oratory in Paris, whose reconstructive work on the Old and New Testaments is an exemplary achievement of the critical-historical method in this field (Hazard 1963; Popkin 1974). Although he was a professional theologian, however, Simon paid less attention to the message of the Bible than to its medium; he did not so much deal with its timeless religious and moral ideas as with the actual social conditions and literary patterns in which these ideas had been processed and authorized in history. His main interest was in what we would nowadays call the sociology of literature – that is, in the fundamental problems of literacy. The term “critical history” as he employs it is peculiar to him and indicates his formal literalist approach to the Scriptures: in his works he deals solely with the history of the texts; he investigates what happened to the texts and not, as it were, what happened in them. He sets out to show how both Testaments developed in time, how – though certainly once given by God – they were in fact made over and over again by human beings during many centuries of explanation and interpretation.

From the outset, then, Simon employs the concept of tradition in order to undermine the Protestant belief in pure and perfect original sources. In the preface to his major work, *A Critical History of the Old Testament* (1682) he says critically of the Protestants that because “they have laid aside the Tradition of the Church, and will acknowledge no other principle of Religion but the Scripture of itself, they were obliged to suppose it plain and sufficient for the establishing of the truth of Faith without any Tradition.” The aim of his work, he says, is to counter such claims by showing

that if we join not Tradition with the Scripture we can hardly affirm any thing for certain in Religion. We cannot be said to quit the word of God by joining therewith the Tradition of the Church, since he who refers us to the Holy Scriptures has also refer’d us to the Church he has trusted with this holy pledge. Before the Law was writ by Moses the ancient Patriarchs preserved their religion in its purity by Tradition only. After the Law was writ the Jews always upon difficulties consulted the Interpreters of this Law. (Simon 1682, “The Author’s Preface”

His principal argument is that the original authors of the Bible were not mere “private Writers” (who would apply themselves “to the writing of the History of their
times only out of the motives of interest”), but “publick Writers” – namely, scribes who “did faithfully collect the transactions that passed in the whole state.” Furthermore, these writers “were not only charg’d with the collection of the Acts . . . but they gave sometimes a new form to the Acts themselves which had been collected by their Predecessors, by adding or diminishing according as they thought fit” (ibid., 4).

Simon thus sought, contra the Protestant fundamentalists, to extend the inspiration of the Scriptures from those who witnessed the events directly – the prophets and the apostles – to those who remolded them by transcription, alteration, and interpretation. The failure to recognize the fact of continuous revelation in history, he argued, was characteristic of Protestants and orthodox Catholics alike. This shortcoming also led critical historians of the Bible such as Spinoza to draw far-reaching and in Simon’s view erroneous conclusions about “these alterations or additions for the running down of the Authority of the Holy Scripture, as if these corrections had been purely of humane Authority: whereas he [Spinoza] ought to have consider’d that the Authors of these alterations having had the Power of writing the Holy Scriptures had also the Power of correcting them.” He then adds:

The Catholics, who are persuaded their Religion depends not only on the Text of Scripture, but likewise on the Tradition of Church, are not at all scandaliz’d, to see that the misfortunes of Time and the negligence of Transcribers have wrought changes in the Holy Scriptures as well as in prophane Authors: these are none but prejudic’d Protestants or ignorant people that can be offended at it. (Ibid., 9–10)

Tradition, in other words, was not a corruption of ostensibly original perfect sources but was the very process in which these sources were created. The Christian doctrine, he says, was neither revealed nor recognized all at once as a timeless and static truth; it appeared and was made known through history, growing, as it were, along with man’s consciousness in a process of accommodation that advanced by practical rather than theoretical means: “As for the New Testament, the Gospel was established in many Churches before anything of it was written.” Furthermore, in order to account critically for the history of the two Testaments, it is not enough to inquire how the Bible was originally written but also necessary to know how it has been read ever since. And on this matter Simon thought that there was much to be learned from the Jewish Massoret, where, significantly, “the question is about the custom of reading” (ibid., 152ff.).

In his attempt to present Christian tradition as an ongoing process of authorization of the Scriptures, a process that consists not in servile repetition but in criticism of what former ages had thought and taught, Richard Simon fought not only against Protestant reformers but also against Catholic conservatives. The latter, who were led in his time by Bossuet, held to the opinion that the Christian doctrine and its tradition never or hardly ever changed. As they believed in the infallibility of tradition – that is, in the technical perfection of the oral and ritual means of transmitting the original holy message – they were naturally outraged by Simon’s basic reading of the Bible as a thoroughly historical literature and, worse still, one
that was plagued by numerous misunderstandings and distortions. Thus it is not surprising that his loyal, but wholly unorthodox, defense of Christian tradition was attacked, and then banned, by the Church authorities.

And yet, for all his ingenuity in the philological reconstruction of the biblical tradition, Simon did not much advance the science of tradition per se: like his fellow Catholic critics – Mabillon, Tillemont, Mably, or the early Bollandists – Simon too remained within the boundaries of his profession, rarely if ever dealing with topics that lay beyond his immediate antiquarian interest, methods, and aims. Owen Chadwick has rightly pointed out that even though these scholars were all "working upon a theory of a church changing its practices and even doctrines," they did not work out "any theory of change" (Chadwick 1957, 66). This was first done by Giambattista Vico.

Unlike Père Simon, Vico was not a professional theologian, nor was he involved directly in the religious disputes of the age. In fact, for various reasons, he hardly if ever referred to issues or examples from Christian history. His major work, The Principles of a New Science Concerning the Common Nature of the Nations ([1744] 1968), dealt – as the title suggests – only with pagan nations and civilizations. And yet, although he did not directly treat of the traditional composition of the Scriptures, he did reflect on it in an analogous – or rather counteranalogous – way; in his treatment of such pagan sacred works as the Homeric Epics or Roman Law – namely, works that fulfilled the same social and religious functions in classical civilizations – he made his position on the issue of scriptural authority clear. His ultimate aim was to prove by such counteranalogous examples the essentially traditional authority of all our cultural institutions.

In the most famous passage of The New Science Vico declares:

But in the night of thick darkness enveloping the earliest antiquity, so remote from ourselves, there shines the eternal and never failing light of a truth beyond all question: that the world of civil society has certainly been made by men, and that its principles are therefore to be found within the modifications of our own human mind. Whoever reflects on this cannot but marvel that the philosophers should have bent all their energies to the study of the world of nature, which, since God made it, He alone knows, and that they should have neglected the study of the world of nations, or civil world, which, since men had made it, men could come to know. (NS, 331)

This oration has received much attention and various interpretations. And yet, while most of the commentators – Marx being the most famous – paid homage to its modern philosophical message, regarding it as one of the earliest and clearest statements on human sovereignty, they seem to have completely overlooked its philological premises. They have given much, perhaps too much, attention to Vico's epistemological notions, to what he had to say about knowing the mondo civile, and

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14 In quoting Vico's New Science (henceforth NS) I shall note in parentheses only the standard paragraph numbers.
thus neglected what he had to say about making it. This failure to take into account the reasons and concrete proofs by which Vico arrived at his "eternal truth" blurs much of what is so original about it. Indeed, Vico's claim that to know something is to have made it, and that therefore "the world of nations, or civil world,... since men had made it, men could come to know," is not in itself very original; in one way or another it has been acclaimed before by various thinkers from Aquinas to Hobbes, although none pursued it as deeply and as thoroughly as did Vico (Loith 1968, 157-88). In my view, however, Vico's notion receives its full and truly radical meaning only when we understand how he perceived the "making" of the civil world to have occurred.15

Vico's originality lies in his claim that the "civil world" (or what we nowadays call culture) was not only created by the poetic fictions of the first men, but that it still resides in them—insofar as these fictions permeate all our social practices: they persist in linguistic metaphors, religious myths, marital and burial rites, national feasts, and in all the anonymous and collective customs we live by. Vico thus seems to have found his inspiration and proofs for man's civil creativity in the "darkness of earliest antiquity." It was then and there, he says (in a pre-Heideggerian idiom), that our civil world "came into being": "The nature of institutions is nothing but their coming into being [nascimento] at certain times and in certain guises. Whenever the time and guise are thus and so, such and not otherwise are the institutions which come into being" (NS, 147). Yet, much as he was fascinated by the enormous creativity of the ancients, Vico—in contrast to Bacon—had no illusions about their "Wisdom." While scholars from Bacon to Newton seemed to find in the classical fables sublime ideas about the nature of reality, Vico saw only rudimentary images of it. He duly concluded that the "Wisdom of the Ancients" was not rational (as Bacon surmised), but poetic; it "must have begun with a metaphysics not rational and abstract like that of the learned men now, but felt and imagined as that of these first men must have been, who, without power of ratiocination, were all robust sense and vigorous imagination" (NS, 375). Vico sums up his antirationalistic thesis poignantly:

So that, as rational metaphysics teaches that man becomes all things by understanding them (homo intelligendo fit omnia), this imaginative metaphysics shows that man becomes all things by not understanding them (homo non intelligendo fit omnia); and perhaps the latter proposition is truer than the former, for when man understands he extends his mind and takes in the things, but when he does not understand he makes the things out of himself and becomes them by transforming himself into them. (NS, 405)

We can now see on what grounds Vico dismissed Bacon's interpretations of the ancient fables as being "more ingenious and learned than true": Bacon's method was

15 For an insightful, and highly influential, interpretation of Vico's verum et factum principle on epistemological premises, see Berlin 1976, 105-10; Berlin 1979, 80-110. Unlike other philosophical interpreters, however, Berlin does not confine himself (and Vico) to the philosophical sphere and attempts (in 1976, 125-42) to relate Vico's notions to the French legal tradition.
not true, he seems to suggest, because it was not historical; it did not consider the ancient fables from the proper psychological and historical perspectives—those of their makers. Bacon’s work was a typical case of what Vico elsewhere defines as “the conceit of the scholars . . . who will have it that what they know is as old as the world” (NS, 127). According to Vico, on the other hand, in order to know our social-historical world we must perceive its inner “poetic logic”—namely, we must trace the evolution of poetic and concrete images of reality into our rational abstract concepts, and not merely impose the latter on reality as if they were absolute and eternal (NS, 497–99). Indeed, we can “come to know” the “civil world”—but not as scientists, whose knowledge applies, as far as it can, only to the “world of nature”; rather as “poets,” insofar as we still share in the traditional fictions that have constituted it (NS, 34, 338, 367).

By recognizing man as primarily a cultural being rather than just a natural one—a being who makes himself, his world, and his history—Vico was able to oppose the mechanical atomistic views of his contemporaries quite effectively (Garin 1981; Kessler 1981). Vico sums up both his antirationalistic and his anti-individualistic views in another resounding oration toward the end of his work:

It is true that men have themselves made this world of nations . . . but this world without doubt has issued from a mind often diverse, at times quite contrary, and always superior to the particular ends that men had proposed to themselves; which narrow ends, made means to serve wider ends, it has always employed to preserve the human race upon this earth. Men mean to gratify their bestial lust and abandon their offspring, and they inaugurate the chastity of marriage from which the families arise. The fathers mean to exercise without restraint their paternal power over their clients, and they subject them to the civil powers from which the families arise . . . That which did all this was mind, for men did it with intelligence; it was not fate, for they did it by choice; not chance, for the results of their always so acting are perpetually the same. (NS, 1106)

Now the key term in this passage is “mind” (mente), which orders the disparate actions of individuals into a social whole. It is not very clear from Vico’s text whether this mind is wholly transcendent to human actions (Providence), or whether it is immanent in them.\footnote{Pompa (1975, 51–61) sums up the main modern interpretations of Vico’s concept of “Providence.” Funkenstein (1986, 202–89) clarifies the historical-theological meanings of the concept and its secularization in Vico and later authors.} It seems to me that in this case Vico refers to the latter option—roughly, to that which other thinkers in other cultures have termed variably as \textit{qualitas temporis}, or \textit{esprit général}, or \textit{Volksgeist}; like these terms, Vico’s \textit{mente} is a generally descriptive term for the holistic aspect in social life, signifying the intersubjective and largely impersonal process of decision making in civil association, whereby its members take a common course of action, seemingly each acting out of his own will but, as it were, also regardless and even contrary to it. The important point for Vico is that this process is not inertial or irrational because, as he puts it,
men act "with intelligence" and "by choice." What he then seems to say is that there is indeed a certain collective reason emanating from and operating through individual human actions, a judgment on them that is not deduced rationally by each individual from his own experience but rather traditionally, imparted to individuals as the common collective experience of the group. And this ongoing and cumulative judgment, which is both dependent on but also prior and superior to that of the individual, is what Vico understood in the concept of tradition.17

Vico's basic attitude to tradition was certainly motivated by his conservative religious and political sensibilities. He was well aware of the mythical heritage embedded in the institutions of Catholicism and Monarchism. But as we have seen, his philosophical and historical insights took him far beyond the common conservative notion that "institutions embody wisdom." Few thinkers before or after him tried to subject this wisdom to serious psychological and sociological analysis (Kelley 1980). He certainly went further than Simon in his appreciation of tradition as a creative process. As we saw above, while both theorists sought to defend tradition against the Protestant-rationalist attack, their basic attitudes to it were very different. While Simon, the skeptical critic, sought to undermine the ideal of *textus purus* by showing that such a text does not exist, in fact never did exist -- since the Bible was originally written down according to traditional patterns -- he still believed that the task of the critic was to uncover from all later versions the most authentic and apparently "truest" one. Vico on the other hand did not even believe in, or at least did not pursue, this positivistic goal; unlike Simon, he was not at all interested in the question of whether ancient fabulous sources were true or false on factual or cognitive grounds. Instead, he asked what they meant. And because he was not so much concerned, as Simon was, with the factual truth or falsity of archaic descriptions, he was dissatisfied with the latter's philology, the so-called critical-historical method; instead, he devised a new heuristical method, which he termed significantly "a new art of criticism" -- the central postulate of which was that every text is true to those who produced it.

Vico intentionally construed his "new art of criticism" both against the old, uncritical theories of history which simply accepted and transmitted tradition's stories and values, and against the new, ultracritical theories of history which totally discarded tradition. For Vico, traditions were not an obstacle but a medium of "historical truth" -- a means of making and discovering this truth. Furthermore, his very conception of "historical truth" was different from the common, quasi-Cartesian one. For Cartesian critical historians such as Bayle, to know the truth about an event of the past meant to know it as a "clear and distinct case," its naked facts

17 Vico's explanation of the nature of tradition in terms of a purposeful social order arising out of unrecognized and unintended individual actions was, and still is, a very common one. For its medieval origins (in theories of providential guidance) and early modern formulations (as in Mandeville's *Private Vices, Publick Benefits*, Adam Smith's *Invisible Hand*, Hegel's *List der Vernunft*, and so on), see Euchner 1973, 82--125. For its more modern formulations in social and economic theories (in works of R. K. Merton, F. A. Hayek, and others), see Coleman 1968, 239--82, and Foster 1962. See also H. B. Acton's general comments in his presidential address to the Aristotelian Society in 1953.
stripped of all the vulgar layers in which tradition has wrapped them. For Vico, on the other hand, "historical truth" was inseparable from its "fabulation," since this, he believed, attested to the way in which people not only perceived the events but also created them. "Vulgar traditions," he contended, are not concealing but revealing truths: they are indispensable both to societies and to those who study them, because it is always in and through such collective patterns of thought that people construe their social reality. In the New Science he says:

Vulgar traditions must have had public grounds of truth, by virtue of which they came into being and were preserved by entire peoples over long periods of time. It will be another great labor of this Science to recover these grounds of truth – truth which, with the passage of years and the changes in languages and customs, has come down to us enveloped in falsehood. (NS, 149–50)

The phrase "public grounds of truth" is a rather rough translation of the Italian original – *publici motivi del vero*. The term *publici motivi* indicates more clearly what Vico regards as the main force in the social construction of reality, to wit, the spontaneous and collective aspirations of the people, as revealed in their "vulgar traditions" – in linguistic phrases, in myths, in popular beliefs, and so on; they are roughly what modern social historians call *mentalités* – collective images of reality, which comprise the simple and common perceptions of life, death, sex, work, family, etc. These "public motives of [what is commonly regarded as] the true" in everyday life form what Vico calls the "common sense" (*sensus communis*) of the community:

*Human nature, by its nature most uncertain, is made certain and determined by the common sense of men with respect to human needs or utilities... Common sense is judgment without reflection, shared by an entire class, an entire people, an entire nation, or the entire human race. (NS, 141–42).*

In Vico's contention that "common sense is judgment without reflection" we can grasp, in capsule, his entire new critical theory of tradition: a tradition is not a blind repetition of past beliefs and practices, but rather a continuous "judgment" of them; it is "critical," yet in a different and more constructive way than the purely theoretical deductions of Cartesian reasoning: it is critical by virtue of being the most practical lesson which the community has drawn from its entire social experience through the ages. And hence, as Gadamer has noted, Vico's notion of *sensus communis* "obviously does not mean only that general faculty in all men, but the sense that founds communities" (Gadamer 1975, 21).

To sum up this section: I chose these two Catholic scholars because they represent, in my view, the two main trends in the Catholic reappraisal of tradition: its acceptance on skeptical-negative grounds (Simon) and the full recognition of its creative potentiality (Vico). As we saw, both thinkers, while faithful to the concrete Catholic traditions of faith, are important for the emerging science of tradition in that they attempted not only to justify their own particular traditions but also to reappraise the very conception of tradition. In so doing they went in fact far beyond, and to a certain
extent even against, Catholic orthodoxy; because in their efforts to prove the validity of their own tradition, they eventually came to regard the very process of tradition as valid in itself, such that produces genuine knowledge in other fields and cultures. In their works we find thus for the first time a positive and (to use Vico’s idiom) “new scientific” understanding of tradition: they rejected the Protestant equation of “tradition” with “corruption” of original sources and saw it instead as a “re-creation” of them.

**Toward a New Science of Tradition: Some Concluding Remarks**

Vico’s vindication of tradition in terms of “judgment without reflection” has much in common with modern attempts to demonstrate the value of the collective and prerational modes of thought in all spheres of culture. Over the last decades scholars in the humanities and the social sciences have become increasingly more attentive and responsive to the lessons of the Romantics, Nietzsche and Freud, Wittgenstein and Heidegger. In their respective ways, all these thinkers and their followers have taken antirationalistic turns and come to criticize the Enlightenment ideal of pure reason not only as impossible in itself but also as fundamentally misconceived: the Kantian beliefs in the universality and necessity of reason, or in the sovereignty of the autonomous rational subject, have been criticized as impervious to the contingency and conventionality of the social rules and criteria within which all processes of knowledge formation occur. For these anti- or post-Enlightenment thinkers, no act of cognition is or could ever be so pure as to allow a direct and immediate perception of the objects by the mind, since, they argue, the imperial a priori is always embedded in empirical conditions, and absolute truth claims are always made in a contingent social reality, performed in different language games and thus are always subject to specific “forms of life.”

This opposition to the Enlightenment ideal of knowledge has undermined some of its principal cultural ideals as well, leading on the whole to a much more positive appreciation of such concepts as “community,” “authority,” “virtues,” “myth,” “metaphor,” or “prejudices” – all of which had fallen into disrepute. These and similar concepts, which thinkers from Bacon to the Enlightenment (and to modern positivism) regarded as destructive to the growth of knowledge, have now been recognized as constitutive to it. In the same vein the concept of “tradition” has also been reappraised. As a glance at modern theories of scientific and artistic creativity in various fields will make clear, there is now a widespread consensus about the constructive functions of distinctly traditional modes of thought in most, if not all, human institutions. This view is shared by prominent philosophers (Gadamer 1975, 245ff.; MacIntyre 1981, chap. 15; Taylor 1984) and political theorists (Arendt 1958;

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18 For two influential expositions of these Wittgensteinian notions, see Taylor 1985, 15–57, and Rorty 1979. Barnes and Bloor 1982, 21–47, is an extremely radical application of this theory to the philosophy of science.
Pocock 1968); by historians (see the case studies in Hobsbaum and Ranger 1983), sociologists (Shils 1981; Eisenstadt 1969), and economists (von Hayek 1960). Much as these thinkers differ from one another in their concrete treatment of tradition (and personal commitment to it), they all seem to agree with Vico that the primary task of any inquiry in any field of knowledge is to clarify what Vico termed its "public grounds of truth"—namely, the particular sociohistorical conditions and underlying "structures of consciousness" in which its categories have been formed and processed.

These modern apologies for tradition are, therefore, radically different from the classical conservative apology—as put forth for example by Edmund Burke—in one crucial aspect: they all view (and justify) tradition as a dynamic, open, and critical process of learning from past experience, not merely as a repetitive and uncritical imitation of it. For Burke and his ilk adhered to tradition as the last barrier against the chaos of individualistic and agonistic society (as exemplified in France during the Revolution), and regarded such age-old prejudices as the "Divine Rights of Kings" as "the general bank and capital of nations and ages," of which "the individuals would be better to avail themselves" (Burke 1853, 2:359). These conservatives, then, justified tradition only and insofar as it was a historically extended Gleichschaltung, a defense mechanism of the state against social conflicts caused by individuals who, relying only on their "private stock of reason," were liable to ignore the higher raison d'état. In Mannheim's terms, Burke, De Maistre, and like-minded counterrevolutionaries who seek to reinvigorate society by its retraditionalization are ideological—not naive—traditionalists (Mannheim 1953, 94–98).

The alternative tradition of tradition, stretching from Vico to modern exponents such as Gadamer and MacIntyre, has strongly rejected such attempts to explain and justify loyalty to tradition solely on negative grounds. Its adherents have sought instead to present the case of loyalty to tradition in precisely the opposite terms—that is, not as an act of resignation from personal responsibility and submission to higher authority, but rather as an act of heightened awareness on the part of individuals with regard to their social world and history, an awareness that may lead them to even greater responsibility to, and participation in, maintaining social practices. In Gadamer's view, tradition is a category of the awareness of history and its effects on man:

That which has been sanctioned by tradition and custom has an authority which is nameless, and our finite historical being is determined by the fact that always the authority of what has been transmitted—and not only what is clearly grounded—has power over our attitudes and behaviour. . . . A tradition is constantly an element of freedom and history itself. (Gadamer 1975, 249)

For Gadamer, as for Vico and the Romantics, this awareness of our being-in-tradition is or ought to be decisive for the way we understand and interpret our human world. Gadamer acknowledges his debt to his predecessors and reiterates their claim that, since men have made their civil world by using their poetic capacities
and traditions, the interpretation of this world must be more aesthetic than scientific. The awareness of tradition thus ultimately implies a "hermeneutical turn" for the "modern historical sciences," which, says Gadamer, have hitherto made "what has grown historically and has been transmitted historically an object to be established like an experimental finding – as if tradition were as alien and, from the human point of view, as unintelligible, as an object of physics" (ibid., xxi).

We can see, then, that although most modern advocates of tradition share Burke’s skeptical view of rational individualism and are wary, as he was, “to put men to live and trade each on his private stock of reason,” they do not deny the freedom of the individual to criticize what past generations have thought and taught, nor do they regard tradition as necessarily monolithic and oppressive in its idiom of knowledge. In order to be authoritative at all, they argue, a living tradition must be argumentative, and not just imperative, about the lessons and values it upholds: a tradition is in fact more successful if it includes, at least implicitly, those arguments it opposes.

The history of science, as Amos Funkenstein (1986) has construed it, offers a particular poignant illustration of this issue. In his account of the “dialectical preparation of scientific revolutions,” Funkenstein proclaims the efficacy of conceptual heterogeneity in scientific traditions. He does it by showing that many important discoveries and theoretical innovations in modern science owe their inception to classical and medieval hypotheses that had been intentionally construed – only in order to be discarded – as absurd examples, thereby affirming, as it were, the validity of the opposite paradigmatic theories at the time. These old and seemingly absurd ideas have, however, not been banished from the annals of science, because the scientific tradition itself has been so construed as to include them in its account. The fact that such unthinkable categories as Aristotle’s motion-in-the-void, when carried over to the new Newtonian domain, came to be the thought of the day attests – among other things – to the merits of the scientific tradition. Similar examples for the vitality of heterogeneous traditions can be found in the history of religions or political thought, where orthodox traditions have often preserved the heresies of the past. In any case, the notion of “tradition of heresies” may render some harsh distinctions between traditionalism and modernism less conclusive.19

We can thus conclude that, contrary to the Burkean view, tradition is not – or at least does not always have to be – absolutely authoritative in its transmission of

19 In his two seminal articles of 1970 and 1982, Horton employs Popper’s famous closed/open dichotomy to distinguish between traditional and modern systems of thought, arguing (originally against Winch 1964) that primitive thought as exemplified in African magic is primarily theoretical – that is, truth-oriented rather than merely meaning-oriented – and is thus compatible with rationalism as exemplified by European science. And yet, against those relativists who would have us believe that these and all other systems of thought are hence essentially the same, Horton points out the cognitive differences between African traditionalism and Western modernism: whereas the first consists in the authoritarian hegemony of one consensual theory, which is hardly criticized, and never systematically so, and is changed only by adaptive means caused by practical necessities, the second is based on an open, pluralistic-competitive, and progressive conception of knowledge. Kuhn, one presumes, would argue that Horton’s traditionalism is an apt characterization of normal science.
knowledge. Social and intellectual traditions are alive and truly effective only and insofar as they are inclusive, dynamic, and self-critical. As MacIntyre sums it up, “traditions, when vital, embody continuities of conflict. Indeed when a tradition becomes Burkean, it is always dying or dead” (MacIntyre 1981, 222).

These last remarks about the possibility of maintaining open and critical traditions of research are pertinent to the main issue of this paper—namely, to the resolution of the “essential tension” between innovation and tradition in scientific research. I hope I have made it clear that the conservative—“Catholic” claim that all our cultural enterprises are traditionally bound by no means implies the end of the liberal—“Protestant” belief in individual free inquiry. Rather, it serves as its corrective measure. What the pro-tradition stance does imply is that, given the inevitability of tradition and the need to go beyond it, the best we can aim for, in science as elsewhere, is not to break loose completely from the constraints of tradition, nor to submit blindly to it, but rather to understand and improve it by keeping it open and heterogeneous. As Karl Popper once remarked, “We can free ourselves from the taboos of a tradition; and we can do that not only by rejecting it, but also by critically accepting it.” We must, he said, “replace the attitude of tabooism by one that considers existing traditions critically, weighing their merits against their demerits, and never forgetting the merit which lies in the fact that they are established traditions” ([1948] 1962, 132).

References


NS, see Vico [1744] 1968.


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