
FOURTH EDITION
The Humanities
Culture, Continuity & Change
Henry M. Sayre

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The Humanities

Culture, Continuity & Change

1600 TO THE PRESENT | VOLUME II

Pearson

HENRY M. SAYRE

In memory of my good friend Bud Therien, art publisher and editor par excellence

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BRIEF CONTENTS

CONTENTS

36 New York, Skyscraper Culture, and the Jazz Age

MAKING IT NEW

37 The Age of Anxiety

FASCISM AND DEPRESSION, HOLOCAUST AND BOMB

DEAR READER,

It has been nearly 20 years since I first sat down to write this book, and now, with the publication of this fourth edition, I'd like to take the opportunity to reflect a moment on the humanistic enterprise as, in its new Revel edition, this book fully enters the digital age.

But first, you might well ask, what is the humanistic enterprise exactly? At the most superficial level, a Humanities course is designed to help you identify the significant works of art, architecture, music, theater, philosophy, and literature of distinct cultures and times, and to recognize how these different expressions of the human spirit respond to and reflect their historical contexts. More broadly, you should arrive at some understanding of the creative process and how what we—and others—have made and continue to value reflects what we all think it means to be human. But in studying other cultures—entering into what the British-born, Ghanian-American philosopher and novelist Kwame Anthony Appiah has described as a "conversation between people from different ways of life"—we learn even more. We turn to other cultures because to empathize with others, to willingly engage in discourse with ideas strange to ourselves, is perhaps the fundamental goal of the humanities. The humanities are, above all, disciplines of openness, inclusion, and respectful interaction. What we see reflected in other cultures is usually something of ourselves, the objects of beauty that delight us, the weapons and the wars that threaten us, the melodies and harmonies that soothe us, the sometimes troubling but often penetrating thoughts that we encounter in the ether of our increasingly digital globe. Through the humanities we learn to seek common ground.

Today, digital media—epitomized by Revel—give us the means to open this world to you in ever-increasingly interactive ways. Architectural panoramas of major monuments such as Chartres Cathedral, or Angkor Wat in Cambodia, or Frank Lloyd Wright's Fallingwater allow you to stand at multiple points in the spaces and turn around a full 360 degrees, as if you were actually there. And in these spaces, you can zoom in to see details, as in fact you can with nearly every image in the book. Videos take you on detailed tours of great works of art. Recordings of the music discussed in the book are embedded in the text, usually with listening guides for those of you less than musically literate. If you'd like, you can listen to an audio of the entire text (a helpful guide to pronunciation of foreign-language names), even as you study the images. And there are untold study resources, including everything from highlighting and note-taking tools, to self tests and shared writing prompts. The digital book is designed, in other words, to immerse you in the humanisitic enterprise. I hope you enjoy it.

ABOUT THE AUTHOR

Henry M. Sayre is Distinguished Professor of Art History Emeritus at Oregon State University. He earned his Ph.D. in American Literature from the University of Washington. He is producer and creator of the ten-part television series, *A World of Art: Works in Progress*, aired on PBS in the Fall of 1997; and author of seven books, including *A World of Art*, *The Visual Text of William Carlos Williams*, *The Object of Performance: The American Avant-Garde since 1970*; and an art history book for children, *Cave Paintings to Picasso*.

What's New

THIS NEW EDITION ENHANCES THE LEARNING EXPERIENCE FOR STUDENTS:

To facilitate student learning and understanding of the humanities, this fourth edition is centered on **Learning Objectives** that introduce each chapter. These learning objectives are tailored to the subject matter of the key chapter topics so that the student will be continually reminded of the goals and objectives of study as they progress through each chapter.

The chapter learning objectives are repeated in a **Chapter Review** that poses critical-thinking questions as well as reviewing the material covered in the chapter.

NEW TO THE PRINT EDITION OF *THE HUMANITIES*

- **Continuing Presence of the Past**, a feature designed to underscore the book's emphasis on continuity and change by connecting an artwork in each chapter to a contemporary artwork, helps students understand how the art of the past remains relevant today. Included only in the digital version of the last edition, the **Continuing Presence of the Past** is now featured in each chapter on its own page in close proximity to the artwork to which it refers. New additions to the feature include works by Paul Kos, Hiroshi Sugimoto, Lin-Manuel Miranda, Carrie Mae Weems, Daniel Buren, Arthur Amiotte, and Roy Lichtenstein.
- More than 300 **images have been updated** whenever new and improved images were available or works of art have been cleaned or restored.
- Whenever **new scholarship** has provided us with new insights and understandings, that scholarship has been included in the text. Examples include discussion of the earliest musical instruments—from prehistoric flutes to the development of the organ in Greece and Rome—continuing research at Stonehenge, medical scans of Akhenaten's mummy, new archaeological findings at Teotihuacán, and the workings of the Dutch East India Company in Indonesia.
- In Chapter 10, the discussion of **feudalism** has been refined, and the *Closer Look* on **Krak des Chevaliers** has been restored.
- In Chapter 26, the discussion of **Alexander Hamilton** and the *Federalist* papers has been greatly expanded in order to provide perspective on the current popularity of Lin-Manuel Miranda's *Hamilton: An American Musical*.
- In response to readers' requests, **many new works of art have been added**, including the Göbekli Tepe archaeological site, a Tang tomb figure of a horse, the Inca Twelve-Angle Stone in Cuzco, the *Pitcairn Flight into Egypt* from Saint-Denis, Michelangelo's design for the facade of St. Peter's, Raphael's *Sistine Madonna*, Bronzino's *Saint Sebastian*, Degas's *Little Dancer Aged Fourteen*, Picasso's *Guitar Player* of summer 1910, and Balla's *Speeding Automobile*.
- The last half of **Chapter 40 on contemporary art** has been thoroughly reconceived, with many new images, to address issues of postcolonialism, the global marketplace and the commodification of culture, and the plural self in the Americas—Latino, African American, and Native American—as well as the impact of new media.

New to the Revel edition of *The Humanities*

All of the new material cited in "What's New" on page xii is included in the Revel edition as well, but Revel's cross-platform digital environment allows us to offer many more aids to student learning in an interactive, engaging way.

Revel™ Education technology designed for the way today's students read, think, and learn

When students are engaged deeply, they learn more effectively and perform better in their courses. This simple fact inspired the creation of Revel: an interactive learning experience designed for the way today's students read, think, and learn. Built in collaboration with educators and students nationwide, Revel is a fully digital and highly engaging way to deliver respected Pearson content.

Revel enlivens course content with media interactives and assessments—integrated directly within the authors' narrative that provide opportunities for students to read, practice, and study in one continuous experience. This interactive educational technology boosts student engagement, which leads to better understanding of concepts and improved performance throughout the course.

- **Pan/zooms** appear with a simple click for almost all of the figures, allowing students to zoom in and examine details with stunning clarity and resolution, and then return to the overall view of the work of art, so they can relate these details to the whole.
- The pan/zooms' **scale feature** opens a window where works of art appear next to a scaled human figure (or for small works, a scaled human hand), giving students an instant sense of the size of what they are studying.
- **3D animations of architectural and art-historical techniques** depict and explain processes and methods that are difficult for students to grasp simply through narrative text.
- **Panoramas from global sites** have been integrated into the design, bringing students into the setting, both inside and out, of major buildings and monuments such as the Taj Mahal, Great Zimbabwe, the Paris Opera House, and Frank Lloyd Wright's Fallingwater.
- **Each and every Closer Look and Continuing Presence of the Past** has been transformed into a Revel video presentation, where students are guided through a detailed examination of the work.
- **Listening Guides with Streaming Audio** for most of the music selections in the book are embedded in the platform, which allow students to follow along as they listen to the selection.
- The entire text is available on **streaming audio**, much of it read by the author himself.

In addition, a variety of self-tests, review features, and writing opportunities have been built into the platform. These are all designed to ensure the student's mastery of the material.

- **Multiple-choice self-tests**, at the conclusion of each major section of a chapter, allow the student to assess quickly how well they have absorbed the material at hand.
- **Interactive learning tools**, in a variety of formats, review key terms and ideas, help the student in analyzing literary works, and make use of flashcards to test student retention.
- Each chapter contains three kinds of **writing prompts**. All are keyed to specific works of visual art, literature, or music and appear in conjunction with figures that illustrate the works. **Journaling** prompts focus on building skills of visual analysis; **Shared Writing** responses relate the material in the chapter to today's world; and **Writing Space** prompts encourage students to engage in cross-cultural thinking, often across chapters.

Learn more about Revel www.pearsonhighered.com/revel

Developing *The Humanities*

The Humanities: Culture, Continuity & Change is the result of an extensive development process involving the contributions of over 100 instructors and their students. We are grateful to all who participated in shaping the content, clarity, and design of this text. Manuscript reviewers and focus group participants include:

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No one has been more important in seeing this fourth edition through to production than Helen Ronan. She has no official title, but without her negotiating the intricacies of development between Ohlinger Publishing's work on the Revel edition, Laurence King's work on the print edition, and Pearson as a whole, this edition would today be mired somewhere—I hesitate to think where. With all my thanks, I hereby appoint her Liaison-in-Chief.

Finally, I want to thank, with all my love, my beautiful wife, Sandy Brooke, who has always supported this project in every way. I have said this before, but it continues to be true: She has continued to teach, paint, and write, while urging me on, listening to my struggles, humoring me when I didn't deserve it, and being a far better wife than I was a husband. She was, is, and will continue to be, I trust, the source of my strength.

PART FOUR

Excess, Inquiry, and Restraint

1600–1800

Jacob Jansz. Coeman, *Pieter Cnoll and Cornelia van Nijenrode with Their Daughters and Malay Slaves* (detail), 1665. Oil on canvas, 51⅛" × 75". Rijksmuseum, Amsterdam, SK-A-4062.

For more than 200 years, from the late sixteenth century until the dawn of the nineteenth, the entrenched traditions of culture were challenged as never before. Not just in the West, but around the world, no era had been entangled in such a complex web of competing values. Cultures confronted one another, sometimes absorbing, sometimes rejecting the values of the others they encountered. Slavery was taken for granted, then rejected. Freedom would become the rallying cry of the era, even as despots tried to assert their absolute authority. Indeed, the era began with a civil war and ended with two revolutions. England, in the last half of the sixteenth century, was embroiled in conflict between Catholic and Protestant factions that led to civil war, the execution of a king, and abolition of monarchical authority. Two hundred years later, in the late eighteenth century, the American colonies would rebel against British control, and the French people against their king.

The question of political power—who possessed the right to rule—dominated the age. In the centuries before, the papacy had exercised authority over all people. Now, the rulers of Europe emphatically asserted their divine right to rule with unquestioned authority over their own dominions. In contrast, the thinkers of the age increasingly came to believe that human beings were, by their very nature, free, equal, and independent, and that they were not required to surrender their own sovereignty to any ruler. In essence, these thinkers developed a secularized version of the contest between Catholicism and Protestantism that had defined the sixteenth century after the Reformation. Protestant churches had freed themselves from what they believed to be a tyrannical and extravagant papacy. In fact, many

people found strong similarities between the extravagances of the European monarchies and the extravagance of Rome. Now, many believed, individuals should free themselves from the tyrannical and profligate rule of any government to which they did not freely choose to submit.

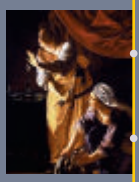
At the beginning of the era, the Counter-Reformation was in full swing, and the Church, out to win back the hearts and minds of all whom the Reformation had drawn away, appealed not just to the intellect, but to the full range of human emotion and feeling. In Rome, it constructed theatrical, even monumental, spaces—not just churches, but avenues, fountains, and plazas—richly decorated in an exuberant style that we have come to call "the Baroque." This dramatic and emotional style found expression in painting and music as well, and artistic virtuosity became the hallmark of this new Baroque style.

The courts of Europe readily adapted the Baroque to their own ends. In France, Louis XIII never missed an opportunity to use art and architecture to impress his grandeur and power upon the French people (and the other courts of Europe). In the arts, the stylistic tensions of the French court were most fully expressed. The rational clarity and moral uprightness of the Classical contrasted with the emotional drama and flamboyant sensuality of the Baroque. In music, for example, we find both the clarity of the Classical symphony and the spectacle of Baroque opera.

At the same time, scientific and philosophical investigation—the invention, for instance, of new tools of observation like the telescope and microscope—helped to sustain a newfound trust in the power of the rational mind to understand the world. When Isaac Newton demonstrated in 1687, to the satisfaction of just about everyone, that the universe was an intelligible system, well-ordered in its operations and guiding principles, it seemed possible that the operations of human society—the production and consumption of manufactured goods, the social organization of families and towns, the operations of national governments, to say nothing of its arts—might be governed by analogous universal laws. The pursuit of these laws is the defining characteristic of the eighteenth century, the period that we have come to call the Enlightenment.

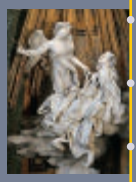
Thus, the age developed into a contest between those who sought to establish a new social order forged by individual freedom and responsibility, and those whose taste favored a decorative and erotic excess—primarily the French court. But even the high-minded champions of freedom found themselves caught up in morally complex dilemmas. Americans championed liberty, but they also defended the institution of slavery. The French would overthrow their dissolute monarch, only to see their society descend into chaos, requiring, in the end, a return to imperial rule. And, when the Europeans encountered other cultures—for example in the South Pacific, China, and India—they tended to impose their own values on cultures that were, in many ways, not even remotely like their own. But if the balance of power fell heavily to the West, increasingly the dynamics of global encounter resulted in an exchange of ideas and values.

PART FOUR TIMELINE



1609–10
Galileo Galilei observes moon's craters

ca. 1625
Artemisia Gentileschi, *Judith and Maidservant with Head of Holofernes*



ca. 1632–48
Taj Mahal

1643–1715
Louis XIV, the "Sun King," reigns

1645–52
Bernini, *The Ecstasy of Saint Teresa*

ca. 1662–64
Johannes Vermeer, *Lady at the Virginal with a Gentleman*

1666
Great Fire of London

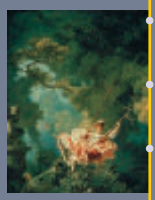
1687
Isaac Newton, *Principia Mathematica*

1719
Daniel Defoe, *Robinson Crusoe*

1721
Johann Sebastian Bach, *Brandenburg Concertos*

1751
William Hogarth, *Gin Lane*

1756–91
Wolfgang Amadeus Mozart



1767
Jean-Honoré Fragonard, *The Swing*

1769
Sydney Parkinson, *Portrait of a Maori*

1770
Captain Cook encounters Aboriginal culture in Australia

1776
James Watt invents steam engine; Declaration of Independence; Adam Smith, *Wealth of Nations*

1778
John Singleton Copley, *Watson and the Shark*

1789
Fall of the Bastille in Paris; Olaudah Equiano's autobiography describes slave living conditions

1791
Pierre-Charles L'Enfant, *Plan for Washington, D.C.*

1792
Mary Wollstonecraft, *Vindication of the Rights of Woman*

1799–1815
Napoleon rules France

21 The Baroque in Italy

The Church and Its Appeal

LEARNING OBJECTIVES

21.1 Discuss how the Baroque style, especially in sculpture and architecture, furthered the agenda of the Counter-Reformation.

21.2 Describe how the Baroque style manifests itself in painting.

21.3 Examine how the Baroque style developed musically in Venice.

As the seventeenth century began, the Catholic Church was struggling to win back those who had been drawn away by the Protestant Reformation. To wage its campaign, the Church took what can best be described as a sensual turn, an appeal not just to the intellect but to the range of human emotion and feeling. This appeal was embodied in an increasingly ornate and grandiose form of expression that came to be known as the Baroque style. Its focal point was the Vatican City, in Rome (Fig. **21.1** and Map **21.1**). The oval colonnade defining St. Peter's Square is considered one of the greatest works of Gianlorenzo Bernini (1598–1680), and it fully captures the grandeur and drama of the Baroque style.

Bernini's curved porticoes, composed of 284 huge Doric columns placed in rows of four, create a vast open space—nearly 800 feet across—designed specifically for its dramatic effect. Bernini considered the colonnade enclosing the square to symbolize "the motherly arms of the Church" embracing its flock. Here, as crowds gathered to receive the blessing of the pope, the architecture dramatized the blessing itself.

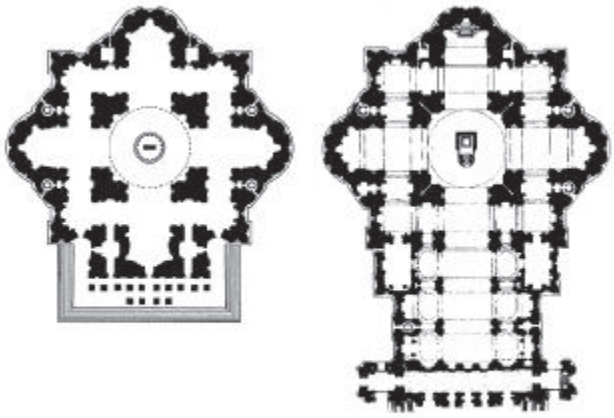
Attention to the way viewers would emotionally experience a work of art is a defining characteristic of the Baroque, a term many believe takes its name from the Portuguese *barroco*, literally a large, irregularly shaped pearl. It was originally used in a derogatory way to imply a style so heavily ornate and strange that it verges on bad taste. The rise of the Baroque is the subject of this chapter. We look at it first as it developed in Rome, and at the Vatican in particular, as a conscious style of art and architecture dedicated to furthering the aims of the Counter-Reformation, then in Venice, which in the seventeenth century was the center of musical activity in Europe.

Just as in the sixteenth century Pope Julius II (papacy 1503–13) had attempted to revitalize Rome as the center of the Christian world by constructing a new St. Peter's Basilica, so at the beginning of the seventeenth century Pope Paul V (papacy 1605–21) began his own monumental changes to St. Peter's, which represented the seat of Roman Catholicism. He commissioned the leading architect of his day, Carlo Maderno (1556–1629), to design a new facade for the building (Fig. **21.2**). The columns on the facade "step out" in three progressively projecting planes: At each corner, two flat, rectangular, engaged columns surround the arched side entrances; inside these, two more sets of fully rounded columns step forward from the wall and flank the rectangular side doors of the portico; and finally four majestic columns, two on each side, support the projecting triangular pediment above the main entrance. Maderno also transformed Michelangelo's central Greek-cross plan into

◀ **Fig. 21.1 St. Peter's Square as seen from Michelangelo's dome, looking east toward the River Tiber.** The long, straight street leading to the Tiber is the Via della Conciliazione, cut by the Fascist dictator Benito Mussolini in the 1930s. Previously, visitors to the Vatican wandered through twisting medieval streets until suddenly they found themselves in the vast, open expanse of the Vatican Square.

Fig. 21.2 Carlo Maderno, facade of St. Peter's Basilica, Vatican, Rome, 1607–15. Originally the end bays of the facade had bell towers, but because St. Peter's stood on marshy ground, with underground springs, the towers cracked, and they had to be demolished.

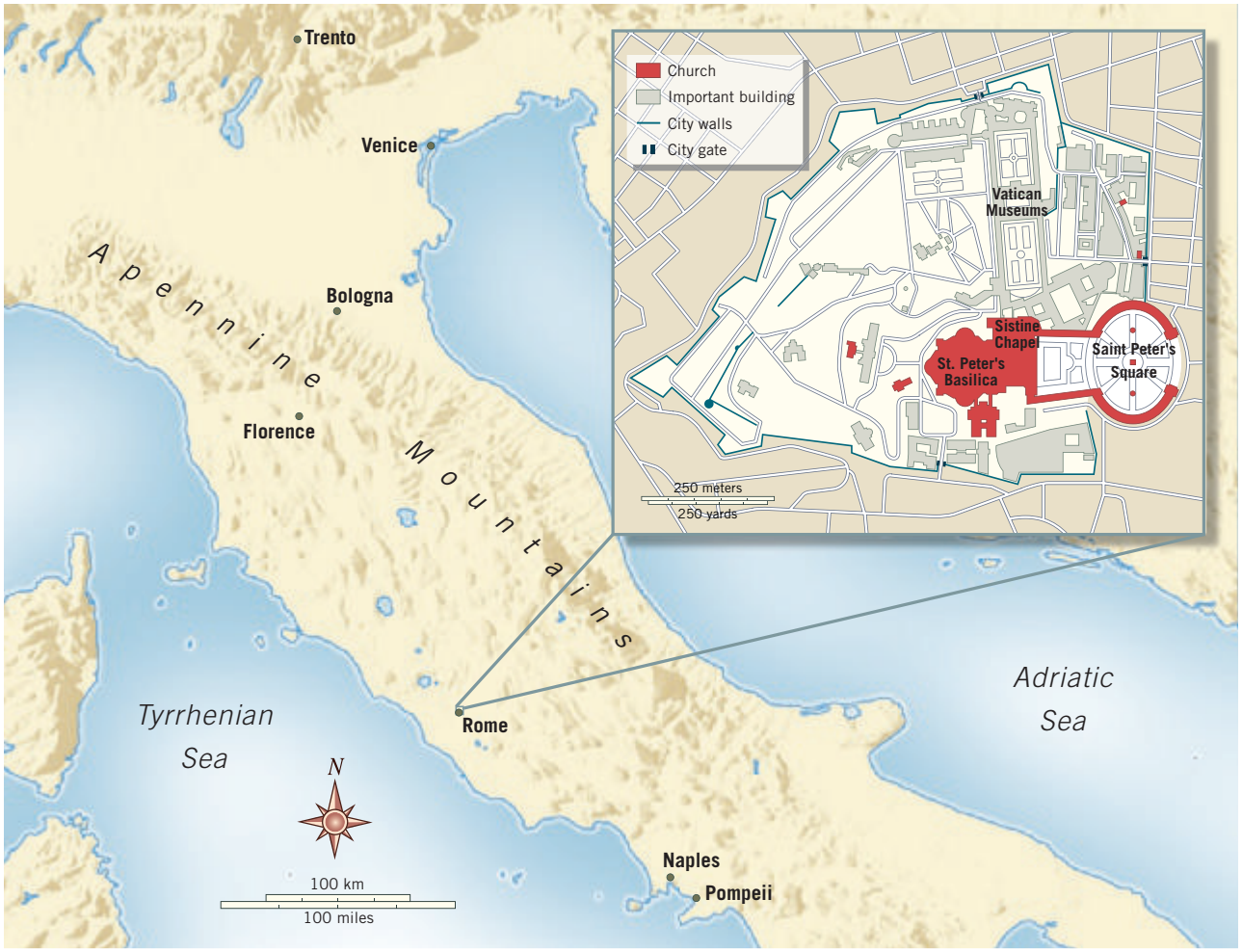
a basilican Latin-cross design, extending the length of the nave to just over 636 feet in order to accommodate the large congregations that gathered to celebrate the elaborate ritual of the new Counter-Reformation liturgy (Fig. **21.3**). The visual impact of this facade, extending across the front of the church to the entire width of Michelangelo's original Greek-cross plan, was carefully conceived to leave viewers in a state of awe. As one writer described the effect in 1652, "Anyone contemplating the new church's majesty and grandeur has to admit … that its beauty must be the work of angels or its immensity the work of giants. Because its magnificent proportions are such that … neither the Greeks, the Egyptians nor the Jews, nor even the mighty Romans ever produced a building as excellent and vast as this one." It was, in short, an embodiment—and an announcement—of the Church's own triumph over the Protestant threat.



Michelangelo, Plan for New Saint Peter's. 1546–64

Maderno, Plan of Saint Peter's Basilica. 1607–12

Fig. 21.3 Left: Michelangelo, plan for New St. Peter's, 1546–64. Right: Carlo Maderno, plan of St. Peter's Basilica, 1607–12. Maderno's plan was motivated by Pope Paul V's belief that St. Peter's should occupy the footprint of the original wooden basilica that had stood in the spot until Pope Julius II tore it down in 1506.



Map 21.1 Vatican City, ca. 1600. From the Vatican City, the pope exercised authority over Rome and the Papal States, most of which were in central Italy.

BAROQUE STYLE AND THE COUNTER-REFORMATION

How did the Baroque style further the agenda of the Counter-Reformation and what are its characteristic features in sculpture and architecture?

As early as the 1540s, the Catholic Church had begun a program of reform and renewal designed to mitigate the appeal of Protestantism that came to be known as the Counter-Reformation (see Chapter 20). The building and decoration programs that developed in response to this religious program gradually evolved into the style known as Baroque. During the Renaissance, composition had tended to be frontal, creating a visual space that moved away from the viewer in parallel planes, following the rules of scientific perspective. This produced a sense of calm and balance or symmetry. In the Baroque period, elements usually are placed on a diagonal and seem to swirl and flow into one another, producing a sense of action, excitement, and sensuality. Dramatic contrasts of light and dark often serve to create theatrical effects designed to move viewers and draw them into the emotional orbit of the composition. A profound, sometimes brutally direct, naturalism prevails, as well as a taste for increasingly elaborate and decorative effects, testifying to the Baroque artist's technical skill and mastery of the media used.

In Rome, the patronage of the papal court at the Vatican was most responsible for creating the Baroque style. Pope Sixtus V (papacy 1585–90) inaugurated the renewal of the city. He cut long, straight avenues through it, linking the major pilgrimage churches to one another, and ordered a piazza—a space surrounded by buildings—to be opened in front of each church, decorating many of them with obelisks that had originally been brought to the city from Egypt by the ancient Roman emperors. In his brief reign, Sixtus also began to renovate the Vatican, completing the dome of St. Peter's Basilica, building numerous palaces throughout the city, and successfully reopening one of the city's ancient aqueducts to stabilize the water supply. Over the course of the next century, subsequent popes followed his example with building and art programs of their own.

Sculpture and Architecture: Bernini and His Followers

The new interior space of St. Peter's Basilica inspired the same feelings of vastness and grandeur as did Carlo Maderno's new facade. The crossing, under Michelangelo's dome, was immense, and its huge size dwarfed the main altar. When Urban VIII (papacy 1623–44) became pope, he commissioned the young Bernini to design a cast bronze **baldachino**, or canopy, to help define the altar space (Fig. **21.4**). Part architecture, part sculpture, Bernini's baldachino consists of four twisted columns decorated with spiraling grooves and bronze vines. This undulating, spiraling, decorative effect symbolized the union of the Old and New Testaments, the vine of the Eucharist climbing the columns of the Temple of Solomon. Elements that combine both the Ionic and Corinthian orders top the columns. Figures of angels and *putti* stand along the entablature, which is decorated with tasseled panels of bronze that imitate cloth. Above the entablature, the baldachino rises crownlike to an orb, symbolizing the universe, and is topped by a cross, symbolizing the reign of Christ. In its immense size, its realization of an architectural plan in sculptural terms, and its synthesis of a wide variety of symbolic elements in a single form, the baldachino is uniquely Baroque in spirit.

The Cornaro Chapel Probably nothing sums up the Baroque movement better than Bernini's sculptural program for the Cornaro Chapel. Located in Carlo Maderno's Church of Santa Maria della Vittoria in Rome (Fig. **21.5**), it was a commission from the Cornaro family and executed by Bernini in the middle of the century, at about the same time as he was working on the colonnade for St. Peter's Square. Bernini's theme is a pivotal moment in the life of Teresa of Ávila (1515–82), a Spanish nun, eventually made a saint, who at the age of 40 began to experience mystical religious visions (see the discussion of the Spanish Inquisition in Chapter 20). She was by no means the first woman to experience such visions—Hildegard of Bingen had recorded similar visions in her *Scivias* in the twelfth century (see Chapter 10). However, Teresa's own *converso* background—her father was a Jew who had converted to Catholicism—added another dimension to her faith. Teresa was steeped in the mystical tradition of the Jewish Kabbalah, the brand of mystical Jewish thought that seeks to attain the perfection of heaven while still living in this world by transcending the boundaries of time and space. Bernini illustrates the vision she describes in the following passage (**Reading 21.1**):

READING 21.1

from Teresa of Ávila, "Visions," Chapter 29 of *The Life of Teresa of Ávila* (before 1567)

It pleased the Lord that I should sometimes see the following vision. I would see beside me, on my left hand, an angel in bodily form. … He was not tall, but short, and very beautiful, his face so aflame that he appeared to be one of the highest types of angel who seem to be all afire. They must be those who are called cherubim; they do not tell me their names but I am well aware that there is a great difference between certain angels and others, and between these and others still, of a kind that I could not possibly explain. In his hands I saw a long golden spear and at the end of the iron tip I seemed to see a point of fire. With this he seemed to pierce my heart several times so that it penetrated to my entrails. When he drew it out, I thought he was drawing them out with it and he left me completely afire with a great love for God. The pain was so sharp that it made me utter several moans; and so excessive was the sweetness caused me by this intense pain that one can never wish to lose it, nor will one's soul be content with anything less than God. It is not bodily pain, but spiritual, though the body has a share in it—indeed, a great share. So sweet are the colloquies of love which pass between the soul and God that if anyone thinks I am lying I beseech God, in His goodness, to give him the same experience.

Fig. 21.4 Gianlorenzo Bernini, baldachino at crossing of St. Peter's Basilica, Vatican, Rome, 1624–33. Gilt bronze, height approx. 100'. So grand is the space, and so well does Bernini's baldachino fit in it, that the viewer can scarcely recognize that the structure is the height of the tallest apartment buildings in seventeenth-century Rome.

Fig. 21.6 Gianlorenzo Bernini, *The Ecstasy of Saint Teresa*, Cornaro Chapel, Santa Maria della Vittoria, Rome, 1645–52. Marble, height of group, 11'6".

Fig. 21.5 Gianlorenzo Bernini, Cornaro Chapel, Santa Maria della Vittoria, Rome, 1642–52. The Cornaro family portraits are just visible on the left and right walls of the chapel.

Bernini recognized in Teresa's words a thinly veiled description of sexual orgasm. And he recognized as well that the sexuality that Protestantism and the Catholic Counter-Reformation had deemed inappropriate to religious art, but which had survived in Mannerism, had found, in Saint Teresa's vision, a properly religious context, uniting the physical and the spiritual. Thus, the sculptural centerpiece of his chapel decoration is Teresa's implicitly erotic swoon, the angel standing over her, having just withdrawn his penetrating arrow from her "entrails," as Teresa throws her head back in ecstasy (Fig. **21.6**).

Bernini's program is far more elaborate than just its sculptural centerpiece. The angel and Teresa are positioned beneath a marble canopy from which gilded rays of light radiate, following the path of the real light entering the chapel from the glazed yellow panes of a window hidden from view behind the canopy pediment. Painted angels, sculpted in stucco relief, descend across the ceiling, bathed in a similarly yellow light that appears to emanate from the dove of Christ at the top center of the composition. On each side of the chapel, life-size marble recreations of the Cornaro family lean out of what appear to be theater boxes into the chapel proper, as if witnessing the vision of Saint Teresa for themselves. Indeed, Bernini's chapel is nothing less than high drama, the stage space of not merely religious vision, but visionary spectacle. Here is an art designed to appeal to the feelings and emotions of its viewers and draw them emotionally into the theatrical space of the work.

Bernini's *David* The Cornaro Chapel program suggests that the Baroque style is fundamentally theatrical in character, and the space it creates is theatrical space. It also demonstrates how central action was to Baroque representation. Bernini's *David* (Fig. **21.7**), which was commissioned by a nephew of Pope Paul V, appears to be an intentional contrast to Michelangelo's sculpture of the same subject (see Fig. 14.30). Michelangelo's hero is at rest, in a moment of calm anticipation before confronting Goliath. In contrast, Bernini's sculpture captures the young hero in the midst of action. David's body twists in an elaborate spiral, creating dramatic contrasts of light and shadow. His teeth are clenched, and his muscles strain as he prepares to launch the fatal rock. So real is his intensity that viewers tend to avoid standing directly in front of the sculpture, moving to one side or the other in order, apparently, to avoid being caught in the path of David's shot.

In part, David's action defines Bernini's Baroque style. Whereas Michelangelo's *David* seems to contemplate his own prowess, his mind turned inward, Bernini's *David* turns outward, into the viewer's space, as if Goliath were a presence, although unseen, in the sculpture. In other words, the sculpture is not self-contained, and its active relationship with the space surrounding it—often referred to as its **invisible complement**—is an important feature of Baroque art. (The light source in his Cornaro Chapel *Saint Teresa* is another invisible complement.)

Fig. 21.7 Gianlorenzo Bernini, *David*, 1623. Marble, height 5'7". Galleria Borghese, Rome. Bernini carved this work when he was 25 years old, but he was already carving sculptures of remarkable quality by age 8.

Bernini's Fountains Bernini was responsible for a series of figurative fountains that changed the face of Rome. One of the most celebrated is the *Four Rivers Fountain* in the Piazza Navona (Fig. **21.8**). Bernini designed the fountain for Pope Innocent X, who commissioned it in 1648 to celebrate his diversion of the water from one of Rome's oldest sources of drinking water, the Acqua Vergine aqueduct, to the square in front of the Palazzo Pamphili, his principal family residence. Rising above the fountain is an Egyptian obelisk that had lain in pieces in the Circus Maxentius until restored and re-erected for use here. The sculptor intended the obelisk to represent the triumph of the Roman Catholic Church over the rivers of the world, represented by the four large figures lying on the stones below—the Danube for Europe, the Nile for Africa, the Ganges for Asia, and the Plata for the Americas.

Bernini's fountain was executed by a large group of co-workers under his supervision. In fact, it became commonplace during the Baroque era for leading artists to employ numbers of skilled artists in their studios. This allowed an artist of great stature to turn out massive quantities of work without any apparent loss in quality. Bernini and other Baroque artists like him were admired not so much for the actual finished work, but for the originality of their concepts or designs.

In fact, Bernini spent much of his time writing plays and designing stage sets for his co-workers to perform. Only one of his theatrical works survives, a farcical comedy, but we have descriptions of others that suggest Bernini's complete dedication to involving the audience in the theatrical event. In a play entitled *Inundation of the Tiber*, he constructed an elaborate set of dikes and dams that seemed to give way as the flooding Tiber advanced from the back of the stage toward the audience. "When the water broke through the last dike," Bernini's biographer tells us, "it flowed forward with such a rush and spread so much terror among the spectators that there was no one, not even among the most knowledgeable, who did not quickly get up to leave in the fear of an actual flood. Then, suddenly, with the opening of a sluice gate, all the water was drained away."

The Society of Jesus

As Bernini conceived it, the Baroque was a compromise between Mannerist exuberance and religious propriety. He fully supported the edicts of the Council of Trent, set up to reform the Catholic Church in response to the Protestant Reformation (see Chapter 20), and the teachings of the Society of Jesus, founded by the Spanish nobleman

Fig. 21.8 Gianlorenzo Bernini, *Four Rivers Fountain*, Rome, 1648–51. Each major figure was sculpted by a different artist in Bernini's workshop: the Nile, representing Africa, by Jacopo Antonio Fancelli; the Danube, representing Europe, by Antonio Raggi; the Ganges, representing Asia, by Claude Poussin; and the Plata, representing the Americas, by Francesco Baratta.

Ignatius of Loyola (1491–1556). From their headquarters at the Church of Il Gesù in Rome, the Jesuits, as they were known, led the Counter-Reformation and, as we will see later in the chapter, the influence of the Catholic Church worldwide. All agreed that the purpose of religious art was to teach and inspire the faithful, that it should always be intelligible and realistic, and that it should be an emotional stimulus to piety.

Originally, Michelangelo had agreed, in 1554, to produce drawings and a model for Il Gesù, and although no trace of these survives, the facade (Fig. **21.9**), finally designed by Giacomo della Porta (ca. 1533–1602), reflects a certain Michelangelo flair, especially in the swirled volute scrolls flanking the second level, reminiscent of the stairway of the Laurentian Library in Florence (see Fig. 15.21). Likewise, della Porta's use of double pilasters (and, surrounding the portal, a double pilaster and column) is reminiscent of both the double pilasters in Michelangelo's original design for St. Peter's and the double columns surrounding the stairway of the Laurentian Library. Such doubling lends the facade a sense of massive sturdiness—a kind of architectural self-confidence—and a sculptural presence, a three-dimensional play of surfaces in contrast to the two-dimensional effects of the typical Renaissance facade (see *Materials & Techniques*, page 717).

The forcefulness and muscularity of della Porta's design is consistent with Jesuit doctrine. In his *Spiritual Exercises*, published in 1548, Loyola had called on Jesuits to develop all of their senses. By engaging the body, he believed, one might begin to perfect the soul—an idea that surely influenced the many and richly diverse elements of the Baroque style. For instance, in the Fifth Exercise, which is a meditation on the meaning of hell, Loyola invokes all five senses (**Reading 21.2a**):

READING 21.2a

from Ignatius of Loyola, *Spiritual Exercises*, Fifth Exercise (1548)

FIRST POINT: This will be to see in imagination the vast fires, and the souls enclosed, as it were, in bodies of fire.
SECOND POINT: To hear the wailing, the howling, cries, and blasphemies against Christ our Lord and against His saints.
THIRD POINT: With the sense of smell to perceive the smoke, the sulphur, the filth, and corruption.
FOURTH POINT: To taste the bitterness of tears, sadness, and remorse of conscience.
FIFTH POINT: With the sense of touch to feel the flames which envelop and burn the souls.

Such a call to the senses would manifest itself in increasingly elaborate church decoration, epitomized, perhaps best, by a ceiling fresco painted by Andrea Pozzo (1642–1709) for the Church of Sant'Ignazio in Rome depicting the *Triumph of Saint Ignatius of Loyola* (see *Closer Look*, pages 718–19). But despite this call to sensual experience, Loyola was a strict traditionalist, as is demonstrated by his set of rules for those who comprise what is known as the Church Militant—that is, the living members of the Church who are struggling against sin, so that they may one day join those who comprise the Church Triumphant, those who are in heaven (**Reading 21.2b**):

Fig. 21.9 Giacomo della Porta, facade of Il Gesù, Rome, ca. 1575–84. The church originally appeared much plainer—the sculptures are sixteenth-century additions.

READING 21.2b

from Ignatius of Loyola, *Spiritual Exercises*, Rules (1548)

RULES FOR THINKING WITH THE CHURCH
The following rules should be observed to foster the true attitude of mind we ought to have in the church militant

1. We must put aside all judgment of our own, and keep the mind ever ready and prompt to obey in all things the true Spouse of Christ our Lord, our holy Mother, the hierarchical Church.
2. We should praise sacramental confession, the yearly reception of the Most Blessed Sacrament, and praise more highly monthly reception, and still more weekly Communion, provided requisite and proper dispositions are present.
3. We ought to praise the frequent hearing of Mass, the singing of hymns, psalmody, and long prayers whether in the church or outside; likewise, the hours arranged at fixed times for the whole Divine Office, for every kind of prayer, and for the canonical hours.

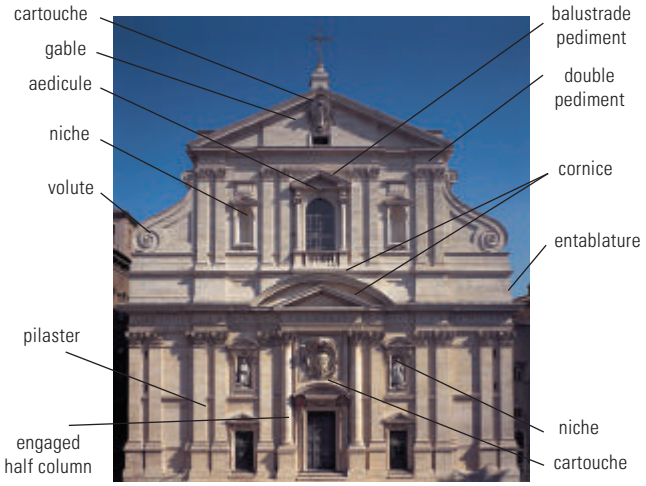
Materials & Techniques

The Facade from Renaissance to Baroque

Typically the facade of a building carries architectural embellishment that announces its style. One of the most influential facades in Renaissance architecture is Leon Battista Alberti's for Santa Maria Novella in Florence. Limited only by the existing portal, doors, and rose window, Alberti designed the facade independently of the structure behind it. He composed it of three squares, two flanking the portal at the bottom and a third set centrally above them. A mezzanine, or low intermediate story, separates them, at once seemingly supported by four large engaged Corinthian columns and serving as the base of the top square. The pediment at the top actually floats free of the structure behind it. Perhaps Alberti's most innovative and influential additions are the two scrolled **volutes**, or counter-curves. They hide the clerestory structure of the church behind, masking the difference in height of the nave and the much lower side-aisle roofs.

Giacomo della Porta's facade for the church of Il Gesù in Rome, constructed more than 100 years later, is still recognizably indebted to Alberti's church, retaining the classic proportions of Renaissance architecture: The height of the structure equals the width. However, it has many more architectural features, and is considered by many the first architectural manifestation of the Baroque. Notice that the architect adds dimensionality to the facade by a projecting entablature and supporting pairs of engaged **pilasters** (rectangular columns) that move forward in steps. These culminate in engaged circular columns on each side of the portal. A double pediment, one traditional and triangular, the other curved, crowns the portal itself. Together with the framing column, the double pediment draws attention to the portal, the effect of which is repeated in miniature in the **aedicule** (composed of an entablature and pediment supported by columns or pilasters) above.

Leon Battista Alberti, facade of Santa Maria Novella, Florence, 1458–70.



Giacomo della Porta, facade of Il Gesù, Rome, ca. 1575–84.

4. We must praise highly religious life, virginity, and continency; and matrimony ought not be praised as much as any of these.
5. We should praise vows of religion, obedience, poverty, chastity, and vows to perform other works of supererogation conducive to perfection. However, it must be remembered that a vow deals with matters that lead us closer to evangelical perfection. Hence, whatever tends to withdraw one from perfection may not be made the object of a vow, for example, a business career, the married state, and so forth.
6. We should show our esteem for the relics of the saints by venerating them and praying to the saints. We should praise visits to the Station Churches, pilgrimages, indulgences, jubilees, crusade indults, and the lighting of candles in churches.

7. We must praise the regulations of the Church with regard to fast and abstinence, for example, in Lent, on Ember Days, Vigils, Fridays, and Saturdays. We should praise works of penance, not only those that are interior but also those that are exterior.
8. We ought to praise not only the building and adornment of churches, but also images and veneration of them according to the subject they represent.
9. Finally, we must praise all the commandments of the Church, and be on the alert to find reasons to defend them, and by no means in order to criticize them. …
13. If we wish to proceed securely in all things, we must hold fast to the following principle: What seems to me white, I will believe black if the hierarchical Church so defines. …

CLOSER LOOK

By the middle of the seventeenth century, one of the techniques most widely used by Baroque painters was foreshortening, a technique in which perspective is modified in order to decrease the distortion that results when a figure or object extends backward from the picture plane at an angle approaching the perpendicular (for instance, a hand extended out to the viewer will look larger, and the arm shorter, than they actually are). With this technique, artists could break down the barrier between the painting's space and that of the viewer, thus enveloping the viewer in the painting's space, an effect favored for painting the ceilings of Baroque churches and palaces. To create this illusion, the artist would paint representations of architectural elements—such as vaults or arches or niches—and then fill the remaining space with foreshortened figures that seem to fly out of the top of the building into the heavens above. One of the most dramatic instances was painted by a Jesuit lay brother, Fra Andrea Pozzo, for the Church of Sant'Ignazio. Its subject is the *Triumph of Saint Ignatius of Loyola*.

It is difficult for a visitor to Sant'Ignazio to tell that the space above the nave is a barrel vault. Pozzo painted it over with a rising architecture that seems to extend the interior walls an extra story and then explode into the open sky above. A white marble square in the pavement below indicates to the viewer just where to stand to appreciate the perspective properly. On each side of the space overhead are allegorical figures representing the four continents. Inscriptions on each end of the ceiling read, in Latin, "I am come to send fire on the earth," Christ's words to Luke (Luke 12:49), and Ignatius's last words to Francis Xavier as he set out on his mission to Asia, "Go and set the world aflame." Both passages are plays on Ignatius's name and the Latin word for fire, *ignis*, but both also refer to the Jesuit belief in the power of the gospel to transform the world.

Fra Andrea Pozzo, *Triumph of Saint Ignatius of Loyola*, Sant'Ignazio, Rome, 1691–94. Ceiling fresco, approx. 56' × 115'.

America sits on a cougar, spear in hand, and wearing a feathered headdress.

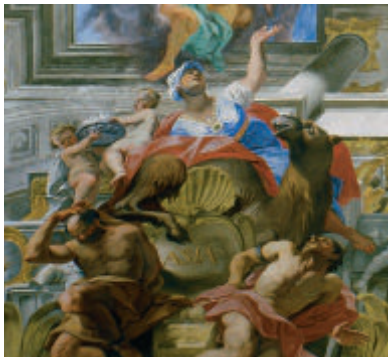
Saint Ignatius follows Christ into heaven, beams of light emanating from his chest to the four corners of the globe.

Europe, sitting on a stallion, holds a scepter in one hand, while her other rests on an orb, signifying her domination of the world.

Andrea Pozzo's *Triumph of Saint Ignatius of Loyola*

Africa sits atop a crocodile and holds an elephant tusk in her hand.

Saint Francis Xavier, co-founder of the Jesuits, left Portugal in 1541 for India, Indonesia, Japan, and China, where he died in 1552. He was the model for all subsequent Jesuit missionary zeal.



Asia rides a camel, while the small *putti* to the left offer her a blue-and-white porcelain bowl, presumably from China.

Loyola's rules are a clear response to the attacks and positions taken up by the Protestant Reformation. They are a call for a discipline that many in the Church seemed to have forgotten, but, perhaps above all, they ask—particularly in Rule 13—for unquestioning submission to Church doctrine, something the Reformation, from the Catholic point of view, had forsaken altogether. Thus, on the one hand, Loyola encouraged the sensual ornamentation of the Church, while he called for an austere intellectual discipline on the other.

San Carlo alle Quattro Fontane

Thus it was the grandiose, the elaborate, the ornate—all used to involve the audience in a dramatic action—that came to characterize the Baroque style of the Counter-Reformation. Yet another characteristic style was surprise. Perhaps the most stunning demonstration of this principle is the Church of San Carlo alle Quattro Fontane (Saint Charles at the Four Fountains) (Fig. **21.10**), the work of Bernini's pupil Francesco Borromini (1599–1667). In undertaking this church, Borromini was challenged by a narrow property, its corner cut off for one of the four fountains from which the church takes its name. The nave is a long, oval space—unique in church design—with curved walls and chapels that create an uncanny feeling of movement, as if the walls are breathing in and out (Fig. **21.11**). The dome seems to float above the space. Borromini achieved this effect by inserting windows, partially hidden, at the base of the dome. Light coming through illuminates coffers of alternating hexagons, octagons, and crosses, growing smaller as they approach the apex so that they appear to ascend to a much greater height than they actually do (Fig. **21.12**).

Fig. 21.11 Francesco Borromini, plan of San Carlo alle Quattro Fontane, Rome, 1638.

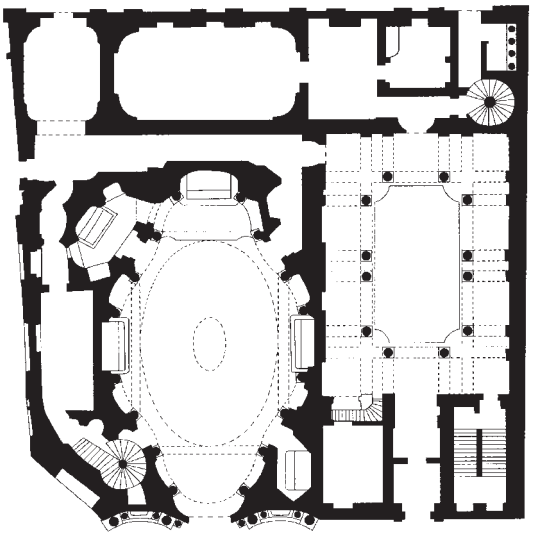


Fig. 21.10 Francesco Borromini, facade of San Carlo alle Quattro Fontane, Rome, 1665–67. Borromini's innovative church had little impact on Italian architecture, but across the rest of Europe it freed architecture from the rigors of Renaissance symmetry and balance.

Fig. 21.12 Francesco Borromini, dome of San Carlo alle Quattro Fontane, Rome, 1638–41. At the top of the dome is a golden dove. A symbol of the Holy Spirit, it seems about to fly out of the roof to the heavens above.

The church facade is equally bold (see Fig. 21.10). In Baroque church architecture, the facade would increasingly leave the Renaissance traditions of architecture behind, replacing the clarity and balance of someone like Alberti with increasingly elaborate ornamentation (see *Materials & Techniques*, page 717). San Carlo's facade is distinguished by colossal columns and concave niches, oval windows on the first floor and square ones above, all topped by a decorative railing, or **balustrade**, that peaks over a giant **cartouche** (oval frame) supported by angels who seem to hover free of the wall. One four-sided and pointed tower sits oddly at the corner above the fountain; another tower, five-sided, rounded, and slightly taller, stands over the middle of the structure. The balance and symmetry that dominated church architecture since the early Renaissance are banished. In their stead is a new sense of the building as a living thing, as an opportunity for innovation and freedom. So liberating, in fact, was the design of San Carlo alle Quattro Fontane that Church Fathers answered requests for its plan from all over Europe.

THE DRAMA OF PAINTING: CARAVAGGIO AND THE CARAVAGGISTI

What characterizes Baroque painting?

One of the characteristics of San Carlo alle Quattro Fontane is the play of light and dark that its irregular walls and geometries create. Ever since the Middle Ages, when Abbot Suger of Saint-Denis, Paris, had insisted on the power of light to heighten spiritual feeling in the congregation, particularly through the use of stained glass, light had played an important role in church architecture (see Chapter 12). Bernini used it to great effect in his *Ecstasy of Saint Teresa* (see Fig. 21.6), and Baroque painters, seeking to intensify the viewer's experience of their paintings, sought to manipulate light and dark to great advantage as well. The acknowledged master of light and dark, and perhaps the most influential painter of his day, was Michelangelo Merisi, known as Caravaggio (1571–1610) after the town in northern Italy where he was born. His work inspired many followers, who were called the Caravaggisti.

Master of Light and Dark: Caravaggio

Caravaggio arrived in Rome in about 1593 and began a career of revolutionary painting and public scandal. His first major commission in Rome was *The Calling of Saint Matthew* (Fig. **21.13**), arranged by his influential patron

Fig. 21.13 Caravaggio, *The Calling of Saint Matthew*, ca. 1599–1600. Oil on canvas, 11'1" × 11'5". Contarelli Chapel, San Luigi dei Francesi, Rome. The window at the top of the painting is covered by parchment, often used by painters to diffuse light in their studios. This makes the intensity of light entering the room from the right especially remarkable.

Cardinal del Monte and painted about 1599 to 1600 for the Contarelli Chapel in the Church of San Luigi dei Francesi, the church of the French community (dei Francesi) in Rome. The most dramatic element in this work is light. The light that streams in from an unseen window at the upper right of the painting is almost palpable. It falls onto the table where the tax collector Levi (Saint Matthew's name before becoming one of Jesus' apostles) and his four assistants count the day's take, highlighting their faces and gestures. They are dressed in a style not of Jesus' time, but of Caravaggio's, making it more possible for his audience to identify with them. With Saint Peter at his side, Christ enters from the right, a halo barely visible above his head. He reaches out with his index finger extended in a gesture derived from Adam's gesture toward God in the Sistine Chapel ceiling *Creation*—an homage, doubtless, by the painter to his namesake (see Fig. 15.11). One of the figures at the table—it is surely Levi, given his central place in the composition—points with his left hand, perhaps at himself, as if to say, "Who, me?," or perhaps at the young man bent over at the corner of the table intently counting money, as if to say, "You mean him?" All in all, he seems to find the arrival of Jesus uninteresting. In fact, the assembled group is so ordinary—reminiscent of gamblers seated around a table—that the transformation of Levi into Saint Matthew, which is imminent, takes on the aspect of a miracle, just as the light flooding the scene is reminiscent of the original miracle of Creation: "And God said, 'Let there be light: and there was light'" (Genesis 1:3). The scene also echoes the New Testament, specifically John 8:12, where Christ says: "I am the light of the world; he that followeth me shall not walk in darkness, but shall have the light of life."

Caravaggio's insistence on the reality of his scene is thus twofold: He not only depicts real people of his own day engaged in real tasks (by implication, Christ himself assumes a human reality as well), but he also insists on the reality of its psychological drama. The revelatory power of light—its ability to reveal the world in all its detail—is analogous, in Caravaggio's painting, to the transformative power of faith. Faith, for Caravaggio, fundamentally changes the way we see the world, and the way we *act* in it. Time and again, his paintings dramatize this moment of conversion through use of the technique known as **tenebrism**. As opposed to *chiaroscuro*, which many artists employ to create spatial depth and volumetric forms through slight gradations of light and dark, a tenebrist style

Fig. 21.14 Caravaggio, *Conversion of Saint Paul*, ca. 1601. Oil on canvas, 90½" × 68⅞". Santa Maria del Popolo, Rome. This painting was designed to fill the right wall of the narrow Carasi family chapel in Santa Maria del Popolo. Caravaggio had to paint it to be seen at an angle of about 45 degrees, a viewpoint that can be replicated by tipping this page inward about half open to an angle of 45 degrees to the reader's face. The resulting space is even more dramatic and dynamic.

is not necessarily connected to modeling at all. Tenebrism makes use of large areas of dark contrasting sharply with smaller brightly illuminated areas. In *The Calling of Saint Matthew*, Christ's hand and face rise up out of the darkness, as if his very gesture creates light itself—and by extension Matthew's salvation.

The Baroque and Sexuality: Caravaggio and the Metaphysical Poetry of John Donne

One of the clearest instances of Caravaggio's use of light to dramatize moments of conversion is the *Conversion of Saint Paul*, painted around 1601 (Fig. **21.14**). Although it was painted nearly 50 years before Bernini's *Ecstasy of Saint Teresa* (see Fig. 21.6), its theme is essentially the same, as is its implied sexuality. Here, Caravaggio portrays the moment when the Roman legionnaire Saul (who will become Saint Paul) has fallen off his horse and hears the words, "Saul, Saul, why persecutest thou me?" (Acts 9:4). Neither Saul's servant nor his horse hears a thing. Light, the visible manifestation of Christ's words, falls on the foreshortened soldier. Saul reaches into the air in both a shock of recognition and a gesture of embrace. A sonnet, "Batter My Heart," by the English metaphysical poet John Donne (1572–1631), published in 1618 in his *Holy Sonnets*, captures Saul's experience in words (**Reading 21.3**):

READING 21.3

John Donne, "Batter My Heart" (1618)

Batter my heart, three-person'd God, for you
As yet but knock, breathe, shine, and seek to mend;
That I may rise and stand, o'erthrow me, and bend
Your force to break, blow, burn, and make me new.
I, like an usurp'd town to'another due,
Labor to'admit you, but oh, to no end;
Reason, your viceroy in me, me should defend,
But is captiv'd, and proves weak or untrue.
Yet dearly' I love you, and would be lov'd fain,
But am betroth'd unto your enemy;
Divorce me,'untie or break that knot again,
Take me to you, imprison me, for I,
Except you'enthrall me, never shall be free,
Nor ever chaste, except you ravish me.

There is no reason to believe that the English poet—who was raised a Catholic but converted to the Anglican Church for his own safety and prosperity—knew the Italian's painting, but the fact that the two men share so completely in the ecstasy of the moment of conversion, imaged as physical ravishment, suggests how widespread such conceits were in the seventeenth century. Both share with Teresa of Ávila a profound mysticism, the pursuit of achieving communion or identity with the divine through direct experience, intuition, or insight. All three believe that such experience is the ultimate source of knowledge or understanding, and they seek to convey that in their art. Such mystical experience, in its extreme physicality and naturalistic representation, also suggests how deeply the Baroque as a style was committed to sensual experience.

Fig. 21.15 Caravaggio, *Bacchus*, ca. 1597. Oil on canvas, 37⅜" × 33½". Galleria degli Uffizi, Florence. One of the ways in which Caravaggio exhibits his skill in this painting is in his treatment of the handle of the wine goblet held by the boy. It is at once volumetric and transparent.

Caravaggio would openly pursue this theme in a series of homoerotic paintings commissioned by the same Cardinal del Monte who arranged for the painting of *The Calling of Saint Matthew*. These paintings depict seminude young men, quite clearly youths from the streets of Rome, dressed in Bacchic costume. In his *Bacchus* (Fig. **21.15**), the slightly plump but also attractively muscular boy offers the viewer a glass of wine at the same time that he seems, with his right hand, to be undoing the belt of his robe. This is not the mythic Bacchus, but a boy dressed up as Bacchus, probably pulled off the street by Caravaggio to pose, as the dirt beneath his fingernails attests. The bowl of fruit in the foreground is a still life that suggests not only Caravaggio's virtuosity as a naturalistic painter, but, along with the wine, the pleasures of indulging the sensual appetites and, with them, carnal pleasure. In fact, paintings such as this one suggest that Caravaggio transformed the religious paintings for which he received commissions into images that he preferred to paint—scenes of everyday people, of erotic and dramatic appeal, and physical (not spiritual) beauty. These same appetites are openly celebrated, in the same spirit, in many of John Donne's poems, such as "The Flea" (see **Reading 21.4**, page 733).

Elisabetta Sirani and Artemisia Gentileschi: Caravaggisti Women

Caravaggio had a profound influence on other artists of the seventeenth century. Two of these were women. Like her sixteenth-century Bolognese predecessor, Lavinia Fontana (see Chapter 20), Elisabetta Sirani (1638–65) was the daughter of a painter. Although trained in the refined, Classical tradition, Sirani developed a taste for realism much like Caravaggio's and shared his willingness to depict the miracles of Christianity as if they were everyday events. Most of her paintings were for private patrons, and she produced more than 190 works before her early death at age 27; by then she had become a cultural hero and tourist attraction in Bologna for the easy way she could dash off a picture. She painted portraits, religious works, allegorical works, and occasionally mythological works and stories from ancient history.

Sirani's *Virgin and Child* of 1663 portrays Mary as a young Italian mother, wearing a turban of the kind favored by Bolognese peasant women (Fig. **21.16**). The Virgin's white sleeve, thickly painted to emphasize the rough texture of homespun wool, is consistent with the lack of ornamentation in the painting as a whole. The only decorative elements are the pillow on which the baby sits and the garland with which he is about to crown his mother, in a gesture that seems nothing more than playful.

One of Caravaggio's most important followers, and one of the first women artists to achieve an international reputation, was Artemisia Gentileschi (1593–1652/3). Born in Rome, she was raised by her father, Orazio, himself a painter and Caravaggisti. Orazio was among Caravaggio's closest friends. As a young girl, Artemisia could not have helped but hear of Caravaggio's frequent run-ins with the law—for throwing a plate of artichokes at a waiter, for street brawling, for carrying weapons illegally, and, ultimately, in 1606, for murdering a referee in a tennis match. Artemisia's own scandal would follow. It and much of her painting must be understood within the context of this social milieu—the loosely renegade world of Roman artists at the start of the seventeenth century. In 1612, when she was 19, she was raped by Agostino Tassi, a Florentine artist who worked in her father's studio and served as her teacher. Orazio filed suit against Tassi for injury and damage to his daughter. The transcript of the seven-month trial survives. Artemisia accused Tassi of repeatedly trying to meet with her alone in her bedroom and, when he finally succeeded, of raping her. When he subsequently promised to marry her, she freely accepted his continued advances, naïvely assuming marriage would follow. When he refused to marry her, the lawsuit followed.

At trial, Tassi accused her of having slept with many others before him. Gentileschi was tortured with

Fig. 21.16 Elisabetta Sirani, *Virgin and Child*, 1663. Oil on canvas, 34" × 27½". National Museum of Women in the Arts, Washington, D.C. Gift of Wallace and Wilhelmina Holladay. Conservation funds generously provided by the Southern California State Committee of the National Museum of Women in the Arts. The artist signed and dated this picture in gold letters as if sewn into the horizontal seam of the pillow.

thumbscrews to "prove" the validity of her testimony, and was examined by midwives to ascertain how recently she had lost her virginity. Tassi further humiliated her by claiming that Artemisia was an unskilled artist who did not even understand the laws of perspective. Finally, a former friend of Tassi's testified that Tassi had boasted about his exploits with Artemisia. Ultimately, he was convicted of rape but served only a year in prison. Soon after the long trial ended, Artemisia married an artist and moved with him to Florence. In 1616, she was admitted to the Florentine Academy of Design.

Beginning in 1612, Artemisia painted five separate versions of the biblical story of Judith and Holofernes. The subject was especially popular in Florence, which identified with both the Jewish hero David and the Jewish heroine Judith (both of whom had been celebrated in sculptures by Donatello and Michelangelo). When Artemisia moved there, her personal investment in the subject found ready patronage in the city. Nevertheless, it is nearly impossible to see the paintings outside the context of her biography. She painted her first version of the theme during and just after the trial itself, and the last, *Judith and Maidservant with Head of Holofernes*, in about 1625 (Fig. **21.17**), suggesting that in this series she transforms her personal tragedy in her painting. In all of them, Judith is a self-portrait of the artist. In the Hebrew Bible's Book of Judith, the Jewish heroine enters the enemy Assyrian camp intending to seduce their lustful leader, Holofernes, who has laid siege to her people. When Holofernes falls asleep, she beheads him with his own sword and carries her trophy back to her people in a bag. The Jews then go on to defeat the leaderless Assyrians.

Gentileschi lights the scene with a single candle, dramatically accentuating the Caravaggesque tenebrism of the presentation. Judith shades her eyes from its light, presumably in order to look out into the darkness that surrounds her. Her hand also invokes our silence, as if danger lurks nearby. The maid stops wrapping Holofernes's head in a towel, looking on alertly herself. Together, mistress and maid, larger than life-size and heroic, have taken their revenge on not only the Assyrians, but on lust-driven men in general. As is so often the case in Baroque painting, the space of the drama is larger than the space of the frame. The same invisible complement outside Bernini's *David* (see Fig. 21.7) hovers in the darkness beyond reach of our vision here.

Gentileschi was not attracted to traditional subjects like the Annunciation. She preferred biblical and mythological heroines and women who played major roles. In addition to Judith, she dramatized the stories of Susannah, Bathsheba, Lucretia, Cleopatra, Esther, Diana, and Potiphar's wife. A good business woman, Gentileschi also knew how to exploit the taste for paintings of female nudes. And, like so many Caravaggisti, she also loved to paint the folds and pleats of rich fabric, which themselves evoke the drama of light and dark so characteristic of Baroque painting in general and to which contemporary painters are themselves attracted (see *The Continuing Presence of the Past*, page 726).

VENICE AND BAROQUE MUSIC

How did Baroque music develop in Venice?

As noted in the discussion of music in Chapter 20, in the sixteenth century, the Council of Trent had recognized the power of music to convey moral and spiritual ideals. "The whole plan of singing," it wrote in an edict issued in 1552,

> should be constituted not to give empty pleasure to the ear, but in such a way that the words be clearly understood by all, and thus the hearts of the listeners be drawn to the desire of heavenly harmonies, in the contemplation of the joys of the blessed. … They shall also banish from church all music that contains, whether in the singing or in the organ playing, things that are lascivious or impure.

In other words, the Council rejected the use of secular music, which by definition it deemed lascivious and impure, as a model for sacred compositions. Renaissance composers such as Guillaume Dufay and Josquin des Prez (see Chapters 14 and 15) had routinely used secular music in composing their masses, and Protestants had adapted the

Fig. 21.17 Artemisia Gentileschi, *Judith and Maidservant with Head of Holofernes*, ca. 1625. Oil on canvas, 72½" × 55¾". The Detroit Institute of Arts. Gift of Leslie H. Green. 52.253. Judith is a traditional symbol of fortitude, a virtue with which Artemisia surely identified.

David Reed's *#515*

Looking at his work, one might well call the contemporary American painter David Reed an abstract Caravaggisti. None of the Caravaggisti were ever abstract painters, of course, but then none of them came of age as painters in the modern era, when one could hardly ignore the Abstract Expressionist painting of Jackson Pollock, Willem de Kooning, and the other artists whose work is reproduced and described in Chapter 38. What is surprising, however, is that a painter growing up in the modern era should be so drawn to the painting of Caravaggio and his followers.

Reed's painting is, first and foremost, about the brushstroke. In this, it is abstract. "I started some paintings in the 60s of brush marks," Reed told an interviewer in 2013. "I wanted them to be directly about process, to show how the painting was made. But they looked like process and like something else, like emblems of brush marks or reproductions of brush marks, or photographs of brush marks." In fact, they look something like ribbons of Christmas candy, twisting and turning, folding and unfolding down the length of the canvas. But rather than possessing the sense of spontaneity and immediacy that defines the brush marks of the Abstract Expressionists, they seem carefully composed, deliberate, even artificial.

And it is in this that Reed's paintings evoke the Caravaggisti, the love of fabric, the folds and pleats of which evoke the very drama of light and dark, that characterizes Baroque painting.

In Baroque painting, the gradual gradation of value—the movement from light to dark around a curved surface—is employed to define a volume, a three-dimensional space. Reed's value gradations likewise seem to define a volume, a space, but of what? Not clothing, not a body—just space, or, in fact, the illusion of space. In this abstraction, Reed's folds and ribbons are about the play of light and dark.

But Reed's work is, especially in its vibrant color, very different from that of the Caravaggisti. In fact, Reed's use of color reflects his interest in the light and color generated in film, television, and photography. "I'm a painter," he has said, "who wants a kind of media, screen-light in my work." But he recognizes, as well, that the light that seems to emanate from an off-canvas source in so much Baroque art is like that which might come "from a video screen or a movie projection."

"In a way," he says, "it foretells the kind of painting that will come centuries later." Painting, that is, like his own.

David Reed, *#515*, 2001–04. Oil and alkyd on linen, 120" × 54". Collection Albright-Knox Art Gallery.

chorales of their liturgy from existing melodies, both religious and secular.

The division between secular and religious music was far less pronounced in Venice, a city that had traditionally chafed at papal authority. As a result, Venetian composers felt freer to experiment and work in a variety of forms, so much so that in the seventeenth century, the city became the center of musical innovation and practice in Europe.

Giovanni Gabrieli and the Drama of Harmony

Venice earned its place at the center of the musical world largely through the efforts of Giovanni Gabrieli (1556–1612), the principal organist at St. Mark's Cathedral. Gabrieli composed many secular madrigals, but he also responded to the Counter-Reformation's edict to make church music more emotionally engaging. To do this, he expanded on the polychoral style that Adrian Willaert had developed at St. Mark's in the mid-sixteenth century (see Chapter 15). Gabrieli located contrasting bodies of sound in different areas of the cathedral's interior, which already had two organs, one on each side of the chancel (the space containing the altar and seats for the clergy and choir). Playing them against one another, he was able to produce effects of stunning sonority. Four choirs—perhaps a boys' choir, a women's ensemble, basses and baritones, and tenors in another group—sang from separate balconies above the nave. Positioned in the alcoves were brass instruments, including trombones and cornetts. (A cornett was a hybrid wind instrument, combining a brass mouthpiece with woodwind finger technique. The nineteenth-century band instrument has a similar name but is spelled with a single "t.") Both the trombone and the cornett were staples of Venetian street processions. And the street processions of the Venetian confraternities or *scuole* (see Chapter 15) were in many ways responsible for the development of instrumental music in Venice. By 1570, there were approximately 40 street processions a year, with each of the six confraternities participating. Each *scuola* was accompanied through the streets by singers, bagpipes, shawms (a double reed instrument similar to a bagpipe, but without the bag), drums, recorders, viols, flutes, and *pifarri*, or ensembles of wind instruments often composed of cornetts and trombones (two or three of each) (Fig. **21.18**). The Venetian love for these ensembles quickly led to their adaptation from secular ceremonies to religious ones (many of the *scuole* processions were associated with religious feast days in the first place).

Gabrieli was among the first to write religious music intended specifically for wind ensemble—music that was independent of song and that could not, in fact, be easily sung. One such piece is his 1597 *Canzona Duodecimi Toni* (*Canzona in the Twelfth Mode* [or *Tone*]), in which two brass ensembles create a musical dialogue (see **Listening Guide 21.1**). A **canzona** is a type of instrumental contrapuntal work, derived from Renaissance secular song, like the madrigal, which was increasingly performed in the seventeenth century in church settings. It is particularly notable for its dominant rhythm, LONG-short-short, known as the "canzona rhythm." In St. Mark's, the two ensembles would have been placed across from one another in separate lofts. The alternating sounds of cornett and trombone or, in other compositions, brass ensemble, choir, and organ coming from various parts of the cathedral at different degrees of loudness and softness would have created a total effect similar to stereo "surround sound."

Fig. 21.18 Gentile Bellini, *Procession of the Reliquary of the True Cross in Piazza San Marco* (detail), 1496. Oil on canvas, 12'½" × 24'5¼". Gallerie dell'Accademia, Venice. (See Fig. 15.27.) The procession here includes six *trombe lunghe*, or long silver trumpets, followed by three shawms, and two trombonists.

For each part of his composition, Gabrieli chose to designate a specific voice or instrument, a practice we have come to call **orchestration**. Furthermore, he controlled the **dynamics** (variations and contrast in force or intensity) of the composition by indicating, at least occasionally, the words *piano* ("soft") or *forte* ("loud"). In fact, he is the first known composer to specify dynamics. The dynamic contrasts of loud and soft in the *Canzona Duodecimi Toni*, mirroring the taste for tenebristic contrasts of light and dark in Baroque painting, is a perfect example of Gabrieli's use of dynamic variety. As composers from across Europe came to Venice to study, they took these terms back with them, and Italian became the international language of music.

Finally, and perhaps most important, Gabrieli organized his compositions around a central note, called the **tonic note** (usually referred to as the **tonality** or **key** of the composition). This tonic note provides a focus for the composition. The ultimate resolution of the composition into the tonic, as in the *Canzona Duodecimi Toni*, where the tonic note is C, the twelfth mode (or "tone") in Gabrieli's harmonic system, provides the heightened sense of harmonic drama that typifies the Baroque.

Claudio Monteverdi and the Birth of Opera

A year after Gabrieli's death, Claudio Monteverdi (1567–1643) was appointed musical director at St. Mark's in Venice. A violinist, Monteverdi had been the music director at the court of Mantua. In Venice, Monteverdi proposed a new relation of text (words) and music. Where traditionalists favored the subservience of text to music—"Harmony is the ruler of the text," proclaimed Giovanni Artusi, the most ardent defendant of the conservative position—Monteverdi proclaimed just the opposite: "Harmony is the mistress of the text!" Monteverdi's position led him to master a new, text-based musical form, the **opera**, a term that is the plural of the word *opus*, or "work." Operas are works consisting of many smaller works. (The term *opus* is used, incidentally, to catalog the musical compositions of a given composer, usually abbreviated *op.*, so that "op. 8" would mean the eighth work or works published in the composer's repertoire.)

The form itself was first developed by a group known as the Camerata of Florence (*camerata* means "club" or "society"), a group dedicated to discovering the style of singing used by the ancient Greeks in their drama, which had united poetry and music but was known only through written accounts. The group's discussions stimulated the composer Giulio Caccini to write *New Works of Music*. Here, he describes what the Camerata considered the ancient Greek ideal of music (**Reading 21.5**):

READING 21.5

from Giulio Caccini, *New Works of Music* (1602)

At the time … the most excellent *camerata* of the Most Illustrious Signor Giovanni Bardi, Count of Vernio, flourished in Florence. … I can truly say, since I attended well, that I learned more from their learned discussions than I did in more than thirty years of studying counterpoint. This is because these discerning gentlemen always encouraged me and convinced me with the clearest arguments not to value the kind of music which does not allow the words to be understood well and which spoils the meaning and the poetic meter by now lengthening and now cutting the syllables short to fit the counterpoint, and thereby lacerating the poetry. And so I thought to follow that style so praised by Plato and the other philosophers who maintained music to be nothing other than rhythmic speech with pitch added (and not the reverse!), designed to enter the minds of others and to create those wonderful effects that writers admire, which is something that cannot be achieved with the counterpoint of modern music.

Over the course of the 1580s and 1590s, Caccini and others began to write works that placed a solo vocal line above an instrumental line, known as the ***basso continuo***, or "continuous bass," usually composed of a keyboard instrument (organ, harpsichord, etc.) and bass instrument (usually a cello), that was conceived as a supporting accompaniment, not as the harmonic equivalent, to the vocal line. This combination of solo voice and *basso continuo* came to be known as **monody**.

The inspiration for Monteverdi's first opera, *Orfeo* (1607), was the musical drama of ancient Greek theater. The **libretto** (or "little book") for Monteverdi's opera was based on the Greek myth of Orpheus and Eurydice. In the opera, shepherds and nymphs celebrate the love of Orpheus and Eurydice in a dance that is interrupted by the news that Eurydice has died of a snake bite. The grieving Orpheus, a great musician and poet, travels to the underworld to bring Eurydice back. His plea for her return so moves Pluto, the god of the underworld, that he grants it, but only if Orpheus does not look back at Eurydice as they leave. But anxious for her safety, he does glance back and loses her forever. Monteverdi did, however, offer his audience some consolation (if not really a happy ending): Orpheus' father, Apollo, comes down to take his son back to the heavens where he can behold the image of Eurydice forever in the stars.

Although *Orfeo* is by no means the first opera, it is generally accepted as the first to successfully integrate music and drama. Monteverdi tells the story through a variety of musical genres—choruses, dances, and instrumental interludes. Two particular forms stand out—the ***recitativo*** and the **aria**. *Recitativo* (or recitative) is a style of singing that imitates very closely the rhythms of speech. Used for dialogue, it allows for a more rapid telling of the story than might be possible otherwise. The aria would eventually develop into an elaborate solo or duet song that expresses the singer's emotions and feelings, expanding on the dialogue of the recitative (in Monteverdi's hands, the aria could still be sung in recitative style). "The modern composer," Monteverdi wrote, "builds his works on the basis of truth," and he means by this, most of all, the emotional truth that we have come to expect of the Baroque in general. Orpheus'

recitative after learning of the death of Eurydice is one of the most moving scenes in this opera (see **Listening Guide 21.2**). He sings passionately first of his grief:

Tu sé morta, sé morta	You are dead, my life,
mia vita, ed io respiro?	and I am still breathing?
Tu sé de me partita, sé da	You have left me, left me,
me partitat per mai più,	
mai più non tornare,	Never more to return, and
ed io rimango?	I remain here?

The melody imitates speech by rising at the end of each question. Then, when Orpheus decides to go back to the underworld and plead for Eurydice's return, the music reflects his shift from despair to determination. But even in this second section, as he expresses his dream of freeing Eurydice, when he sings of the "lowest depths" (*profundi abissi*) of the underworld or of "death" (*morte*) itself, the melody descends to low notes in harmony with the words. Moment by moment, Monteverdi's music mirrors the emotional state of the character.

Orfeo required an orchestra of three dozen instruments—including ten viols, three trombones, and four trumpets—to perform the overture, interludes, and dance sequences, but generally only a harpsichord or lute accompanied the arias and recitatives so that the voice would remain predominant. For the age, this was an astonishingly large orchestra, financed together with elaborate staging by the Mantuan court where it was composed and first performed, and it provided Monteverdi with a distinct advantage over previous opera composers. He could achieve what his operatic predecessors could only imagine—a work that was both musically and dramatically satisfying, one that could explore the full range of sound and, with it, the full range of psychological complexity.

Arcangelo Corelli and the Sonata

The *basso continuo* developed by Caccini and others to support the solo voice also influenced purely instrumental music, especially in the sonatas of the Roman composer and violinist Arcangelo Corelli (1653–1713). The term **sonata** as we use it today, did not develop until the last half of the eighteenth century. In the Baroque era, it had a much more general meaning. In Italian, *sonata* simply means "that which is sounded," or played by instruments, as opposed to that which is sung, the *cantata*. By the end of the seventeenth century, the **trio sonata** had developed a distinctive form. As the word "trio" suggests, it consists of three parts: two higher voices, usually written for violins, but often performed by two flutes, or two oboes, or any combination of these, that play above a *basso continuo*. One of the results of this arrangement is that the *basso continuo* harmonizes with the higher voices, resulting in distinct chord clusters that often provide a dense textural richness to the composition.

There were two main types of sonata, a secular form, the ***sonata da camera*** ("chamber sonata"), and a religious form, the ***sonata da chiesa*** ("church sonata"). Corelli wrote both. The *sonata da camera* consists of a suite of dances, and the *sonata da chiesa* generally consists of four **movements**, or independent sections, beginning with a slow, dignified movement, followed by a fast, imitative movement, then slow and fast again. The distinctive feature of both forms is the primacy of a particular major or minor scale. At the least, the first and last movements of such works share the same key; in the case of the *sonata da camera*, every movement might be in the same key.

Corelli quickly adopted the sonata form because it allowed him, as a virtuoso violinist, to compose pieces for himself that showcased his talents. It was further expected that virtuoso violinists would embellish their musical lines. Against a *basso continuo* in the bass clef, Corelli would play a complex violin part, filled with intricate runs of musical notes in the treble clef. Thus, as opposed to the clear notation of the melody in the music, the solo voice performs with rhythmic freedom.

Antonio Vivaldi and the Concerto

Corelli's instrumental flair deeply influenced Venice's most important composer of the early eighteenth century, Antonio Vivaldi (1678–1741). Vivaldi, son of the leading violinist at St. Mark's, assumed the post of musical director at the Ospedale della Pietà in 1703, one of four orphanages in Venice that specialized in music instruction for girls. (Boys at the orphanages were not trained in music since it was assumed they would enter the labor force.) As a result, many of the most talented harpsichordists, lutenists, and other musicians in Venice were female, and many of Vivaldi's works were written specifically for performance by orphanage girl choirs and instrumental ensembles (Fig. **21.19**). By and large, the orphanage musicians were young

Fig. 21.19 Jacopo Guarana, *Apollo Conducting a Choir of Maidens*, 1776. Oil on canvas. Church of the Ospedaletto, Salla della Musica, Venice. The Ospedaletto church was the performance space for the girls of the orphanage of Santa Maria dei Derelitti. Although Apollo conducts in this painting, the ensemble director can be seen in yellow, just behind the right column, score in hand.

girls who would subsequently go on to either a religious life or marriage, but several were middle-aged women who remained in the orphanage, often as teachers, for their entire lives. The directors of the orphanages hoped that wealthy members of the audience would be so dazzled by the performances that they would donate money to the orphanages. Audiences from across Europe attended these concerts, which were among the first in the history of Western music that took place outside a church or theater and were open to the public. And they were, in fact, dazzled by the talent of these female musicians; by all accounts, they were as skilled and professional as any of their male counterparts in Europe.

Vivaldi specialized in composing **concertos**, a three-movement secular form of instrumental music, popular at court, which had already been established, largely by Corelli. Vivaldi, however, systematized its form. The first movement of a concerto is usually *allegro* (quick and cheerful), the second slower and more expressive, like the pace of an opera aria, and the third a little livelier and faster than the first. Concertos usually feature one or more solo instruments that, in the first and third movements particularly, perform passages of material, called *episodes*, that contrast back and forth with the orchestral score—a form known as ***ritornello***, "something that returns" (i.e., returning thematic material). At the outset, the entire orchestra performs the *ritornello* in the tonic—the specific home pitch around which the composition is organized. Solo episodes interrupt alternating with the *ritornello*, performed in partial form and in different keys, back and forth, until the *ritornello* returns again in its entirety in the tonic in the concluding section.

Ritornello

In the course of his career, Vivaldi composed nearly 600 concertos—for violin, cello, flute, piccolo, oboe, bassoon, trumpet, guitar, and even recorder. Most of these were performed by the Ospedale ensemble. The most famous is a group of four violin concertos, one for each season of the year, called *The Four Seasons*. It is an example of what would later come to be known as **program music**, or purely instrumental music in some way connected to a story or idea. The program of the first of these concertos, *Spring* (see **Listening Guide 21.3**), is supplied by a sonnet, written by Vivaldi himself, at the top of the score. The first eight lines suggest the text for the first movement, and the last six lines, divided into two groups of three, the text for the second and third movements. Here are the first eight lines:

Spring has arrived, and full of joy
The birds greet it with their happy song.
The streams, swept by gentle breezes,
Flow along with a sweet murmur.
Covering the sky with a black cloak,
Thunder and lightning come to announce the season.
When all is quiet again, the little birds
Return to their lovely song.

The *ritornello* in this concerto is an exuberant melody played by the whole ensemble. It opens the movement, and corresponds to the poem's first line. Three solo violins respond in their first episode—"the birds greet it with their happy song"—imitating the song of birds. In the second episode, they imitate "streams, swept by gentle breezes," then, in the third, "thunder and lightning," and finally the birds again, which "Return to their lovely song." The whole culminates with the *ritornello*, once again resolved in the tonic.

In its great rhythmic freedom (the virtuoso passages given to the solo violin, recalling the improvisational embellishments of Corelli) and the polarity between orchestra and solo instruments (the contrasts of high and low timbres, or sounds, such as happy bird song and clashing thunder), Vivaldi's concerto captures much of what differentiates Baroque music from its Renaissance predecessors. Gone are the balanced and flowing rhythms of traditional polyphonic composition in which all voices are of equal importance. Perhaps most of all, the drama of beginning a composition in a tonic key, moving to different keys and then returning to the tonic—a process known as **modulation**—could be said to distinguish Baroque composition from what had come earlier. The dramatic effect of this modulation, together with the rich texture of the composition's chord clusters, parallels the dramatic lighting of Baroque painting, just as the embellishment of the solo voice finds its equivalent in the ornamentation of Baroque architecture.

As an instrumental composition, *The Four Seasons* naturally forgoes the other great innovation of the Baroque, an emphasis on an actual text, as found particularly in opera. But even in Rome, where sacred music dominated the scene, opera began to take hold. In 1632, an opera by Stefano Landi (1590–1639), with stage designs by Gianlorenzo Bernini, premiered at a theater seating no fewer than 3,000 spectators inside the walls of the Barberini palace, home of the Barberini pope Urban VIII (papacy 1622–44). Like many of the Roman operas that followed, its subject was sacred, *Sant'Alessio* (Saint Alexander), and it convinced the Church that sung theater could convey moral and spiritual ideas. This conviction would shortly give rise to a new genre of vocal music, the **oratorio**. Generally based on religious themes, the oratorio shared some of opera's musical elements, including the *basso continuo*, the aria, and the recitative, but it was performed without the dazzle of staging and costume (see the discussion of the English oratorio in Chapter 24).

The End of Italian Ascendancy

In France, the finance minister to King Louis XIV was wise in matters far beyond finance. Jean-Baptiste Colbert counseled the king that "apart from striking actions in warfare, nothing is so well able to show the greatness and spirit of princes than buildings; and all posterity will judge them by the measure of those superb habitations which they have built during their lives." The king was looking for an architect to design a new east facade for the Palais du Louvre in Paris, which would house the new royal apartments. For such grand plans, the world's most famous—and original—architect, Gianlorenzo Bernini, was the obvious choice. With the pope's permission, Bernini departed for Paris. Large and adoring crowds greeted him in every city through which he passed.

In Paris, he received a royal welcome, but the king was far from happy with Bernini's plans for the Louvre (Fig. **21.20**). Although he accepted the plans, and foundations were poured, he concluded, after Bernini returned to Rome, that the Italian's design was too elaborate and ornate. Furthermore, French architects were protesting the award of such an important commission to a foreigner. The architect Louis Le Vau, the painter Charles Le Brun, and the physician, mathematician, and architectural historian Claude Perrault together designed a simpler, more Classically inspired facade (Fig. **21.21**), consisting of five units, centered by a triangular pediment and paired Corinthian colonnades. Louis was so pleased that he added paired colonnades to the other facades of the palace.

This debate between the ornate and the Classical, the sensuous and the austere, would define the art of the eighteenth century. Baroque ornamentation, epitomized in the seventeenth century by Bernini, would become even more exaggerated in the eighteenth century, transformed into the fanciful and playful decoration of the so-called Rococo style. Ironically, this happened especially at the French court. The forms of Classical Greek and Roman architecture offered a clear alternative, countering what seemed to many an art of self-indulgence, even moral depravity. Painting, too, could abandon the emotional theatrics of the Baroque and appeal instead to the intellect and reason, assuming a solidity of form as stable as architecture.

Louis XIV's rejection of Bernini's plan marked the end of the ascendancy of Italian art and architecture in European culture. From 1665 on, the dominant artists of Europe would be Northern in origin. Even in the field of music, Northerners such as Bach and Handel, then Mozart and Beethoven, were about to triumph. In Holland, France, and England, the Baroque would become an especially potent cultural force, permanently redefining the centers of European culture. ■

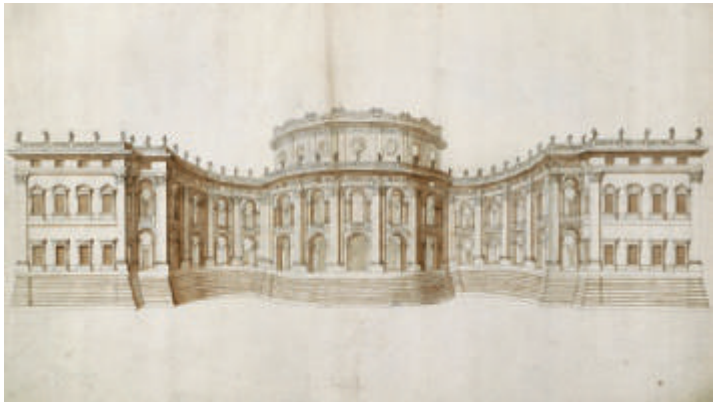


Fig. 21.20 Gianlorenzo Bernini, design for the east facade of the Palais du Louvre, Paris, 1664. Musée du Louvre, Paris.

Fig. 21.21 Louis Le Vau, Claude Perrault, and Charles Le Brun, east facade of the Palais du Louvre, Paris, 1667–70.

CHAPTER REVIEW

21.1 Discuss how the Baroque style, especially in sculpture and architecture, furthered the agenda of the Counter-Reformation, especially in sculpture and architecture.

As part of its strategy to respond to the Protestant Reformation, the Catholic Church in Rome championed a new Baroque style of art that appealed to the range of human emotion and feeling, not just the intellect. Bernini's majestic new colonnade for the square in front of St. Peter's in Rome helped to reveal the grandeur of the basilica itself, creating the dramatic effect of the Church embracing its flock. How does his sculptural program for the Cornaro Chapel in Rome epitomize the Baroque? How are Baroque sensibilities reflected in his sculpture of the biblical hero David? How do action, excitement, and sensuality fulfill the Counter-Reformation objectives in Baroque religious art? What role do the senses play in the theological writings of Saint Ignatius? What role does art play in his set of "Rules"? How is this reflected in Andrea Pozzo's ceiling for the Church of Sant'Ignazio?

One of the most influential pieces of Baroque architecture is Francesco Borromini's Church of San Carlo alle Quattro Fontane in Rome. Borromini replaces the traditions of Renaissance architecture with a facade of dramatic oppositions and visual surprises. How does the architecture of Bernini and Borromini express the theatrical urge to draw the viewer into the drama?

21.2 Describe how the Baroque style manifests itself in painting.

Caravaggio used the play of light and dark to create paintings of stunning drama and energy that reveal a new Baroque taste for vividly realistic detail. His followers, among them Elisabetta Sirani and Artemisia Gentileschi, inherited his interest in realism and the dramatic. What does Caravaggio share with the mystical writings of Teresa of Ávila and the poetry of Englishman John Donne? What social conditions and aesthetic values of the Italian Baroque particularly interested both Sirani and Gentileschi?

21.3 Examine how the Baroque style developed musically in Venice.

If Rome was the center of Baroque art and architecture, Venice was the center of Baroque music. Giovanni Gabrieli took advantage of the sonority of St. Mark's Cathedral to create canzonas in which he carefully controlled the dynamics (loud/soft) of the composition and its tempo. What is a canzona? It was in Venice that a new form of musical drama known as *opera* was born in the hands of Claudio Monteverdi, who gave text precedence over harmony for the first time in the history of Western music. His opera *Orfeo* successfully married music and drama. What is an opera? The sonata, popularized as an instrumental genre by virtuoso violinist Arcangelo Corelli, provided a model for all instrumental music. Finally, Antonio Vivaldi perfected the concerto as a genre, and many of his concertos were performed by the women at the Ospedale della Pietà, where he was musical director. What are the chief features of the concerto? In general, what features of Venetian Baroque music are analogous to Baroque painting and sculpture?

READING

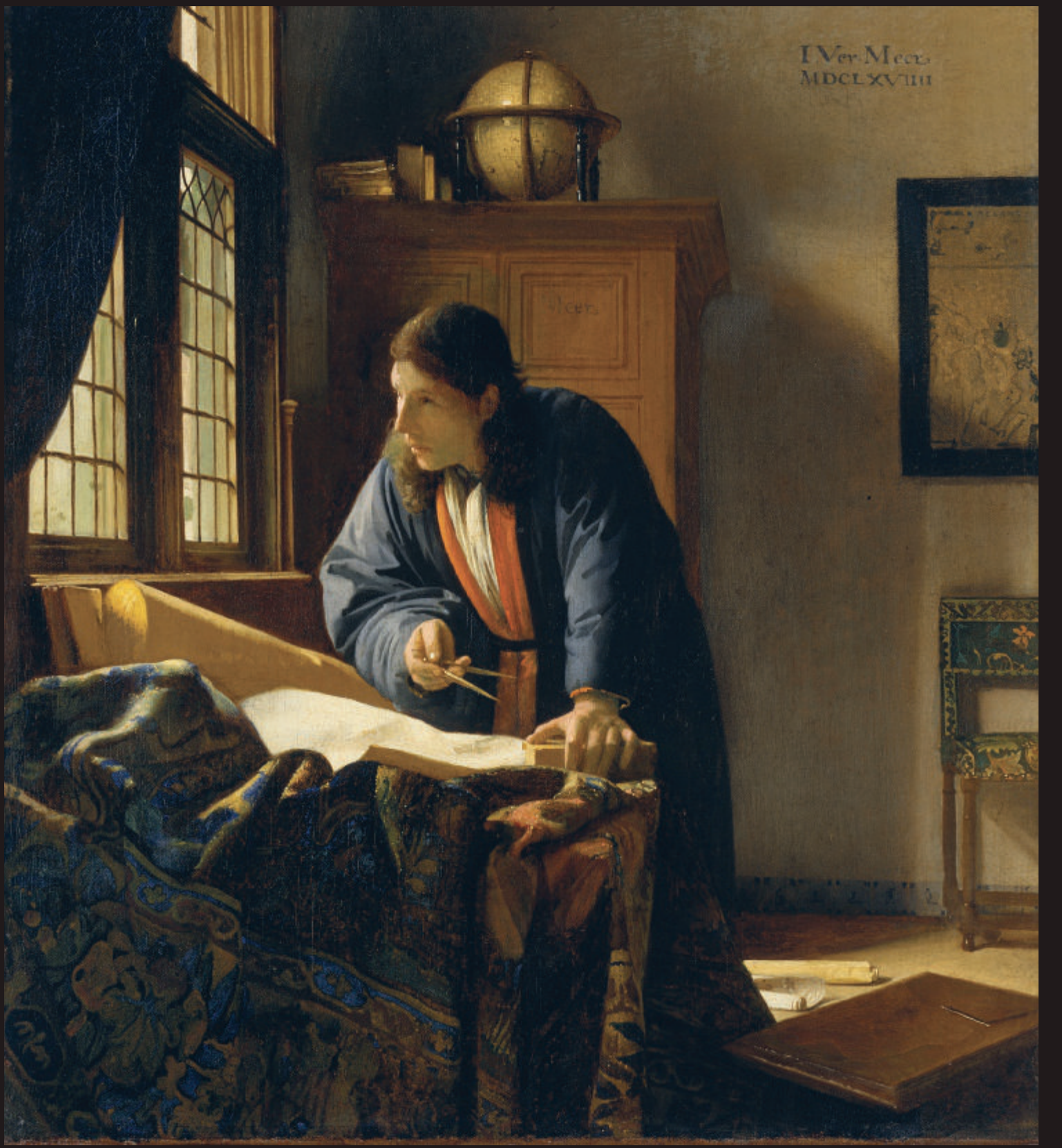
READING 21.4

John Donne, "The Flea" (1633)

Donne's poetry is often labeled "metaphysical" because it borrowed words and images from seventeenth-century science. It reflects a Baroque taste for dramatic contrast and the ability to synthesize discordant images. This last is reflected particularly in the elaborate metaphor, or "conceit," of the following poem, first published posthumously, in which a flea is taken for the image of love's consummation.

Mark but this flea, and mark in this,
How little that which thou deny'st me is;
Me it sucked first, and now sucks thee,
And in this flea, our two bloods mingled be;[1]
Confess it, this cannot be said
A sin, or shame, or loss of maidenhead,
    Yet this enjoys before it woo,
    And pampered swells with one blood made of two,
    And this, alas, is more than we would do.
Oh stay, three lives in one flea spare,[2]
Where we almost, nay more than married are,
This flea is you and I, and this
Our marriage bed, and marriage temple is;
    Though parents grudge, and you, we are met,
And cloistered in these living walls of jet.[3]
Though use make you apt to kill me,
Let not to this, self murder added be,
    And sacrilege,[4] three sins in killing three.
Cruel and sudden, has thou since
Purpled thy nail, in blood of innocence?
In what could this flea guilty be,
Except in that drop which it sucked from thee?
Yet thou triumph'st, and say'st that thou
Find'st not thyself, nor me the weaker now;
    'Tis true, then learn how false, fears be;
    Just so much honour, when thou yield'st to me,
    Will waste, as this flea's death took life from thee.

[1] United in the flea are the flea itself, the lover, and the mistress, thus echoing the Trinity, an elaborate metaphor that continues on throughout the poem.
[2] The mistress is about to kill the flea.
[3] Jet: black; in other words, the living body of the flea.
[4] Sacrilege because the flea is portrayed as a "marriage temple."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22 The Secular Baroque in the North

The Art of Observation

LEARNING OBJECTIVES

22.1 Characterize the tensions between Amsterdam's commercial prosperity and the doctrines of its Calvinist Dutch Reformed Church.

22.2 Describe how developments in science and philosophy challenged the authority of the Church.

22.3 Discuss the development of a vernacular style of painting in portraiture, still life, landscape, and genre scenes.

22.4 Identify the chief characteristics of Baroque keyboard music.

Seventeenth-century Amsterdam was arguably the best-known city in the world. In Europe, it might have competed for preeminence with Rome, Paris, Venice, and London, but in the far regions of the Pacific and Indian oceans, in Asia, Africa, and even South America, if you knew of Europe, you had heard of Amsterdam. No city was more heavily invested in commerce. No port was busier. The city's businessmen traded in Indian spices and Muscovy furs, grain from the Baltic, sugar from the Americas, Persian silk, Turkish carpets, Venetian mirrors, Italian maiolica, Japanese lacquerware, saffron, lavender, and tobacco. Tea from China, coffee from the Middle East, and chocolate from South America introduced the West to caffeine, the stimulant that would play a key role in igniting the Industrial Revolution a century later.

The Geographer (Fig. **22.1**), a painting by Dutch artist Johannes Vermeer (1632–75), celebrates Amsterdam's geographical self-esteem. A sea chart on the back wall shows "all the Sea coasts of Europe," a map published in Amsterdam. The globe above the man's head was also produced in Amsterdam. (So detailed is this painting that the viewer can read the dates and names of the manufacturers of the map and the globe.) He holds a set of dividers, used to mark distances on what must be a chart or map on the table in front of him; the table covering is bunched up behind it as if he has pushed it out of his way. With his left hand resting on a book, he stares intently to his right, as if caught up in a profound intellectual problem.

Vermeer's *Geographer* not only embodies the intellectual fervor of the age, but also many of the themes and strategies of Dutch vernacular painting in the seventeenth century. It reveals, first of all, a rigorous attention to detailed observation, which is why we can readily identify the originals of things like the map and globe. It actively seeks to capture something of the personality of the figure, increasingly the aim of Dutch portraiture. It represents a domestic interior—a favorite theme in Dutch painting—even as it suggests an interest, through the practice of geography, in the natural **landscape**. (The word "landscape" derives, in fact, from the Dutch *landschap*—that is, "land form.") And, in all

◀ **Fig. 22.1 Johannes Vermeer, *The Geographer*, 1668–69.** Oil on canvas, 20⅛" × 18¾". Städel Museum, Frankfurt. © Blauel/Gramm Artothek. Many scholars believe this to be a portrait of the Dutch lens-maker Antoni van Leeuwenhoek, whose scientific investigations are discussed later in the chapter. One of the details supporting the notion that Leeuwenhoek served as a model for this image is the carpet draped across the front of the desk on which he works. Leeuwenhoek worked in the textile industry.

Fig. 22.2 Franz Hogenbergh, *City of Amsterdam, The Netherlands*, from *Civitates Orbis Terrarum* ("Cities of the World"), ed. Georg Braun, 1572. Engraving. Private collection. By 1640, the city would expand well into the fields on both sides of this image, and it continued to expand throughout the century.

likelihood, the painting possesses an allegorical or symbolic meaning in keeping with the strict Dutch Calvinist discipline: The geographer not only charts the landscape but, as he looks forward into the light of revelation, the proper course in life itself. *The Geographer* is also a simple expression of joy in the world of things—carpets, globes, even pictures—and the Dutch desire to possess them.

And yet, for all their wealth and knowledge of foreign lands, the Dutch remained somewhat conservative, as if the very flatness of the landscape, recovered from the sea, led the Netherlandish mind to a condition of restraint. Between 1590 and 1640, nearly 200,000 acres of land intersected by canals and dikes were created by windmills that pumped water out of the shallows and into the sea. The resulting landscape was an austere geometry of right angles and straight lines (Fig. **22.2**). The homes of the rich merchants of Amsterdam were distinguished by this same geometric understatement, their facades typically avoiding Baroque asymmetry and ornamentation. In life as in architecture, in Calvinist Holland, the values of a middle class intent on living well but not making too public a show of it eclipsed the values of European court culture elsewhere. Especially avoided were what the Dutch deemed the lavish Baroque excesses of the Vatican in Rome.

This chapter outlines the forces that defined Amsterdam as the center of the more austere Baroque style that dominated Northern Europe in the seventeenth century. As Amsterdam's port established itself as the center of commerce in the North, the city's economy thrived, sometimes too hotly, as when mad speculation sent the market in tulip bulbs skyrocketing. But this tendency to excess was balanced by the conservatism of the Dutch Reformed Church, whose Calvinist fathers found no place for art in the Calvinist liturgy, by and large banning art from its churches. The populace as a whole, however, embraced a new vernacular art depicting the material reality and everyday activities of middle-class Dutch society. The art of portraiture was especially popular, as average citizens sought to affirm their well-being in art.

CALVINIST AMSTERDAM: CITY OF CONTRADICTIONS

What contradictory forces were at work in Calvinist Amsterdam?

Seventeenth-century Amsterdam was a city of contradictions. It was a society at once obsessed with the acquisition of goods of all kinds, yet rigidly austere in its spiritual life. It was intolerant of what it deemed religious heresy among Protestants, but tolerant of Catholics and Jews; its people avidly collected art for their homes but forswore art in the church. The city was also the curious beneficiary of its sworn enemy, Catholic Spain. Throughout the first three-quarters of the sixteenth century, the provinces of the Netherlands, which correspond roughly to modern-day Belgium and Holland, had been ruled by Charles I of Spain and then his son, Philip II, as part of their Habsburg kingdom (see Chapter 20). Antwerp was their banking center, and through its port passed much of the colonial bounty of

the Western Hemisphere, especially from the great silver mines of Potosí, Bolivia (see Chapter 18), and Zacatecas, Mexico. At Potosí alone, a minimum of 7.6 million reales (see Fig. 18.8), minted into coins near the mine, were produced annually between 1580 and 1650, all destined to pay off the ever-increasing debt of the Spanish royal family.

Gaining Independence from Spain

Charles I had been born in Flanders and spoke no Spanish when he assumed the Spanish throne in 1519 (see Chapter 20). But Philip II was born in Spain, and, in 1559, he left the Netherlands permanently for his native land, entrusting the northern provinces to the regency of Margaret of Parma, his half-sister. From Spain, Philip tried unsuccessfully to impose Catholic rule on the North by breaking down the traditional autonomy of the 17 Netherlands provinces and asserting rule from Madrid. To this end, he imposed the edicts of the Council of Trent (see Chapter 20) throughout the Netherlands and reorganized its churches under Catholic hierarchy. The Calvinists roundly rejected both moves, especially in the northern seven provinces of Holland centered at Amsterdam. Ten thousand mercenaries led by the Duke of Alba arrived in 1567 to force the Calvinist resistance into cooperation, but the Dutch opened their dikes, flooding the countryside in order to repulse the Spanish. Finally, in 1576, Spanish soldiers, rioting over lack of pay, killed 7,000 citizens in the streets of Antwerp in a four-day battle that became known as the Spanish Fury. Appalled at the slaughter, the southern ten provinces of the Netherlands, which had remained Catholic up to this point, united with the north to form the United Provinces of the Netherlands (see Map **22.1**). The union lasted only three years, at which point five southern provinces made peace with Spain. Throughout this period, Protestants migrated in mass numbers out of the south, and out of Antwerp particularly, to the north. So did intellectuals and merchants. Of Antwerp's 100,000 inhabitants in 1570, no more than about 40,000 remained by 1590.

Meanwhile, in 1581, the northern provinces declared their independence from Spain, even as Philip reinvigorated his efforts to reconquer them. In 1584 and 1585, when the Spanish under Alessandro of Farnese captured Antwerp after a 14-month siege, the city's fate was sealed. The northern provinces felt that Antwerp was too closely associated with the Spanish for comfort. Thus, at the end of the Thirty Years' War, when the Treaty of Westphalia in 1648 permanently excluded Spain from meddling in the Netherlands' affairs, Amsterdam closed the port of Antwerp by closing off the River Scheldt to commerce. As Amsterdam clearly understood, no viable commercial enterprise could remain in the city. The wealth that had flowed through the port at Antwerp would thereafter flow through the port of Amsterdam. Amsterdam's prize of war was largely this: What Antwerp had been to the sixteenth century, Amsterdam would be to the seventeenth.

Map 22.1 The United Provinces of the Netherlands (in brown) and the Spanish Netherlands (in green) in 1648.

The Dutch East India Company in Batavia

In 1602, a multinational joint-stock company was chartered in Amsterdam—the first of its kind and an enterprise that in many ways laid the foundation for modern international capitalism. A cooperative venture of six different companies, merged to defuse the fierce competition among them, it was called the VOC, the Verenigde Oost-Indische Compagnie, or Dutch East India Company. By 1619 its trade network in Asia had grown so complex that it relocated its headquarters to present-day Jakarta, Indonesia, which it named Batavia, after the Germanic Batavian tribe who in Roman times had rebelled against Roman rule, and whom the Dutch had come to regard as their ancestors during their war with Spain.

Batavia was founded by Jan Pieterszoon Coen (1587–1629), who served as governor-general of the VOC in 1619–23 and again in 1627–29. With a fleet of 17 VOC ships, he expelled the local population, burned their town to the ground, and built a large fortress where the Ciliwung River empties into the sea. Within a couple of years, a port city intersected by a series of canals on the model of Amsterdam flourished on the river behind the fortress. Once Batavia was established, Coen turned his attention east to the Banda Islands, the only place where the trees that produced nutmeg and mace grew. The VOC insisted on holding a monopoly on trade; however, the inhabitants of one of the islands, Neira, were selling their spices to others. In retaliation, Coen slaughtered all but a few hundred of the island's 15,000 people, a massacre that is remembered in Bandanese dance to this day.

Already in Coen's time, the VOC functioned as a global enterprise. In the catalogue to a 2016 exhibition organized by the Rijksmuseum in Amsterdam and the Peabody Essex Museum in Salem, Massachusetts, *Asia in Amsterdam*, Coen himself is quoted: "With Gujarat textiles we can barter for pepper and gold on the coast of Sumatra; rials [the silver reales from Potosí] and cottons from the [Coromandel] coast [of southeastern India] for the pepper in Bantam; sandal-wood, pepper, and rials we can barter for Chinese goods and Chinese gold; we can extract silver from Japan with Chinese goods … and rials from Arabia for spices and various other trifles—one thing leads to another."

By the time Pieter Cnoll was appointed chief merchant in Batavia in 1663, responsible for all the VOC's accounts in Asia, this trade allowed him to live in a certain luxury, as his family portrait by Jacob Jansz. Coeman underscores (Fig. **22.3**). Their fine attire and jewelry attest to their rank, as do the two Balinese slaves who stand in the shadows behind them. (Slavery was practiced widely across Asia, and slaves were among the things that the VOC traded.) But most interesting is Madame Cnoll. She is Cornelia van Nijenrode, born in 1629 to a Japanese courtesan, Surishia, and the head of the Dutch trading station in Hirado, Japan, Cornelis van Nijenrode, who died in 1633 just before

Fig. 22.3 Jacob Jansz. Coeman, *Pieter Cnoll and Cornelia van Nijenrode with Their Daughters and Malay Slaves*, 1665. Oil on canvas, 51⅛" × 75". Rijksmuseum, Amsterdam, SK-A-4062. The male slave was named Untung (Malay for "profit" or "luck"), and held what was considered the high status of umbrella carrier in the Cnoll household.

his planned move to Batavia. Cornelia was, at her father's insistence, raised a Christian in an orphanage in Batavia, and she married Cnoll in 1652. As the Spanish had discovered in Mexico, Dutch women did not find the prospect of life in the remote reaches of the globe particularly attractive, and the VOC encouraged its officers to marry local women. Coeman's painting—not just in the luxurious surroundings of its subjects, but in the very fact that it was commissioned by the family—testifies to just how high Cornelia had risen.

At its height in the early eighteenth century, the VOC employed some 40,000 people—Dutch, European, and Asian. Its fleet of more than 100 ships traded between some 600 stations that spanned half the globe, from the Cape of Good Hope to Japan. It paid an annual dividend of 18 percent, and it made Holland rich.

Tulipomania

No single incident captures Amsterdam's commercial success and the wealth at its disposal better than the great tulip "madness" of 1634 to 1637. During those three years, frenzied speculation in tulip bulbs nearly ruined the entire Dutch economy. The tulip had arrived in Europe in 1554, when the Austrian Habsburg ambassador to the court of Suleiman the Magnificent (1494–1566) in Constantinople shipped home a load of bulbs for the enjoyment of the royal court. Its Turkish origin lent the flower a certain exotic flavor (the word tulip, in fact, derives from the Turkish word for "turban"), and soon the tulip became the flower of fashion throughout Northern Europe. The more flamboyant and extravagant a tulip's color, the more it was prized.

Especially valued were examples of what the Dutch called a "broken" tulip. Tulips, by nature, are a single color—red or yellow, for instance—but in any planting of several hundred bulbs, a single flower might contain feathers or flames of a contrasting hue. Offsets of these "broken" flowers would retain the pattern of the parent bulb, but they produced fewer and smaller offsets than ordinary tulips. Soon, the bulbs of certain strains—most notably the *Semper Augustus*, with its red flames on white petals—became the closely guarded treasures of individual botanists.

We know, today, that a virus spread from tulip to tulip by the peach potato aphid causes the phenomenon of "breaking." The flower produces fewer and smaller offsets because it is diseased. As a result of this deterioration, by 1636 there were reportedly only two of the red-flamed *Semper Augustus* bulbs in all of Holland. The one in Amsterdam sold for 4,600 florins (15 or 20 times the annual income of a skilled craftsman at the time), a new carriage and harness, and two gray horses. Some idea of what value these prices represent can be understood by looking at some of the "in-kind" dealings that transpired in the tulip trade. In his history of the Dutch seventeenth century, *The Embarrassment of Riches*, Simon Schama reports that one man, presumably a farmer leaping into the market, paid two last of wheat (approximately 4,000 pounds), four of rye, four fat oxen, eight pigs, a dozen sheep, two oxheads of wine, four tons of butter, a thousand pounds of cheese, a bed, some clothing, and a silver beaker, for a single Viceroy bulb, valued at 2,500 guilders. Presumably the farmer planned on planting it and selling its offsets for 2,500 guilders each.

Fig. 22.4 From the Tulip Book of P. Cos, 1637. Wageningen University and Research Center Library, the Netherlands. In the first half of the seventeenth century, 34 "tulip books," cataloging the flower's many varieties, were published in Holland.

We cannot know for certain what caused the burst of speculation in "broken" flowers, although the Dutch taste for beauty certainly contributed to the madness. Tulip books, illustrated nursery catalogs of available bulbs and the flowers they produced, added to the frenzy (Fig. **22.4**). But by the fall of 1635, trade in actual bulbs had given way to trade in promissory notes, listing what bulbs would be delivered and at what price. At the stock exchange in Amsterdam and elsewhere in Holland, special markets were established for their sale. Suddenly, good citizens sold all their possessions, mortgaged their homes, and invested their entire savings in "futures"—bulbs not yet even lifted from the ground. In a matter of months, the price of a single

Switsers bulb, a yellow tulip with red feathers, soared from 60 to 1,800 guilders. Speculation was so frenzied that the paper "futures" began to be traded, not the bulbs themselves, and when in the winter of 1637 the tulip market faced the prospect of fulfilling paper promissory notes with actual bulbs, it collapsed. Suddenly no one could sell a tulip bulb in Holland for any price.

In Amsterdam, the assembled deputies declared any debt incurred in the tulip market before November 1636 null and void, and the debt of any purchaser whose obligation was incurred after that date to be considered met upon payment of 10 percent. Those holding debts were outraged, but the court in Amsterdam unanimously ruled that any debt contracted in gambling, which they deemed the tulip market to be, was no debt at all under the law.

The Dutch Reformed Church: Strict Doctrine and Whitewashed Spaces

The excesses of Dutch society so evident in the tulip craze were strongly countered by the conservatism of the Calvinist Dutch Reformed Church, which actively opposed speculation in the tulip market. In the 1560s, as the Spanish had tried to impose Catholicism upon the region, many Dutch religious leaders, almost all of them Calvinist (see Chapter 17), fled the country. Finally, in October 1571, 23 of these Calvinist leaders gathered in Emden, Germany, and proclaimed the creation of the Dutch Reformed Church. By 1578, they had returned to Holland.

This strict Calvinist sect did not become, as many believe, an official state religion, but the state did require that any person in public service be a member of the Dutch Reformed Church. The Church was itself split over questions of doctrine: In the saving of souls, could good deeds overcome predestination? On one side were those who held that the faith and good deeds of the believer might to some extent affect the bestowal of grace and their ultimate salvation. Opposing them were those who believed that salvation was predestined by God. Those who would ascend to heaven (the elect) were numbered from the moment of birth, and no good works could affect the outcome of the damned. By 1618, this doctrinal conflict would erupt into what narrowly escaped becoming civil war, and those who believed in good works were soon expelled from the Reformed Church, their leader tried for treason and beheaded, and others imprisoned.

The doctrinal rigidity of the Reformed Church is reflected in the austerity of its churches. Ever since the Calvinists' iconoclastic destruction of religious imagery in 1566 (see Chapter 17), when Van Eyck's *Ghent Altarpiece* at St. Bavo Cathedral in Ghent (see Figs. 16.5 and 16.6) was dismantled and hidden away, Dutch churches had remained devoid of paintings. A depiction of a different church dedicated to Saint Bavo, in Haarlem (Fig. **22.5**), painted by Pieter Saenredam (1597–1665) nearly a century after the removal of the *Ghent Altarpiece*, shows a typical Dutch Reformed interior stripped of all furnishings, its walls whitewashed by Calvinist iconoclasts. A single three-tiered chandelier hangs from the ceiling above three gentlemen whom Saenredam includes in the composition in order to establish the almost spiritual vastness of the medieval church's interior. This stripped-down, white space is meant to reflect the purity and propriety of the Reformed Church and its flock.

THE SCIENCE OF OBSERVATION

How did developments in philosophy and science challenge the authority of the Church?

As stark and almost barren as Saenredam's painting is, it nevertheless reveals an astonishing attention to detail, capturing even the texture of the whitewashed walls with geometric precision. This attention to detail, typical of Northern Baroque art, reflects both religious belief and scientific discovery. Protestants believed that all things had an inherent spiritual quality, and the visual detail in Northern art was understood as the worldly manifestation of the divine. But perhaps more significantly, new methods of scientific and philosophical investigation focused on the world in increasing detail. In the seventeenth century, newly invented instruments allowed scientists to observe and measure natural phenomena with increasing accuracy. Catholics and Protestants were equally appalled at many of the discoveries, since they seemed to challenge the authority of scripture. Also problematic for both religions were new methods of reasoning that challenged the place of faith in arriving at an understanding of the universe. According to these new ways of reasoning, *Scientia*, the Latin word for "knowledge," was to be found in the world, and not in religious belief.

Francis Bacon and the Empirical Method

One of the most fundamental principles guiding the new science was the proposition that, through the direct and careful observation of natural phenomena, one could draw general conclusions from particular examples. This process is known as **inductive reasoning**, and with it, scientists believed they could predict the workings of nature as a whole. When inductive reasoning was combined with scientific experimentation, it produced a manner of inquiry that we call the **empirical method**. The leading advocate of the empirical method in the seventeenth century was the English scientist Francis Bacon (1561–1626). His *Novum Organum Scientiarum* (*New Method of Science*), published in 1620, is the most passionate plea for its use. "One method of delivery alone remains to us," he wrote, "which is simply this: we must lead men to the particulars themselves, and their series and order; while men on their side must force themselves for a while to lay their notions by and begin to familiarize themselves with facts." The greatest obstacle to human understanding, Bacon believed, was "superstition, and the blind and immoderate zeal of religion." For

Fig. 22.5 Pieter Saenredam, *Interior of the Choir of St. Bavo's Church at Haarlem,* 1660. Oil on panel, 27⅞" × 21⅝". Worcester Art Museum, Worcester, MA. Charlotte E.W. Buffington Fund. 1951.29. The only adornments of the space are an escutcheon, bearing the coat of arms of Saint Bavo, hanging on the left wall, and a memorial tablet on the right.

Bacon, Aristotle represented a perfect example (see Chapter 5). While he valued Aristotle's emphasis on the study of natural phenomena, he rejected as false doctrine Aristotle's belief that the experience coming to us by means of our senses (things as they *appear*) automatically presents to our understanding things as they are. Indeed, he felt that reliance on the senses frequently led to fundamental errors.

A proper understanding of the world could only be achieved, Bacon believed, if we eliminate the errors in reasoning developed through our unwitting adherence to the false notions that every age has worshiped. He identified four major categories of false notion, which he termed Idols, all described in his *Novum Organum Scientiarum* (see **Reading 22.1**, page 763). The first of these, the Idols of the Tribe, are the common fallacies of all human nature, derived from the fact that we trust, wrongly, in our senses. The second, the Idols of the Cave, derive from our particular education, upbringing, and environment—an individual's religious faith or sense of his or her ethnic or gender superiority or inferiority would be examples. The third, the Idols of the Market Place, are errors that occur as a result of miscommunication, words that cause confusion by containing, as it were, hidden assumptions. For instance, the contemporary use of "man" or "mankind" to refer to people in general (common well into the twentieth century) connotes a world view in which hierarchical structures of gender are already assumed. Finally, there are the Idols of the Theater, the false dogmas of philosophy—not only those of the ancients but those that "may yet be composed." The object of the empirical method is the destruction of these four Idols through the application of intellectual objectivity. Bacon argued that rather than falling back on the preconceived notions and opinions produced by the four Idols, "Man, [using the last idol] being the servant and interpreter of Nature, can do and understand so much and so much only as he has observed in fact or in thought of the course of Nature; beyond this he neither knows anything nor can do anything."

Bacon's insistence on the scientific observation of natural phenomena led, in the mid-1640s, to the formation in England of a group of men who met regularly to discuss his new philosophy. After a lecture on November 28, 1660, by Christopher Wren, the Gresham College Professor of

Astronomy and architect of St. Paul's Cathedral in London (see Chapter 24), they officially founded "a College for the Promoting of Physico-Mathematicall Experimentall Learning." The group met weekly to witness experiments and discuss scientific topics. Within a couple of years, the group became known as "The Royal Society of London for Improving Natural Knowledge," an organization that continues to the present day as the Royal Society. It is one of the leading forces in international science, dedicated to the recognition of excellence in science and the support of leading-edge scientific research and its applications.

René Descartes and the Deductive Method

Bacon's works circulated widely in Holland, where they were received with enthusiasm. As one seventeenth-century Dutch painter, Constantijn Huygens (1596–1687), put it in his *Autobiography*, Bacon offered the Dutch "most excellent criticism of the useless ideas, theorems, and axioms which, as I have said, the ancients possessed." But equally influential were the writings of the French-born René Descartes (1596–1650). Descartes (Fig. **22.6**), in fact, lived in Holland for over 20 years, from 1628 to 1649, moving between 13 different cities, including Amsterdam, and 24 different residences. It was in Holland that he wrote and published his *Discourse on the Method of Rightly Conducting the Reason and Seeking for Truth in the Sciences* (1637). As opposed to Bacon's inductive reasoning, Descartes proceeded to his conclusions by the opposite method of **deductive reasoning**. He began with clearly established general principles and moved from those to the establishment of particular truths.

Like Bacon, Descartes distrusted almost everything, believing that both our thought and our observational senses can and do deceive us. In his *Meditations on the First Philosophy*, he draws an analogy between his own method and that of an architect **(Reading 22.2)**:

READING 22.2

from René Descartes, *Meditations* (1641)

Throughout my writings I have made it clear that my method imitates that of the architect. When an architect wants to build a house which is stable on ground where there is a sandy topsoil over underlying rock, or clay, or some other firm base, he begins by digging out a set of trenches from which he removes the sand, and anything resting on or mixed in with the sand, so that he can lay his foundations on firm soil. In the same way, I began by taking everything that was doubtful and throwing it out, like sand.

Descartes wants, he says, "to reach certainty—to cast aside the loose earth and sand so as to come upon rock and clay." The first thing, in fact, that he could not doubt was that he was thinking, which led him to the inevitable conclusion that he must actually exist in order to generate thoughts about his own existence as a thinking individual, which he famously expressed in *Discourse on Method* in the Latin phrase "*Cogito, ergo sum*" ("I think, therefore I am"). At the heart of Descartes's thinking—we refer to Descartes's method as *Cartesian*—is an absolute distinction between mind and matter, and hence between the metaphysical soul and the physical body, a system of oppositions that has come to be known as *Cartesian dualism*. The remarkable result of this approach is that, beginning with this one "first principle" in his *Discourse on Method*, Descartes comes to prove, at least to his own satisfaction, the existence of God. He would repeat this argument many times, most formally in his 1641 *Meditations*, but the logic, simply stated, is as follows: (1) I think, and I possess an idea of God (that is, the idea exists in me and I can be aware of it as an object of my understanding); (2) The idea of God is the idea of an actually infinite perfect being; (3) Such an idea could only originate in an actually infinite perfect being ("it had been placed in me by a Nature which was really more perfect than mine could be, and which had within itself all the perfections of which I could form any idea"); and (4) Therefore, there is an infinitely perfect being, which we call God. This line of thinking established Descartes as one of the most important founders of **deism** (from the Latin *deus*, "god"), the brand of faith that argues that the basis of belief in God is reason and logic rather

Fig. 22.6 Frans Hals, *Portrait of René Descartes*, 1649. Oil on wood, 30½" × 27". Musée du Louvre, Paris. Hals was renowned for his portraiture. Here he seems to reveal the very essence of Descartes. The philosopher appears to be thinking, with some evident amusement, perhaps about the prospect of any painter "capturing" his essence on canvas.

than revelation or tradition. Descartes did not believe that God was at all interested in interfering in human affairs. Nor was God endowed, particularly, with human character. He was, in Descartes's words, "the mathematical order of nature." Descartes was himself a mathematician of considerable inventiveness, founding analytic geometry, the bridge between algebra and geometry crucial to the invention of calculus. The same year that he published *Discourse on Method*, Descartes also published a treatise entitled *Optics*. There, among other things, he used geometry to calculate the angular radius of a rainbow (42 degrees).

Johannes Kepler, Galileo Galilei, and the Telescope

Descartes's *Optics* was built upon the earlier discoveries in optics of the German mathematician Johannes Kepler (1571–1630). In fact, Descartes was so taken with Kepler's insights that he included Kepler's illustration of the working of the human eye in his *Optics* (Fig. **22.7**). Kepler had made detailed records of the movements of the planets, substantiating Copernicus's theory that the planets orbited the Sun, not the Earth (see *Continuity & Change*, page 677). The long-standing tradition of a **geocentric** (earth-centered) cosmos was definitively replaced with a **heliocentric** (sun-centered) theory. Kepler also challenged the traditional belief that the orbits of the planets were spherical, showing that the five known planets moved around the Sun in elliptical paths determined by the magnetic force of the Sun and their relative distance from it. His interest in optics was spurred on when he recognized that the apparent diameter of the Moon differed when observed directly and when observed using a **camera obscura**, a device that temporarily reproduces an image on a screen or wall (Fig. **22.8**).

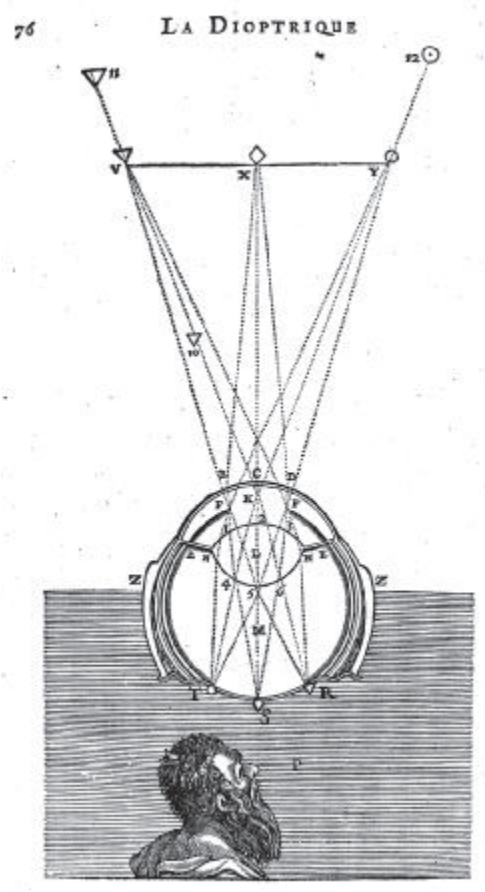

Fig. 22.7 Illustration of the theory of the retinal image as described by Johannes Kepler, from René Descartes, *Optics* (*La Dioptrique*), Leiden, 1637. Descartes was more interested in what happened to the image in the brain after it registered itself on the retina, while Kepler was interested in the physical optics of the process itself.

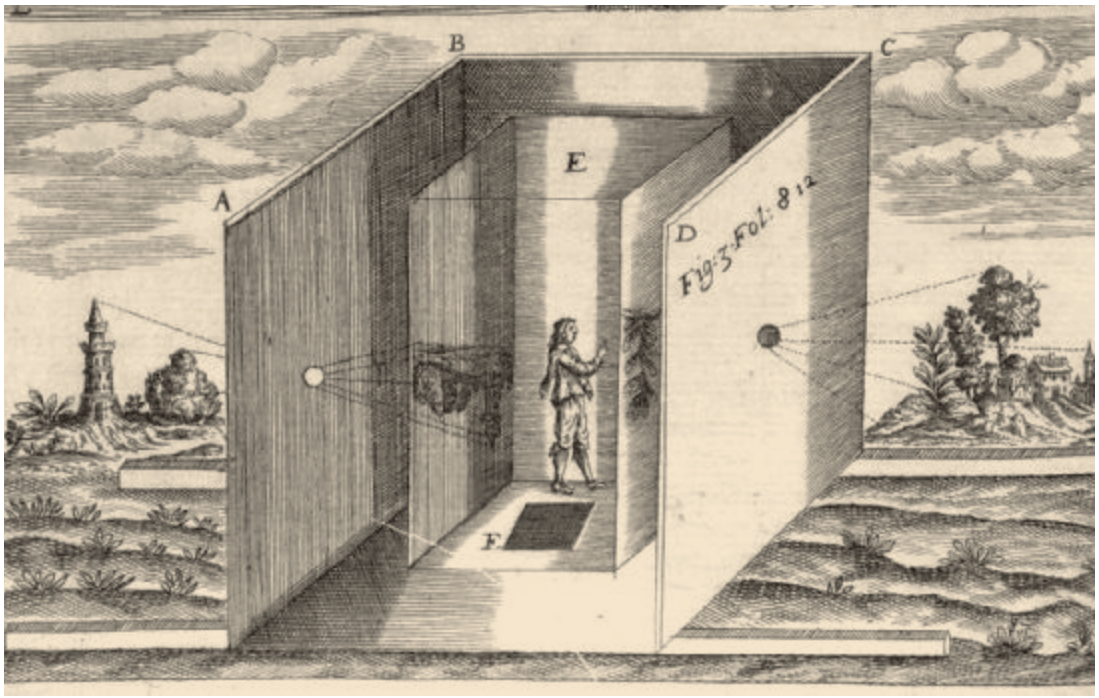

Fig. 22.8 An artist drawing in a large camera obscura. The camera obscura works by admitting a ray of light through a small hole that projects a scene, upside down, directly across from the hole. Recent studies have shown that Vermeer made extensive use of such a device.

Meanwhile, in Italy, Kepler's friend Galileo Galilei had improved the design and magnification of the telescope (invented by a Dutch eyeglass-maker, Hans Lippershey). Through the improved telescope, Galileo saw and described the craters of the Moon, the phases of Venus, sunspots, and the moons of Jupiter. Galileo also theorized that light takes a certain amount of time to travel from one place to the next, and that either as a particle or as a wave, it travels at a measurable uniform speed. He proposed, too, that all objects, regardless of shape, size, or density, fall at the same rate of acceleration—the law of falling bodies, or gravity. Inspired by Galileo's discoveries, Kepler wrote a study on the optical properties of lenses, in which he detailed a design for a telescope that became standard in astronomical research. Kepler's and Galileo's work did not meet with universal approval. The Church still officially believed that the Earth was the center of the universe and that the Sun revolved around it. Protestant churches were equally skeptical. The theories of Kepler and Galileo contradicted certain passages in the Bible. Joshua, for instance, is described in the Old Testament as making the Sun stand still, a feat that would be impossible unless the Sun normally moved around the Earth: "So the sun stood still in the midst of the heaven, and hasted not to go down about a whole day. And there was no day like that before it or after it" (Joshua 10:13–14). Furthermore, it seemed to many that the new theories relegated humankind to a marginal space in God's plan. Thus, in 1615, when Galileo was required to defend his ideas before Pope Paul V in Rome, he failed to convince the pontiff. He was banned from both publishing and teaching his findings. When his old friend Pope Urban VIII was elected pope, Galileo appealed Paul's verdict, but Urban went even further. He demanded that Galileo admit his error in public and sentenced him to life in prison. Through the intervention of friends, the sentence was reduced to banishment to a villa outside Florence. Galileo was lucky. In 1600, when the astronomer Giordano Bruno had asserted that the universe was infinite and without center and that other solar systems might exist in space, he was burned at the stake.

Antoni van Leeuwenhoek, Robert Hooke, and the Microscope

In the last decade of the sixteenth century, two Dutch eyeglass-makers, Hans Lippershey and Zaccharias Janssen, discovered that if one looked through several lenses in a single tube, nearby objects appeared greatly magnified. This discovery led to the compound microscope (a microscope that uses more than one lens). Early compound microscopes were able to magnify objects only about 20 or 30 times their natural size. Another Dutch lens-maker, Antoni van Leeuwenhoek (1632–1723), was able to grind a lens that magnified over 200 times. The microscope itself was a simple instrument, consisting of two plates with a lens between, which was focused by tightening or loosening screws running through the plates. Two inches long and one inch across, it could easily fit in the palm of one's hand. Leeuwenhoek was inspired by the 1665 work *Micrographia*

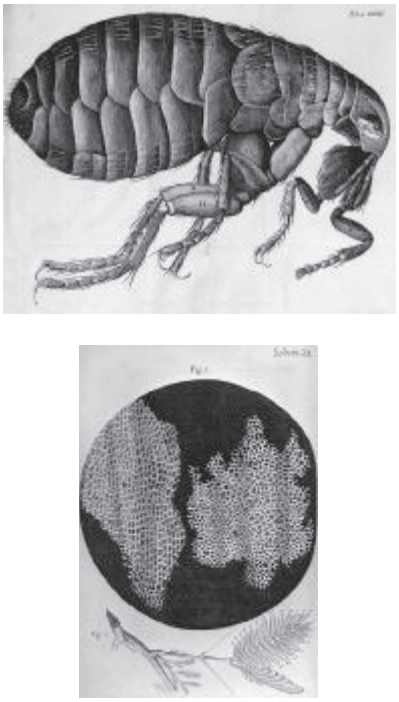

Fig. 22.9 Robert Hooke, illustrations from *Micrographia*: a flea (top), and a slice of cork (bottom), London, 1665. Hooke was the first person to use the word *cell* to describe the basic structural unit of plant and animal life.

by Robert Hooke, Curator of Experiments for the Royal Society of London. It was illustrated by drawings of Hooke's observations with his compound microscope: a flea that he said was "adorn'd with a curiously polish'd suite of sable Armour, neatly jointed," and a thin slice of cork, in which he observed "a Honey-comb [of] … pores, or cells"—actually, cell walls (Fig. **22.9**).

Leeuwenhoek wrote letters to the Royal Society of London to keep them informed about his observations. In his first letter, of 1673, he described the stings of bees. Then, in 1678, he wrote to the Royal Society with a report of discovering "little animals"—actually, bacteria and protozoa—and the society asked Hooke to confirm Leeuwenhoek's findings, which he successfully did. For the next 50 years, Leeuwenhoek's regular letters to the Royal Society, describing, for the first time, sperm cells, blood cells, and many other microscopic organisms, were printed in the Society's *Philosophical Transactions*, and often reprinted separately. In 1680, Leeuwenhoek was elected a full member of the Society.

Many scholars believe that Leeuwenhoek served as the model for the 1668–69 painting by Johannes Vermeer, *The Geographer* (see Fig. 22.1). Leeuwenhoek was interested in more than microscopes. A biographer described him six years after his death as equally interested in "navigation, astronomy, mathematics, philosophy, and natural science." He would serve as trustee for Vermeer's estate in 1676, and we know that Vermeer actively used a camera obscura to plan his canvases, so the painter shared something of Leeuwenhoek's fascination with lenses.