theologians thought they possessed a philosophical medium conding to their subject matter. It might create the impression that in eucharistic theology, for example, because “transubstantiation” made use of Aristotelian categories, it described a physical process belonging to natural philosophy, as if an Averroistic rationalism were sufficient to express what theologians believed was going on, or as if “substance” were being conceived as matter in a modern sense. Not so—at least not in Christian thinkers up through Aquinas, whose denial that God belonged to any genus with creatures used Aristotelian categories to preserve the traditional distinction between God and creation. Among the distinction’s many implications was the obvious fact that after transubstantiation, the consecrated bread and wine looked, smelled, tasted, and seemed in every empirical respect just as they had before.

John Duns Scotus (c. 1266–1308), however, had a different idea regarding what can be said about God and how it can be said, which implied a view about what Scotus thought God had to be, insofar as God was real. Although his idea was not condemned as doctrinally heterodox, it was a critical departure from the inherited Christian notion of the relationship between God and creation, and one that in combination with other developments would eventually prove enormously consequential, not least because of its aforementioned congruity with the influence of ordinary grammar on discourse about God. Insofar as Scotus was a faithful Franciscan friar who studied and taught at the universities of Oxford and Paris, whose faculties of theology comprised the very center of the church’s intellectual establishment in the late thirteenth and early fourteenth centuries, it might seem odd to describe him as departing in any respect from traditional Christianity. Yet the particular way in which he did so becomes clear when we see, in conjunction with many subsequent contingencies, where his move led and what it made possible.

Starting from the traditional position of the radical distinction between God and creation, Scotus asked what could be said about God strictly on the basis of reason or philosophy. In response to the views of Henry of Ghent (c. 1240–1293), another Parisian master whose own position on theological analogy differed in important ways from that of Aquinas, Scotus argued that at least one predicate was and had to be common to and shared in the same sense by God and creatures. Were this not so, the inherited view would prevent anyone from saying anything at all directly about God on the basis of reason alone. This in turn, Scotus thought, would burn every potential bridge between what observation could discover or philosophy could discern about God on the one hand, and Christianity’s central claims about God’s actions in history on the other. So Scotus “broke with the unanimous and traditional view.” He predicated of God something that he thought God had to share with everything else in the same sense, simply by virtue of existing, namely being. The eleventh-century Muslim philosopher Ibn Sinā (Avicenna; c. 980–1037) had argued that being is conceptually prior to and common to God and creatures. Insofar as God’s existence is considered in itself and in its most general sense, Scotus agreed that God’s being does not differ from that of everything else that exists. This is Scotus’s univocal conception of being—a term that, because it is predicated in conceptually equivalent terms of everything that exists, including God. By contrast, Christian theologians who continued to hold the inherited view, before and after Scotus, denied that God belonged to the same order or type of existence as his creation. Notwithstanding the differences that, Scotus thought, continued to distinguish the reality of God from that of creatures (his infinite and perfect power, sovereignty, wisdom, and so forth), Scotus’s move made God, in Robert Barron’s phrase, “mappable on the same set of coordinates as creatures.” It had the effect of removing the ironic quotation marks implicit in the traditional conception of God—according to Scotus, God does not “exist,” he exists.

In and of itself, Scotus’s move need not have mattered much. It belonged to the stratosphere of high intellectual culture and was shared only among a small number of educationally privileged male clerical elites; it was written in a language that only a tiny percentage of the population could understand; and it was transmitted only by means of hand-copied manuscripts among male teachers in friars’ studia and the three universities (Paris, Oxford, and Cambridge) with faculties of theology before the 1340s. The social, political, wider cultural, and economic impact of Scotus’s idea in the early fourteenth century, a tumultuous period for the church and for Scotus’s Franciscan order, was nil. So why bother with it? Because history is the study of human change over time in all its dimensions, not just the assessment of short-term influence viewed in social, political, cultural, or economic terms. Partly because of its relationship to default ideas about God born of ordinary linguistic grammar, the unforeseen, long-term influences of Scotus’s move have been enormous, as will become clear not only in this but also in later chapters.

By predicing being of God and creatures univocally, Scotus brought both within the same conceptual framework. However much God differs from creation, according to Scotus the fact of his existence necessitates that he belongs to a more encompassing reality with creatures, one defined by being, conceived in its most abstract, most general sense. This would prove to be the first step toward the eventual domestication of God’s
transcendence, a process in which the seventeenth-century revolutions in philosophy and science would participate—not so much by way of dramatic departures as by improvising new parts on a stage that had been unexpectedly transformed by the doctrinal disagreements among Christians in the Reformation era.

The seventeenth-century contributions were shaped not only by Scotus, but by further developments in scholastic philosophy. These developments included the appropriation and transformation of metaphysical univocity by nominalist thinkers, the most influential of whom was Scotus's younger Franciscan confrere, William of Occam (c. 1285–c. 1348). In the early fourteenth century, Occam radicalized Scotus's views on univocity and much else, rejecting more thoroughly Aquinas's way of speaking about God, for whom “ana-logical” had not meant comparable or proportional to creatures or creation. According to Aquinas, God in metaphysical terms was, incomprehensibly, esse—not a being but the sheer act of to-be, in which all creatures participated insofar as they existed and through which all creation was mysteriously sustained. In Occamist nominalism, by contrast, insofar as God existed, “God” had to denote some thing, some discrete, real entity, an ens—however much that entity differs from everything else, a difference Occam highlighted by emphasizing the absolute sovereignty of God’s power (potentia Dei absoluta) and the inscrutability of God’s will within the dependable order of creation and salvation he had in fact established. When combined with an either-or categorical distinction between natural and supernatural plus nominalism’s heuristic principle of parsimony known retrospectively as Occam’s razor—the idea that explanations of natural phenomena “ought not to multiply entities beyond necessity”—the intellectual pieces were in place, at least in principle, for the domestication of God’s transcendence and the extrusion of his presence from the natural world. Aside from some late medieval Dominican preference for Aquinas and the persistence of Scotism, the nominalist via moderna became and remained the principal intellectual framework for natural and moral philosophy as well as for theology in many universities after the mid-fourteenth century. The number of universities in Europe nearly doubled in the fifteenth century, while those with faculties of theology proliferated at the hands of rival papal claimants after the schism of 1378 and increased almost tenfold in the fifteenth century. Metaphysical univocity and nominalism spread along with them. At the outset of the sixteenth century, the dominant scholastic view of God was not esse but an ens—not the incomprehensible act of to-be, but a highest being among other beings.

In combination with a univocal metaphysics, the Renaissance revivals of three major ancient philosophical traditions—Platonism, Stoicism, and Epicureanism—would contribute substantially to the forging of modern science. They would also play a role in the eventual perception that science and religion are incompatible. Their intellectual challenges to scholastic Aristotelianism contested both its conceptualization of knowledge as taught and the disciplinary configuration of knowledge as institutionalized in universities.

Amos Funkenstein explained how these philosophical revivals contributed to the peculiar confluence of theology and physics in the seventeenth century. From Platonism came mathematization—only mathematics would have to function as an explanatory language applicable to the motion of things in the imperfect world of appearances, rather than derive metaphysically from or depend upon the transcendent world of extra-material ideas. This mathematization of natural phenomena, which began in late thirteenth-century Paris and Oxford and was preoccupied with measurement, gradation, equilibrium, and the attempt to quantify qualities, derived significantly from the influences on natural philosophy of scholastic economic analysis that sought to comprehend an increasingly monetized world of exchange characterized by market practices. The revival of Stoicism contributed to modern science a view of nature as homogeneous and deterministically governed by forces—only this conception would have to be severed from the Stoic notion of mutual sympathies among all natural things teleologically informed by the pneuma, the spiritual-and-material pantheistic continuum that provided theoretical underpinnings for practices of Renaissance magic and astrology. From Epicureanism came a conception of the uniformity of efficient, natural causes without final causality—only in order to contribute to the formation of modern science it would have to substitute a universal Stoic determinism in place of its physics of random collisions among atoms in the void.

In and of themselves, the revival of these ancient philosophies, and even of their aspects incompatible with Aristotelian natural philosophy and metaphysics, need not have presented insuperable problems for Christian teachings. Aristotle’s own philosophy, after all, had been appropriated in the twelfth and thirteenth centuries despite initial condemnations, intense contestation, and some ideas entirely at odds with Christianity, such as the eternity of the world and the mortality of the soul, which were officially rejected despite being championed by philosophical Averroists. Institutional innovations, too—most significantly, the creation of universities—could be and were incorporated into Latin Christendom despite presenting an alternative to long-standing monastic conceptions of the ways in which faith, worship, and knowledge were related to one another. Because the central claims of Christianity were not based or dependent on any philosophy
but rather on God’s putative actions in history, inherited assumptions and practices provided a stable framework for the testing, debate, and discriminating assimilation of philosophical ideas compatible with the faith. So Petrarch, Erasmus, and Rabelais, for example, could adopt aspects of Stoic ethics, as many of the church fathers had done, without accepting the Stoics’ pantheistic determinism. Likewise, in the midst of the seventeenth century’s intellectual ferment, the Catholic priests Pierre Gassendi (1592–1655) and Marin Mersenne (1588–1648) could adopt Epicurean atomism without embracing its hedonistic ethics or denial of teleology. Aspects of Platonism, Stoicism, and Epicureanism might even have been assimilated in combination with a univocal metaphysics in the universities, so long as the church’s teaching, preaching, worship, devotional practices, and prayer continued to convey and embody the faith’s central truth claims. Indeed, in broad terms this was the case in the fifteenth and early sixteenth centuries, in the combination of a prevailing nominalist theology in many universities, an unprecedentedly robust lay piety, and the Renaissance humanists’ enthusiastic retrieval of non-Aristotelian ancient philosophies.

But if the very nature of God’s actions, their meaning, or how they are known were contested or rejected, it might alter fundamental aspects of Christians’ relationship to God and what they thought they knew. Indeed, it might call into question what Christianity was, and so what Christians were to believe and how they were to live. This is what happened with the Reformation. It is primarily important for the story of modern science not because Reformation theologians directly undermined the radical distinction between God and creation. On the contrary, Luther, Calvin, and other Protestant reformers, based on their respective readings of the Bible, wanted to rescue the distinction from what they took to be distortions that derived from popish superstitions and Aristotelianism as such. The Reformation chiefly matters for the emergence of modern science in quite another way: the intractable doctrinal disagreements among Protestants and especially between Catholics and Protestants, as we shall see, had the unintended effect of sideling explicitly Christian claims about God in relationship to the natural world. This left only empirical observation and philosophical speculation as supra-confessional means of investigating and theorizing that relationship. With this unplanned marginalization of disputed Christian doctrines, widespread univocal metaphysical assumptions and the nominalist principle of parsimony became unprecedentedly important as the de facto intellectual framework within which such observation and speculation would unfold—and within which modern science would emerge. Modern philosophers since the seventeenth century have disagreed no less than have theologians about God’s relationship to the natural world, and empirical investigation was obviously not going to discover something that by definition transcended the natural world. Hence metaphysical univocity in combination with Occam’s razor opened a path that would lead through deism to Weberian disenchantment and modern atheism.

Although there is a complex story to be told about the relationship between late medieval metaphysical and epistemological ideas on the one hand and the respective truth claims of Protestant reformers on the other, Protestantism as such did not disenchant the world. One can hardly imagine, for example, a stronger characterization of divine providence than Calvin’s: “vigilant, efficacious, busy, engaged in constant activity,” such that “there is no wayward [eraticam] power, or action, or motion in creatures, but rather they are governed by God’s hidden plan such that nothing transpires unless he knowingly and deliberately decrees it.” Persecuted Anabaptists, including the Swiss Brethren, the south German and Austrian Anabaptists of the late 1520s and 1530s, the Moravian Hutterites, and the Dutch Mennonites in the aftermath of the Anabaptist Kingdom of Münster (1534–1535), were thoroughly imbued with a sense of God’s providential care and intimate love that sustained them in their suffering, just as they believed it had sustained Jesus, his apostles, ancient martyrs, and the martyrs’ latter-day Anabaptist successors. So too, in England between the Henrician Reformation of the 1530s and the religio-political upheavals of the 1640s, Protestants who spanned the spectrum of religious commitment from mere conformity to zealous Puritanism to separatist non-conformity shared a nearly universal belief in a providential, constantly active, transcendent creator-God.

Protestant reformers sought to restore a proper understanding of the relationship between God and creation as they respectively understood it. Nevertheless, some of their departures from the traditional Christian view seem to have implied univocal metaphysical assumptions in ways that probably did contribute to an eventual conception of a disenchanted natural world. One such departure was their variegated rejection of sacramentality as it was understood in the Roman church, not only with respect to the church’s seven sacraments, but also as a comprehensive, biblical view of reality in which the transcendent God manifests himself in and through the natural, material world.

Like many Dominican and Francisan friars before them, humanist reformers such as Erasmus (c. 1469–1535) had been concerned to distinguish genuine from almost certainly specious claims about God’s activity
in the world. Far from all of the many miracle claims made in the Middle Ages, for example, were credible. Credulously to accept all alleged miracles, no less than blithely to attribute supernatural causes to natural events, corrosively worked to discredit claims of miracles as such among the unlearned and/or the undiscriminating.\(^42\) Superstition harmed Christianity because it took and promulgated falsehoods for truths. Apart from God’s extraordinary actions in individual miracles, however, the most important, recurrent point of direct contact between God and the natural world was simultaneously the center of traditional Christian worship—the allegedly supernatural, real presence of Jesus in the Eucharist despite the steady appearance of bread and wine after their consecration by a priest.

Interwoven as it was with much else in the Roman church that Protestants rejected—including a sacerdotal priesthood, prescriptions of clerical celibacy, eucharistic devotion, and scholastic theology as institutionalized in universities—transubstantiation was one of the elements of traditional Christianity to which especially Reformed and radical Protestants in their respective ways objected most vociferously (in contrast to Luther, who insisted on the real presence of Christ in the Eucharist but rejected the doctrine of transubstantiation as objectionably Aristotelian). A torrent of Protestant polemics against traditional eucharistic teachings and practices started in the early 1520s and persisted throughout the early modern period. Antoine Marcourt’s anonymous and widely posted broadsheet, for example, the *True Articles on the Horrible, Enormous, and Unbearable Abuse of the Papal Mass, Directly Contrary to the Holy Supper of Jesus Christ*, sparked the Affair of the Placards (17–18 October 1534), the watershed event of the early Reformation in France.\(^43\) Reformed and most radical Protestants, in particular, rejected as idolatrous superstition or worse the very thing that Catholics revered, adored, and consumed as the re-presentation of the same body and blood of Christ sacrificed at Calvary for the redemption and salvation of human beings.\(^44\) The Dutch Anabaptist leader Menno Simons called the claim that the Mass was a sacrifice “an abomination above all abominations” that substituted in Christ’s place “an impure [onreyn], blind, seductive, and fleshly idolater with a piece of bread.”\(^45\)

Whether it was explicitly recognized by its protagonists or not, the denial that Jesus could be *really* present in the Eucharist—which is particularly clear, for example, in Zwingli’s spatial dichotomizing of Jesus’s divine and human natures, and the claim that “he sits at the right hand of the Father, has left the world, is no longer among us”\(^46\)—is a logical corollary of metaphysical univocity. A “spiritual” presence that is *contrasted* with a real presence presupposes an either-or dichotomy between a crypto-spatial God and the natural world that precludes divine immanence in its desire to preserve divine transcendence. But in traditional Christian metaphysics the two attributes are correlative: it is precisely and only God’s radical otherness as *nonspatial* that makes his presence in and through creation possible, just as it had made the incarnation possible. (Otherwise, Jesus would have been something like a centaur—partly human and partly divine, rather than fully human and fully divine.) The denial of the possibility of Christ’s real presence in the Eucharist, by contrast, ironically implies that the “spiritual” presence of God is *itself* being conceived in spatial or quasi-spatial terms—which is why, in order to be kept pure, it must be kept separate from and uncontaminated by the materiality of the “mere bread.”

As central as the Eucharist was in medieval Christianity and remains in official Roman Catholic teaching—in 1964, the Second Vatican Council called it “the source and summit of the Christian life,” a claim repeated in both the recent *Catechism of the Catholic Church* and by Pope John Paul II\(^47\)—and as divisive as eucharistic controversy was in the Reformation era, this sacramental context remained narrow in comparison to the relationship between God and the natural world as a whole. But what if the anti-Roman exclusion of divine immanence that presupposed metaphysical univocity were to be combined with Occam’s razor and a conception of the natural world as an explanatorily adequate system of self-contained, efficient causes? Then there would be neither a place for the active, ever-present, biblical God of Christianity, nor a reason to refer to him except perhaps as an extraordinarily remote, first efficient cause. This would mean, of course, that the God under consideration would no longer be the biblical God. It would be the God of deism. As we shall see, this is what had happened by the end of the seventeenth century among some thinkers who made the same univocal metaphysical assumptions and were *au cou rant* with Newtonian natural philosophy. In this way, the Protestant denial of sacramentality as it was understood in the Roman church contributed unintentionally and indirectly to post-Enlightenment disenchantment.

If the Reformation’s supporters had been contained and controlled like the Alpine Waldensians or English Lollards in the late Middle Ages, then Protestant repudiations of medieval Christian teachings, including those pertaining to sacramentality, might not have mattered much. But unlike medieval heresies, the Reformation spread explosively in the early 1520s. Beginning in Germany and Switzerland, many cities and rulers embraced its rejection of the Roman church and offered political protection to Lutheran or Reformed Protestantism. The Reformation endured and brought endless doctrinal controversies in its wake—about Christ, the sacraments,