

CONTENTS

Abbreviations vii

INTRODUCTION 1

CHAPTER 1 The Cardinal's Perspective 31

CHAPTER 2 Minim Deformation and Revelation 75

CHAPTER 3 Jesuit Deformation and Meditation 119

CHAPTER 4 Obscurity Justified 161

CHAPTER 5 Caramuel's Architectural Reforms 197

CHAPTER 6 Plumier's Ivories and the Incomprehensible 231

Acknowledgments 263

Notes 266

Bibliography 300

Index 315

Image Credits 324



INTRODUCTION

AROUND 1665–1667, biographer Giovanni Pietro Bellori (1613–1696) described San Carlo alle Quattro Fontane in Rome as both “ugly and deformed” (*brutta et deforme*). Scribbling in the margins of a book, he dismissed the church’s architect as “a most ignorant goth and a corrupter of architecture, the infamy of our century” (*gotico ignorantissimo et corruttore dell’architettura, infamia dal nostro secolo*) (Figs. 1 and 2).¹ Bellori’s objections to Francesco Borromini’s (1599–1667) architecture would be sustained by other critics in subsequent centuries: the Italian art and architectural historian, theorist, and biographer Francesco Milizia (1725–1798), speaking on behalf of neoclassicism, would later characterize San Carlo as “Borromini’s greatest delirium” (*Il delirio maggiore del Borromini*).² San Carlo’s double S-curved facade—the first element of the church that visitors confront—especially bothered Milizia: “So many straight, concave, and convex lines, with so many columns upon columns of different shapes, and windows and niches and sculptures in such a small facade, are pitiful things.”³

Bellori and others objected to San Carlo because they believed it violated norms of classical architecture and, in the process, cast aside the classical ideal of clarity. An unnamed grand cleric criticized Borromini for showing “too much desire to go beyond the rule” (*troppa voglia di uscir di regola*).⁴ With the undulating facade, Borromini and his nephew—Bernardo Castelli-Borromini (1643–1709), who completed the facade’s upper area—render deformed, to borrow Bellori’s term, the morphological clarity and sense of apparent structural stability that classical buildings convey with rectangular grid schema and parallel planes.⁵ San Carlo’s lower convex center bay is wider than the concave framing bays in the same story, which produces a dynamic sense of rhythm in the facade’s lower level. Whereas the lower story alternates between concave and convex curves, the upper level features only concave bays—and this divergence from the pattern below creates a strain that magnifies the facade’s undulating movement. The angular cornice that unites the concave bays above the upper story is broken

Detail of fig. 2

Fig. 1. Giovanni Pietro Bellori's annotation in the margins of Giovanni Baglione's *Vite*, 1642. 9.21 × 6.38 in (23.4 × 16.2 cm). Accademia Nazionale dei Lincei, Rome [31.E.15].

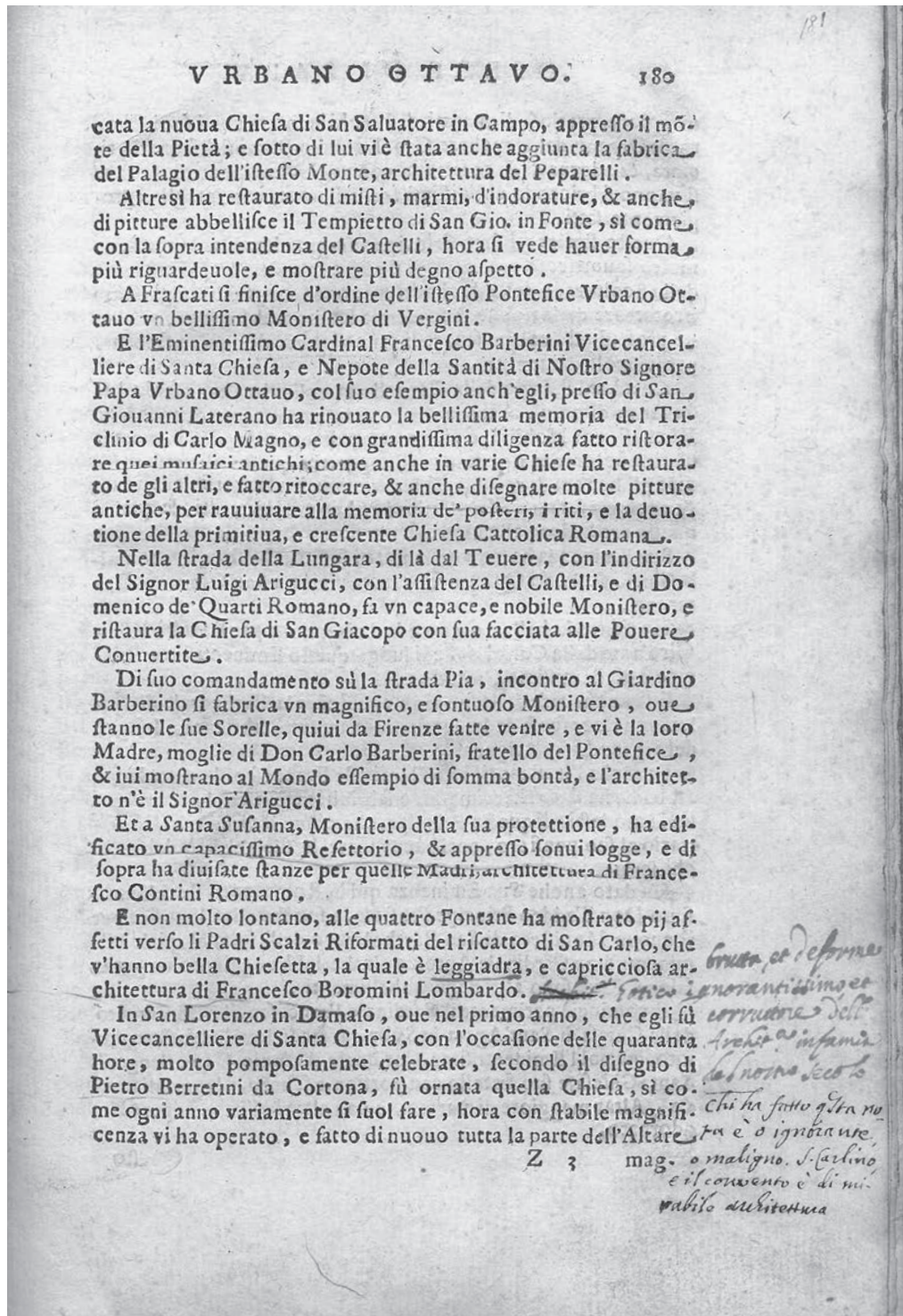




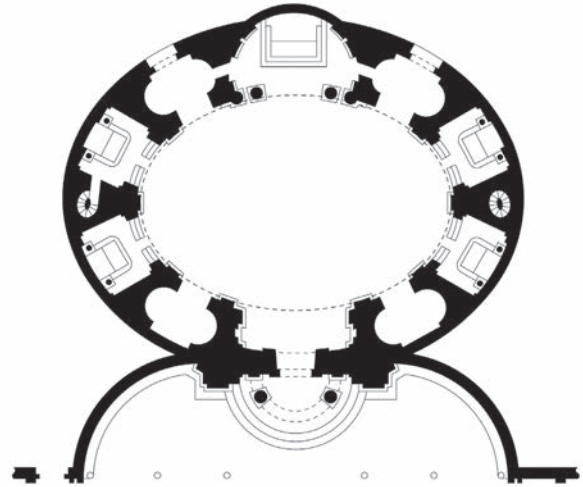
Fig. 2. San Carlo alle Quattro Fontane, lower area built in 1665–1667 by Francesco Borromini and upper area built in 1675–1677 by Bernardo Castelli-Borromini, exterior view of facade.

by a concave medallion crowned with two scrolls; these join at an acute angle, imparting to the cornice a jagged profile that adds drama to the skyline.

Although facades on single concave curves or juxtaposing concave and convex curves could be found on structures dating to antiquity (including the so-called Temple of Romulus on the Via Sacra, which featured a single concave curve), and were known in seventeenth-century Italy, early modern critics noted the incomprehensibility and the extreme apparent instability of Borromini's dynamic forms as conflicting with classical architecture's perceived regularity and steadiness.⁶ A guidebook to Rome written between 1677 and 1681 describes another enigmatic facade by the architect as "distant" from antique simplicity: "Borromini, who has always sought to distance himself from the regular simplicity of the antique, has done so much [in the facade of Sant'Agnese in Agone] to turn and to turn again convex and concave lines that eyesight, which tires itself in searching therein a path, is not entirely pleased, even if at first this style has a certain something [*un je ne sais quoi*] that surprises and that prevents the sight from disapproving of it entirely."⁷ After accentuating Borromini's dissociation from more legible antique models, the anonymous author notes the facade's dizzying effect on beholders—the quest for clarity and guidance amid lines that bend in opposite directions exhausts and ultimately frustrates the eye, although it is not completely displeasing.

Fig. 3. Gian Lorenzo Bernini, Sant'Andrea al Quirinale, 1670–1672, exterior view of facade.

Fig. 4. Gian Lorenzo Bernini, plan of Sant'Andrea al Quirinale, 1658–1670.



San Carlo is just one example of the wide-ranging visual phenomenon, known in the seventeenth century as “deformation,” that is at the center of this book. Deformation—defined in the period, as we have seen, against an ideal that an entity fails to meet and balanced against the related term “reformation” that restores the ideal—characterized architecture, images, sculptures, and other works across media. Deformations depart from ideals—not necessarily to challenge those ideals but to at least invite consideration of how we perceive and value them. During the periods that German Lutheran historians of the eighteenth century would label the “Reformation” and the “Counter Reformation,” deformations became prevalent across Europe, appearing in paintings, prints, sculptures, as well as in churches and secular structures.⁸ Artists and theoreticians like Borromini, Mario Bettini (1582–1657), Jean-François Niceron (1613–1646), Emanuel Maignan (1601–1676), and Andrea Pozzo (1642–1709) experimented with deformation in church architecture, in the gardens, libraries, and corridors of palaces and convents, and in printed books and pedagogical materials. This book will consider in particular Catholic Reformation paintings, prints, sculptures, and architectures produced by Italian and French artists and architects in seventeenth-century Italy, the center of the Catholic Church, although I also discuss works created in broader Catholic geographies within and beyond Europe.

In undermining the ideals of classical and Renaissance art and architecture—and in particular the classical rhetorical ideals of clarity and comprehensibility—these deformations evoked states of confusion or mental perturbation that precluded the viewer from fully exercising his or her faculties. Although (at least momentary) incomprehensibility was a common feature of deformations—in the sense that they could not be grasped immediately by the understanding—there was no single experience of deformation. A deformation could challenge verbal capacity, as observers struggled to articulate their visual experience in language,



Fig. 5. Pantheon, c. 125–128 CE, exterior view of facade, piazza, and fountain.

or it could defy understandings of facture, as observers—even sophisticated observers—struggled to imagine how an object or visual effect could have been generated.

Some seventeenth-century visitors to San Carlo recorded their experiences of this deliberate incomprehensibility. Jean-Baptiste Antoine Colbert (1651–1690), Marquis de Seignelay and son of the French statesman and chief minister to Louis XIV (1638–1715), was among the visitors that San Carlo perplexed. He arrived at the structure on April 10, 1671, after having visited Sant’Andrea al Quirinale, located further down the Via Pia. Sant’Andrea did not strike the marquis as strange (Figs. 3 and 4). He describes in straightforward terms this church by Gian Lorenzo Bernini (1598–1680), whose plan is easily recognized as an oval with entrance and altar opposed across the oval’s short axis: “a very small church, but very pleasant and of a figure that pleases” (*une très-petite église, mais fort agréable et d’une figure qui plait*).⁹ Bernini’s design respected the dignity of classical shapes; even if he elongated the classical circle into an oval in Sant’Andrea, he still employed centric geometry.¹⁰ The comparative simplicity and intelligibility of the plans for Sant’Andrea, begun seventeen years after San Carlo had been built, has been read as “a kind of mute architectural criticism” of Borromini’s more convoluted designs, which are not as clear and easy to understand when one visits the church.¹¹

While the marquis might have arrived at San Carlo most immediately from Sant’Andrea, his expectations for clear and legible plans—like the expectations of other seventeenth-century visitors—were ultimately informed by his knowledge of classical structures like the Pantheon, located twenty minutes by foot from San Carlo (Fig. 5). Three days after visiting San Carlo and Sant’Andrea, on Monday, April 13, the marquis went to the Pantheon, which alongside the

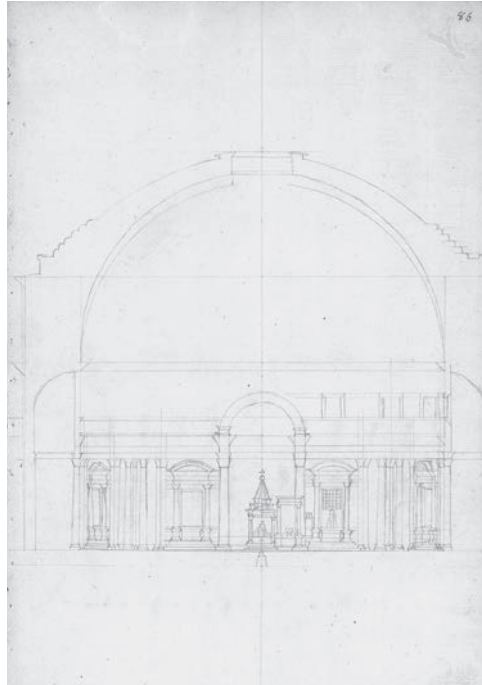
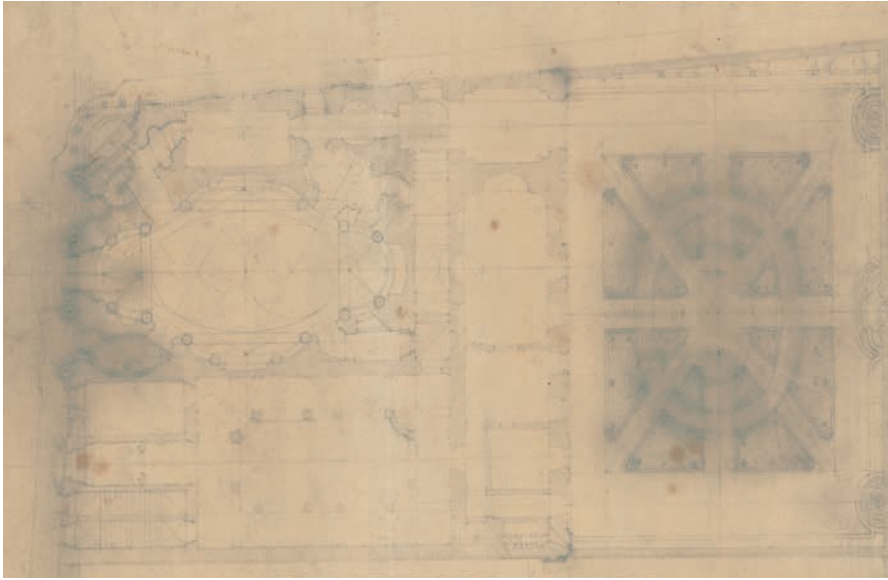


Fig. 6. Anonymous seventeenth-century drawing of an orthogonal section through the Pantheon. Graphite drawing on paper, 16.1 × 10.8 in (40.9 × 27.4 cm). Gabinetto dei Disegni, Castello Sforzesco, Milan [SM 5,99].

so-called Maison Carrée of Nîmes is regarded as the best-preserved temple of Roman antiquity. The three-dimensional profile of this building, which features an implied sphere nestled within a cylinder, was directly intelligible to the marquis, who observed in his diary that “the height of this vault is equal to its diameter” (*la hauteur de cette voûte est égale à son diamètre*).¹² The geometric forms of the Pantheon—its sphere and cylinder—can be appreciated in an orthogonal section through the building by an anonymous seventeenth-century draughtsman (Fig. 6).

Whereas the marquis finds both Sant’Andrea and San Carlo “pleasing,” there are no oddities in his description of Sant’Andrea, while his characterization of San Carlo stresses the bizarre: “although this church is very bizarrely built, it is surprising and pleasing at first sight” (*quoique cette église soit très-bizarrement bâtie, elle surprend et plaît d’abord*).¹³ That Borromini was sensitive to San Carlo’s distance from the comprehensibility of Italian classicism is suggested by the plans he drew for San Carlo in the early 1660s, as he prepared to publish his works. Albertina 173 reduces and idealizes the church (Fig. 7).¹⁴ The plan indicates that the church’s design is based on two triangles, positioned in such a way that they share one side and make a diamond, and it features apses created from half circles and half ovals that extend from the diamond’s points.¹⁵

The marquis was not alone in expressing his perplexity at San Carlo, whose enigmatic layout exercised visitors from all over the world.¹⁶ The church’s chronicler, a friar named Juan di San Bonaventura, reports that once the church was built, German, Flemish, French, Italian, Spanish, and Indian visitors requested plans, hoping to make sense of its confusing forms.¹⁷ And yet for a long time Borromini kept his plans for San Carlo a secret, even from Fra Juan, and unfortunate circumstances meant they would remain largely unknown until they were finally



published in the 1950s and '60s.¹⁸ As a result, San Carlo's form continued to bewilder visitors well into modern times. Leo Steinberg recounts that twelve respected scholars in the nineteenth and twentieth centuries would examine San Carlo and provide twelve distinct rationales supposedly underlying the structure's forms.¹⁹

If observers' most immediate response to San Carlo's facade and plan is perplexity, their confusion increases as they more closely examine the church's interior details. A visitor whose understanding of architecture has been informed by classical structures might be especially confused on noticing Borromini's treatment of San Carlo's columns: whereas the capitals of half the columns inside the church feature volutes positioned in the conventional fashion, with scrolls that spiral outward, the capitals of the other columns have inverted volutes, their scrolls spiraling inward (Fig. 8). The Marquis de Seignelay was among those perturbed by this aspect of Borromini's design, to the point of forgetting to mention that half the volutes follow the conventional form: "In this church there are sixteen columns whose capitals are composed so strangely that the volutes turn inward instead of outward."²⁰ Capitals with inverted volutes were in fact produced in antiquity—for instance, in the villa of Hadrian (76–138 CE) at Tivoli (118–138 CE)—and then well into the fifteenth century, with a renewed interest in the motif after 1590—for instance, in the facade by Giacomo della Porta (1532–1602) for San Giuseppe dei Falegnami.²¹ This long history of inverted volutes underlines the complexity of Borromini's violation of classical norms, insofar as some of his alleged transgressions involved the transposition of classical motifs, and often in a systematic fashion.²² And yet, even a viewer familiar with this history would have confronted Borromini's refusal of immediate comprehensibility. Despite a long tradition justifying the use of inverted volutes, the contrast Borromini creates by using two, apparently competing, types of classical volutes in the same structure invites puzzlement and signals that something is amiss, that there is a gap between the norms of classicism and Borromini's confusing ornamental juxtapositions.²³

Fig. 7. Francesco Borromini, plan of San Carlo alle Quattro Fontane. Pencil on paper, 12.2 × 18.5 in (31 × 47 cm). The Albertina Museum, Vienna [Alb. 173].

Fig. 8. Francesco Borromini, San Carlo alle Quattro Fontane, 1638–1641, interior view of capitals of columns.

Even so, within this historical moment, the very things that made some contemporaries label San Carlo as deformed, ugly, and confusing could also make it compelling. Here we might recall that the marquis described San Carlo as “pleasing,” as well as bizarre. If Bellori, Bernini, and Milizia disliked Borromini’s deformations in San Carlo, Fra Juan reported that foreign visitors flocked to the church:

Every day we see these foreign people entering this church, moved to see it by the fame and reputation that it gained in their countries. And when they are in the church, they do nothing but look upward and turn themselves around throughout the whole church: all its objects are, in fact, placed in such a way that each one calls to the other, and the one stimulates the viewer to look at the other. And so, from the tribunes and balustrades of the church, we often see those foreigners act this way without having the force to leave nor to say anything for a while. And what is most amazing is that the more one looks at this church, the more pleasure it gives and seems like it is seen for the first time, and leaves a desire to come back to see it again. Why? Because they notice that it gives so much pleasure without ever boring them, but leaving them with a desire to see it again. It seems to me that this has a kind of similarity (insofar as one can say) to Divinity. ... The construction of this church when it is seen by these foreigners seems to suspend their intellect, because for a long time, you can see them incapable of doing anything but look at it. And after the visit, they return to see it, and this not only many times on one occasion, but a great number of times on many different days. If the church had either satisfied or bored them the first time (as earthly things do after having been seen), they would not return many times to see it again.²⁴

San Carlo demanded—and did so more intensely than would a classical structure—the temporal expansion of the beholding and comprehending process. Fra Juan compares the observation of San Carlo to the beatific vision: the building put observers in touch with something transcendent (akin to the experience of angels contemplating the Holy Spirit in heaven). The intellectual bafflement evoked by this building generated a near-mystical experience that observers—unable “to say anything for a while”—could not articulate with language. San Carlo induced a state of confusion and—insofar as it “seems to suspend their intellect”—of stupor, an intoxicating mental paralysis in which visitors could not explain what they experienced.

To experience the alleged deformations in Borromini’s architecture, then, was to move in some sense beyond the grasp of language. That deformations were incomprehensible, and that articulating one’s experience of a deformation with language was challenging, are manifest in the phrase *je ne sais quoi* used to characterize Borromini’s style in the late seventeenth-century guidebook to Rome I mentioned above. Translated literally as “I don’t know what,” the term had by then acquired a substantive role—denoting “a certain something.”²⁵ The words labeled an experience of the ineffable, as conceptualized in France from the late sixteenth through the late seventeenth centuries, an intense experience or perception of specific phenomena whose cause or explanation a subject finds difficult to express linguistically.

In a popular text that appeared in 1671, the critic and grammarian Dominique Bouhours (1628–1702), who taught at the Jesuit collège de Clermont in Paris, makes the *je ne sais quoi* the subject of a dialogue. According to his character Eugène, the *je ne sais quoi* “is much easier to perceive than to know ... it is in its nature to be incomprehensible and inexplicable.”²⁶ This remark highlights the limits on our capacity to express discernment: the *je ne sais quoi* can be recognized without being understood. The term could refer to mental refinement, tastes, and modes of behaving. And it could be employed in relation to a broad range of realms, including aesthetic and literary discourse, theology, the natural world, the passions, and culture.²⁷ Eugène’s interlocutor Ariste adds the difficulty in recognizing the *je ne sais quoi*: “Indeed, it is something so delicate, and so imperceptible, that it escapes the most penetrating and subtle intelligence.”²⁸ Ariste’s implication is clear: those who recognize the *je ne sais quoi* distinguish themselves as belonging to an elite group of discriminating observers. The suitability of applying the term to the divine was debated. The French lawyer and Jansenist Jean Barbier d’Aucour (1641–1694) and the French diplomat and civil servant Antoine de Courtin (1622–1685) criticized Bouhours for using the notion to refer to God.²⁹ The idea that God and grace could not be comprehended did not concern them; rather, they objected to marking God with a term they considered base. Thus, although the *je ne sais quoi* denotes the inexplicable and the visitors to San Carlo described by Fra Juan could not articulate with language their experiences in the church, the divine setting of the visitors’ mystical encounters of the ineffable indicates that Barbier d’Aucour and de Courtin would likely not have approved of using this term. They would presumably also have scoffed at the reaction recorded by the observer in the guidebook to Rome written between 1677 and 1681 on the style of the church of Sant’Agnese in Agone as having a certain something (*un je ne scais quoi*). Notwithstanding these disagreements over its use, the phrase’s popularity in seventeenth-century Europe offers evidence that this period witnessed a sensitivity to deliberate incomprehensibilities that functioned to solidify distinctions between the apparently discerning elites and more ordinary people, who could be stupefied by the incomprehensible but lacked the discernment to eventually describe their experience.

As Bouhours’s dialogue suggests, the *je ne sais quoi* gestures toward an understanding that a structure that broke the rules of classical rhetoric might not in fact fall short of those rules but could instead transcend them. If the deformation of San Carlo outraged some, it also helped draw visitors from all over the world to enter the church in stupefaction and awe. Seventeenth-century visual artists and architects, like their predecessors, relished in collaging formal motifs from disparate sources. To an extent unlike their predecessors, they also sought meaning in presenting shared visual languages—whether of classicism, single-point perspective, or other models—and engaging in a formal undoing or testing of those languages. By manipulating these visual languages, they achieved a heightened formal tension between the undoing or deformation and the reformation or conformation of formal motifs—thus arousing confusion among observers, cueing their attention, and leading them to appreciate and analyze the devices that separated the deformed from the ideal.³⁰ In the gap between the ideal and the distorted left by deformations, the Catholic Church elicited interest and drew the faithful into its arms and toward God, and ambitious families incited admiration to strengthen their positions within society.

Why Deformations?

This book asks why Catholic Reformation patrons, scholars, artists, architects, artisans, and observers were so drawn to visual and spatial deformations, how they used deformations, and what we might learn from their conscious manipulations of form. At first glance, the passion for deformation may seem counterintuitive. From antiquity through the start of the twentieth century, from Aristotle onward, Western thinkers elevated clarity and opposed ambiguity in rhetorical and philosophical writing and speech.³¹ Following Giulio Carlo Argan's observation in 1954 that baroque art, in order to affect and persuade observers, reconfigures representation in rhetorical terms, scholars have repeatedly called attention to the interrelations between sixteenth- and seventeenth-century Italian art theory and practice, on the one hand, and rhetorical theory, on the other.³² If we begin from the long-standing elevation of clarity as a rhetorical virtue and the concomitant criticism of obscurity as an obstacle to persuasive discourse—and the application of rhetorical principles in baroque visual art and architecture—we may find puzzling the investment within Catholic Reformation circles of deliberately incomprehensible deformations, artworks, and buildings that (like San Carlo alle Quattro Fontane) could be criticized for plunging observers into a perceptual confusion that was overcome only with difficulty.³³ This investment becomes less puzzling in the context of the parallel interest in rhetorical obscurity from antiquity onward, in such texts as, for example, *De finibus bonorum et malorum* (*On the Ends of Good and Evil*) by Cicero (106 BCE–43 BCE), who (at 2.15) draws a distinction between well-founded and objectionable obscurity.

Nevertheless, since the demand for clarity was also deeply embedded in Catholic Reformation policies, in line with the dominant norms of classical rhetoric, the popularity of deformations in seventeenth-century Catholic geographies might surprise. The twenty-fifth session of the Council of Trent, on December 3 and 4, 1564, framed sacred images in pedagogical terms: “Let the bishops diligently teach that by means of the stories of the mysteries of our redemption portrayed in paintings and other representations the people are instructed and confirmed in the articles of faith.”³⁴ This passage recalls the earlier, often-cited defense of images' didactic powers that appears in the letters of Gregory the Great (c. 540–604) to the Bishop of Marseilles.³⁵ Gabriele Paleotti (1522–1597), a controversial figure within the Church who was marginalized after Trent, would echo the Tridentine principles in a famous treatise printed in 1582 in Bologna.³⁶ There Paleotti—who became a cardinal in 1565 and then Bishop of Bologna the following year—unequivocally framed sacred images as rhetorical tools: “another very notable and important effect deriving from Christian pictures, which is to persuade the people, as orators do, and draw them, by means of pictures, to embrace anything pertinent to religion.”³⁷ Paleotti's later argument that the “principal end” of Christian images “to persuade persons to piety and order them toward God” helps to explain the decision by the Council of Trent to ban imagery with perplexing forms: “zeal and care should be exhibited by the bishops with regards to these things that nothing may appear that is disorderly or unbecoming and confusedly arranged.”³⁸

Indeed, the ban on perplexing forms—on deformation itself—was explicitly extended to churches. Saint Carlo Borromeo (1538–1584)—the cardinal and archbishop of Milan who actively promoted the Catholic Reformation and, perhaps ironically, to whom San Carlo alle Quattro Fontane is dedicated—prohibited deformations in all ecclesiastical buildings: “No

work, whatever it may be, shall be established, made, inscribed, fashioned, or expressed, that is ... deformed.”³⁹ Carlo Borromeo’s younger cousin, Federico Borromeo (1564–1631), who was Cardinal-Archbishop of Milan, likewise decried visual obfuscation in his 1624 treatise on sacred painting: “Although painters or sculptors can embellish and illustrate history as much as they like, they must not try to joust with historical truth and obscure or corrupt long-standing Christian traditions on any issue.”⁴⁰ Paleotti’s 1582 work had also stressed the importance of clarity in both textual and imagistic communications:

One of the principal commendations that any author or professor of any science can receive is that he is able to explain his concepts clearly and render even recondite and difficult matters intelligible and plain to all with his accessible use of language. We may assert that the same is true of painters in general, especially since their works serve mainly as books for the illiterate, whom it is always imperative to address openly and clearly.⁴¹

And nevertheless, the statements of Catholic Reformation leaders like Paleotti should not be read as prescriptive support for current practice, but rather as proscriptive. As their counterexamples make clear, these leaders speak against deformation as a widespread artistic trend they do not like. It was his contemporaries’ “obscure and ambiguous” paintings that Paleotti condemned as contrary to religious devotion:

There are some who refuse to heed this precept [to address the illiterate openly and plainly], which is why we are constantly encountering paintings so obscure and ambiguous, especially in churches; rather than illuminating the intellect, as they should, and arousing devotion and heartfelt contrition, their obscurity so confounds the mind that it is pulled in a thousand ways as it tries to make out what the figure before it is, while devotion drains away.⁴²

Here confusing images distract the mind, causing it to lose focus and thereby undermining religious worship. Although Paleotti is talking about paintings and not architecture in this passage, his remarks also run counter to those of friar Juan about seventy years later, for whom the stupefaction elicited by Borromini’s San Carlo served to enhance, not undermine, devotion: if some in the Church feared obscurity, the artistic output of the Catholic Reformation period demonstrates that others embraced its potential to capture believers’ attention. These differing perspectives on the rhetorical benefits and drawbacks of obscurity existed in sustained tension with each other throughout the early modern period. If some thought unclarity could only hinder, others hoped it could bridge toward understanding the great mysteries of faith.

For, of course, the prescriptions (or proscriptions) of the Council of Trent were not slavishly followed.⁴³ Nor were “deformed” works necessarily inconsistent with Church appeals for clarity, which were less concerned with form or rhetoric than with theology or doctrine, such as depictions of non-officially canonized saints with the traditional figurative apparatus of saints (such as halos). San Carlo is not a genuine departure from Church authority; it merely reflects a different understanding of rhetorical architecture, according to which deformation

and perplexity may be enlisted in the project of persuasion. In general, we should recognize deformations as a departure from aesthetic tradition, but not assume that implies a departure from Catholic orthodoxy.

Seventeenth-century readers and observers in fact brought many tools and many pieces of information to those sixteenth-century Church statements to recognize that the Church's position on visual clarity allowed widespread embrace of the works then described as deformations—though where matters of faith were concerned, deformations were to be encountered within a defined journey of exposition that ultimately resolved in a doctrinally orthodox image or object of contemplation. In the chapters that follow, we will see that knowledge, salvation, truth, and understanding of the universe and divine purpose within it were recognized to take place in the space between—and most particularly in the transition between—obscurity and clarity. In numerous works that seem to contradict a stated Catholic proscription against “unclear” art, we can find that the strain these works created between ideal form and deformation was resolvable with a reform that supported the goals of the Church. That strain—and its resolution—was rhetorical in its power to persuade, if not immediately.

While Fra Juan observed that deformation was able to amaze and attract, the French mathematician, physicist, and religious philosopher Blaise Pascal (1623–1662) proposed a possible explanation for why deformation could be alluring. Discussing the art of persuasion around 1658 or 1659, Pascal highlighted certain logicians' valuation (or, in his view, overvaluation) of the inaccessible, the incomprehensible. In particular, he censures the mnemonic poem of scholastic logicians that has been identified as a possible source for the term “baroque”: “*Barbara* and *baralipson* do not mold reasoning.”⁴⁴ He suggests individuals are drawn to incomprehensible forms because they attach value to inaccessibility:

One of the principal reasons why those who enter the realm of knowledge are carried so far from the true course they should follow is their first notion that good things are inaccessible. That is why they call them grand, high, elevated, sublime. This undoes everything. I should like to call them low, common, familiar; these suit them better; I hate swollen words ...⁴⁵

Pascal's rejection of “swollen words” presents a philosophical analogue to the rejection of deformations among Borromini's critics and underscores how ancient calls for clarity in rhetoric could potentially be deployed against visual deformations. In this passage, Pascal pinpoints the appeal of the inaccessible in a belief, which he takes to be faulty, that the impenetrable is somehow superior to the penetrable. On the one hand, his remark suggests we might consider whether and how the artists and their observers introduced in the pages that follow subscribed to this belief that inaccessible things are by default good: did they deploy deformations and incomprehensibility deliberately, to manipulate others into believing that what they could not understand was in some sense elevated? On the other hand, Pascal's criticisms were not shared by all contemporaries: others, as these chapters will show, did not discourage incomprehensibility if it ultimately contributed to supporting religious mysteries and phenomena that could not be neatly outlined in words or images.

Deformations are rhetorical in the sense that they are persuasive, but they persuade via other means than strict clarity. They initially transcend the ability to articulate experience, offering a moment of transcendence within a process where comprehension is delayed, if not ultimately denied. In particular, visual deformations privilege a rhetorical approach that delays resolution, certainty, and clarity to emphasize authority and, often, to attach greater attention to a resolved image.

The Deformation

In the early modern era, the notion of reformation was generally conceived of in relation to a prior deformation. For instance, Protestants saw themselves as reforming a deformed church. In period conceptions, the notions *deformatio* (“deformation”) and *reformatio* (“reformation”) are inextricably intertwined, because both assume the existence of an ideal configuration. If a deformation moves away from that ideal, a reformation moves back toward it. Deformation was, then, understood as a derivative form that stands at a recognizable distance from an ideal and carries within it the stamp of that ideal, if changed and distorted. And to write of deformations calls attention to the overlapping implications of deformations and reformations in artistic and religious domains.

As we have seen, the higher-level goal of Catholic Reformation art and architecture was to function as a rhetorical instrument that would, in Paleotti’s words, “persuade persons to piety and order them toward God.” Catholic Reformation deformations, then, embodied religious ends, which I will discuss in the chapters that follow, even if not all of these goals were apparent to all observers. That ecclesiastical frame meant that Catholic visual artists and architects were not free to express themselves however they wished; a deformation could be original and bold, but not unorthodox in its key points or motivations. And it is Catholic deformations and reformations, in particular, that I will consider in this book. Even though objects similar to those I discuss were also employed or generated in Protestant contexts, Protestants deployed those works toward doctrinally different ends; I have kept discussion of Protestant works to a minimum rather than attempting to write a large-scale comparative work. Moreover, I write primarily in dialogue with scholarship in art and architectural history, although I situate my work in a cultural-historical context. In a period of crisis, the Catholic Church upheld the functional ideal Paleotti highlights, the goal of bringing people toward piety and ordering them toward God—whether in the production of visual art and architecture or in other endeavors. The pursuit of ideal practice also, of course, engaged the larger question that drove the period’s reformations: whether and how the Catholic Church should itself be reconfigured, that is, how it might be returned to an original ideal form.

In Borromini’s time, the endeavors of Martin Luther would not yet have been exclusively defined as the “Reformation”; that term would emerge by the mid-1700s, as Lutheran historians in Germany attached the label to a period that began when Luther posted the Ninety-five Theses in 1517 and ended in 1555 with the Peace of Augsburg, in which Catholics and Lutherans agreed that both faiths could exist in Germany provided that in each of its territories’ subjects adopted their ruler’s religion.⁴⁶ In the nineteenth century, Leopold von Ranke (1795–1886), with whom the Swiss cultural historian Jacob Burckhardt (1818–1897) studied early modern history in Berlin, helped establish the meaning of the Reformation among historians beyond Germany through

his lengthy work *Deutsche Geschichte im Zeitalter der Reformation* (*German History in the Epoch of the Reformation*, 1839–1847).⁴⁷ Even by the late eighteenth century, the name was sufficiently ingrained for the related idea of a “Counter Reformation” (*Gegenreformation*) to emerge and gain approval from German Lutherans; the Lutheran historian and law professor Johann Stephan Pütter (1725–1807) first used the term *Gegenreformation* in 1776.⁴⁸ As Evonne Levy has stressed, when German historians employed the term “Counter Reformation” during the mid 1800s, they referred to the Jesuit recovery by conquest of areas that had been Reformed.⁴⁹

If today the Reformation label commonly denotes early modern Protestantism, in the seventeenth century *reformatio* was also associated with Catholic endeavors, and for centuries before Luther the term was actively used in discussions of religious practice.⁵⁰ As John W. O’Malley has noted, *reformatio* features in ecclesiastical writings from the eleventh century on; it appears with increased frequency in works relating to the Council of Constance (1414–1418), and 50 percent of the directives issued by the Council of Trent (1545–1563) pertain to reform (*de reformatione*).⁵¹ In these ecclesiastical writings, *reformatio* generally signifies corrective action, presented with acute self-awareness by ecclesiastical leaders who sought to return clerical conduct to the moral and doctrinal purity of the primitive church.

In the early modern period, whether Luther was seen to have led a “reformation” that would bring his followers closer to salvation or a “deformation” that would turn them away from God hinged on what observers made of his protests against the papacy and the Catholic Church. These were the terms the German theologian Jerome Emser (1478–1527) used in a combative response to Luther’s fierce attack on the papacy: “Is this a reformation or a deformation?” (*Ist das ein reformation oder deformation?*)⁵² In posing the question in these terms, Emser implied that those who identified Luther’s message with a process of reforming, those who thought he was bringing Christianity closer to its ideal form, were mistaken. In Emser’s view, Luther was leading his followers astray.

Some Catholics agreed that the Church had undergone a deformation that demanded its reformation. But they diverged from Protestants in insisting that the papacy should lead this reform effort. In 1522, Pope Adrian VI (1459–1523), instructing the papal nuncio Francesco Chiericati (1478/1479–1539) on what to say about Luther and his ideas to people assembled in Nuremberg, called the Church a “deformed bride” and urged patient reform:

We ... have never sought to gain this pontificate ... we submitted, therefore, with neck held high for the office, not out of a desire to dominate, and not in order to enrich our relatives, but in order to obey divine will, in order to reform its deformed bride the Catholic Church, in order to aid the oppressed, and to raise up and praise the learned and those gifted with virtue, who have lain neglected already for a long time, and indeed to do everything else that is appropriate for a good pope and the most legitimate successor of the blessed Peter to do; although no one ought to marvel, if he does not immediately see all the errors and all the abuses fixed by us; the disease is too old, and not simple, but various and manifold, and we must proceed step by step in its cure; first we must encounter graver and greater dangers, lest we, who wish to reform everything equally, stir up everything; all sudden changes (says Aristotle) are dangerous for the republic; he who cleans his nose too much draws blood.⁵³

The Pope suggests here that once the deformed Church is reformed, it will be able to accomplish its goals more effectively. One of those goals—perhaps its most important overarching goal—is leading the people toward piety.

Further disagreements over whether the Catholic Church had led a reformation or deformation emerged in the wake of the Council of Trent. In the introduction to his history of the Council of Trent, written in direct response to Paolo Sarpi's (1552–1623) history of the council, the cardinal and historian Francesco Maria Sforza Pallavicino (1607–1667) titles one section “Whether the Council Reformed or Deformed the Ecclesiastical Order” (*Se il Concilio habbia riformato, o deformato l'Ordine Ecclesiastico*).⁵⁴ Pallavicino unequivocally characterizes the council as a reformation that brought Catholicism closer to its original ideal configuration; the council, he argues, returned the Catholic Church to a state in which it could fulfill its aims and increase worship and goodness in Christianity.⁵⁵ He claims that anyone who has eyes to look to the past and the present will admire the immense improvement of ecclesiastical customs, or forms of behavior and procedure, that the council instituted. He stresses improvements in such domains as the decorum of sacred functions, the observance of the ecclesiastical rites, worship, the modesty of dress, and the way of life. He asserts that even though a hundred years have passed since the council ended, its healing and restorative virtues thrive.

Beyond these institutional discussions regarding the deformation / reformation of the Catholic Church, seventeenth-century scholars analyzed the implications of the deformation / reformation of visual forms and of analogies to visual forms. In the *Vocabolario* (*Vocabulary*) of the Accademia della Crusca, “to deform” (*difformare*) is defined as a negative rearrangement of form: “To spoil the form, take away the beauty.”⁵⁶ “To reform” (*riformare*) is defined as a rearrangement of form: “To reorder, and give new, and better form.”⁵⁷ Early modern theologians would not have welcomed the term “new” in this definition—and would not have used it when talking about religious reform, but the *Vocabolario* reinforces the religious connotations. Under this definition, the *Vocabolario* offers an example of spiritual reformation from the writings of Saint Gregory the Great: “But he reforms, and reinforces his soul with hope.”⁵⁸

This notion of the soul's reformation is also portrayed in Jesuit meditative handbooks that imagine the soul as a painter, who reforms its appearance through meditative prayer.⁵⁹ The *Veridicus Christianus* (*True Christian*, 1601) by the Flemish Jesuit Johannes David (1545–1613) describes meditative prayer as a mode of engraving or of painting the *imago Christi*, or “image of Christ,” onto the soul of the exercitant.⁶⁰ For David, to be a “true Christian” (*veridicus Christianus*) requires picturing Christ's lessons and story inside oneself: by imitating Christ more closely, one may reform one's soul, mind, and heart with the aim of being closer to the original example of Christ. The second title page to the *Veridicus Christianus*, engraved by Cornelis Galle (1576–1650), depicts Christ bearing the cross on Golgotha (Fig. 9).⁶¹ To his sides and below him are ten artists working at their easels. While the painter in the foreground portrays Christ carrying the cross, other easels display further important scenes from His life, such as the Adoration of the Magi and the Last Judgment. In addition, two foreground paintings to the left and right—displaying the face of the Devil and a female confronting two beasts—denote how sin can pervert the virtual imagining of Christ.⁶² True Christians must become good painters of the life of Christ to form Him within themselves. Christians must not deform His image in the way shown by the two artists who represent not Christ, but Satan and a woman

Fig. 9. Cornelis Galle (engraver), second title page from Johannes David's *Veridicus Christianus*, 1601–1603. Engraving printed on paper, 8.7 × 6.1 in (22 × 15.5 cm). BnF, département Arsenal, Paris [EST-1353].



alongside two beasts. They must conform themselves to Christ. The annotation *Aspicientes in auctorem fidei* above the scene refers to Hebrews 12:2, “Looking on Jesus, the author and finisher of faith,” underscoring the message to picture Christ. In the *proemium*, David clarifies the comparison between the act of painting and the Christian project of reforming one’s life after the model Christ offered:

Just as any excellent painter, with all his industriousness, tries to copy from the life that which he had presumed needed to be imitated by art, so this care falls upon Christians to imitate Christ our Savior in their life and sacred conversation, and to show Christ in themselves, as if depicted from the life. ... And in this representation of Christ, in this way, at length, they make progress in every type of virtue, so that they represent Christ in themselves as if their prototype, just like in a painting.⁶³

David holds that if Christians mimic Christ in their external actions, they will move toward a more Christlike interior state.

That the exercitant might reform—positively rearrange—his soul into a picture of Christ also features in the beloved treatise *Via vitae aeternae* (*Road of Eternal Life*, 1620) by the Belgian Jesuit Antonius Sucquet (1574–1627). The motif is manifest in Sucquet’s definition of meditation: “To meditate is to consider in one’s mind, and as it were, to paint in one’s heart, the mystery or some doctrine of the Life of Christ, or even the perfection of God, by [representing] the circumstances: people, actions, words, place, and time.”⁶⁴ It appears again in the *Via vitae aeternae*’s engravings: in the eleventh *imago*, for instance, the Soul of a votary paints the nativity in a series of memory places diagrammed onto a heart-shaped panel (Fig. 10). This image and others like it illustrate the soul as a painter, who pursues self-reformation through meditative prayer. In a related vein, the Jesuit theologian Jerome Nadal (1507–1580) asked Ignatius of Loyola (1491–1556) over a period of almost four years to describe how God went about forming him in spirit from the moment of his conversion, since Nadal believed that this account could be of benefit to the society.⁶⁵ In sum, Catholic thinkers of the period conceived of spiritual reformations as giving a better shape to deformed souls, by which they meant a form closer to the original model of Christ.

When early modern art theorists debated the relationships between deformations and reformations, they tended to worry about “corruption” or “sordidness,” with deformation articulated as a negative change, a removal or obscuring of beauty that needed to be reformed or restored. Paleotti decries “Catholics, who, while retaining the use of images, have nevertheless corrupted and deformed their dignity in various ways,” and sees the sacred Council of Trent as aiming to amend those abuses by Catholic practitioners.⁶⁶ He intends his treatise to “reform the Catholic.”⁶⁷ Paleotti further summarizes his aim later, as he differentiates between things that can and cannot be depicted: “Now to begin our discourse about these abuses—so that, with the sordidness that is deforming the beauty of images laid bare, their purity may more easily be restored.”⁶⁸ In describing a restoration of purity, Paleotti is describing a return to an ideal, a reformation.

Paleotti’s recommendations around avoiding “sordidness” resonate with Bellori’s characterization of San Carlo as “ugly and deformed” (*brutta et deforme*) or his choice to brand Borromini as a “corrupter” of architecture, debasing and perverting its forms from

Fig. 10. Boëtius à Bolswert (engraver), eleventh *imago* from Antonius Sucquet's *Via vitae aeternae*, 1620. Engraving printed on paper, 7.1 × 4.5 in (18 × 11.4 cm). Princeton University Library, Special Collections.



the “preferred” condition of Italian classicism. Bellori’s art-theoretical writing in *L’Idea* (*The Idea*)—a discourse on painting, sculpture, and architecture first delivered in 1664 as a lecture to the Accademia di San Luca and then published in 1672 as a preface to his biographies of artists—helps us make sense of his condemnation of San Carlo and supports a reading of deformation as a declension from ideal forms. Bellori opens *L’Idea* by describing the structure of the Aristotelian-Ptolemaic cosmos, in which the sphere of the moon marks the boundary between the sublunary realm below and the superlunary realm above. If the superlunary bodies are “eternally perfect and most beautiful,” Bellori describes the sublunary bodies as “subject to change and to ugliness.”⁶⁹ He explains that “owing to the inequality of matter, forms are altered, and human beauty in particular is confounded, as we see in the innumerable deformities and disproportions that there are in us.”⁷⁰ In the sublunary realm, the “first forms” (*prime forme*), or Platonic ideas, are deformed. Bellori argues that artists and architects should aim for the beauty of the celestial realm in their works and not the deformations of the sublunary world.⁷¹ He holds, moreover, that those artists and architects who do not follow the examples of the ancients deform the first forms: “regrettably, those who transform [the one beauty] with innovations deform it, since ugliness stays close by beauty, just as the vices can touch the virtues.”⁷² And yet, Bellori recognizes here that deformations remain near to their ideal originals. A deformation, although distorted, is still connected to its ideal and still reflects that ideal in some way.

In artistic deformations, proximity to an ideal could be simultaneously part of the attraction and part of the problem. San Carlo was so stupefying because observers could intuit the ways in which it related to and deformed classical ideals. This church and other Catholic deformations of the period propose an alternative appraisal of the relationship between deformation and ideal forms, one that invests value in the work of deforming or unraveling and *reforming* a relationship to an ideal. San Carlo, in confusing visitors and requiring observers to think about the ideal rather than just process it without reflection, offered a different sort of persuasive capacity that was not less than, and potentially greater than, that offered from the conformity of classical forms.⁷³ Moving structures away from expected forms became not a diminishment but a chosen practice that generated a new kind of experience for the observer.

In the early modern era, deformation was multivalent: at times understood as a deformation of all creation, elsewhere as a deformation of entire categories of created beings, or in some cases as a departure from the norm at the individual level. Indeed, as Bellori implies, all sublunary entities were understood to be deformed, not only religious institutions, souls, and certain works of art and architecture. Aristotle had also already introduced the idea that a class of bodies could fall short of an ideal, as when he criticized lobsters for using their claws for locomotion rather than their natural purpose of grasping.⁷⁴ He does not single out an individual lobster but faults all lobsters for their alleged shortcomings. In a similar vein, Aristotle characterized all females as deficient when compared to males, deficient because they cannot produce pure semen that can act as the origin of an offspring’s soul.⁷⁵ In treating the grasping claw or the purified semen-producing body as ideals, and the locomotive claw or the non-purified-semen-producing body as aberrant, Aristotle gestures toward what seventeenth-century thinkers would have seen as deformation.

While continuing to recognize all sublunary entities as deformed from superlunary ideals, thinkers of the early modern era also applied “deformation” or “deformity” as a label for entities

and individuals they saw as markedly deviating from ideals or norms. A person or object was presumed to exist in relation to the ideal as on a spectrum, whether distance was an opportunity for comparison (as in Bellori's recognition that "ugliness stays close by beauty") or a representation of degree, as when Richard III describes himself as "Cheated of feature ... Deformed, unfinished ... scarce half made up" in Shakespeare's *Richard III* (1.1.19–21, c. 1593–1595). While Shakespeare and contemporaries like Francis Bacon (1561–1626), as in his essay "Of Deformity," debated the moral associations of departures from the norms of the human body, in what follows, I do not use the term deformation in relation to living bodies. I do follow the period conception of deformation as a state that characterizes all sublunary entities, from postlapsarian souls and institutions to artworks, and while recognizing the contemporary perspective that all artworks necessarily fall short of "first forms," I pay particular attention to certain works that were seen to deviate more conspicuously from ideals—and especially from classical ideals—and to the ways in which those deformations were articulated.

And yet it must be stressed: despite abundant contemporary (and even classical) theoretical opposition to deformations, patrons and artists of the Catholic Reformation invested considerable financial and creative resources in producing works that complicate classical ideals to embrace, as does San Carlo alle Quattro Fontane, what the Swiss art historian Heinrich Wölfflin (1864–1945) would define as *Unklarheit* ("unclearness"). If some practitioners avoided deformations as problematic, others openly applied the term to their work, because its confusions were understood to yield positive spiritual benefits.⁷⁶

The Baroque

How we think about the seventeenth-century relationship to deformation is crucial to how we understand what constitutes the "baroque"—a notion that, although fundamental to the discipline of art history, is also among its most debated terms.⁷⁷ The baroque as a category remains important to various cultural productions, across artistic, literary, rhetorical, and musical styles and extending even to the description of political systems and science.⁷⁸ Levy and Jens Baumgarten have called the baroque a "miraculous cake" that is cooked repeatedly and through an unending assortment of quickly forgotten recipes: ingredients, methods, even outcomes may vary, but the cake remains "baroque."⁷⁹ These critics articulate their surprise at the large assortment of baroques in existence—and at how easily scholars prepare new ones when they have already devoured countless others. Yet despite its elusive, multifarious nature, the baroque remains a category important to understanding the cultural productions in seventeenth-century Catholic geographies.⁸⁰

This book's account of deformation belongs to a particular tradition of defining the baroque, articulated in the past and more recently. I relate my discussion to Wölfflin's *Unklarheit*, a quality he attached to the baroque: "Diverse as the stylistic variants of the postclassical era may be, they all have this one remarkable characteristic: their appearance somehow recedes from full intelligibility."⁸¹ Wölfflin had famously, two decades earlier, described a progression from a strict Renaissance style to a free and painterly style that he qualifies as a progression "from the formed to the formless" (*vom Geformten zum Formlosen*); in 1915, he declared that "the seventeenth century found beauty in the darkness that engulfs form."⁸² Although I share Wölfflin's emphasis on unclearness and his attention to form and formal arrangements, I sup-

plant his notion of the “formless”—which makes little sense as a descriptor of art and architecture that necessarily has a form, even if it is an irregular one—with the notion of deformation, or the process of undoing and testing forms and formal arrangements in relation to an ideal.⁸³

I align my work with scholars who have more recently centered form in their conversations around the baroque, as when Victor I. Stoichita explains that seventeenth-century paintings grow “self-aware” and depict their own formation and structure.⁸⁴ More recently, Levy has noted the role of “forming and reforming” in Jesuit imagery in relation to the process of subject formation.⁸⁵ This study builds on this sense of the baroque as distinctly attentive to form, and on Aaron M. Hyman’s still more recent work on “conformity”—from the Latin *conformis* (“to share forms”) and from the Spanish verb *conformar*, which appears in colonial notarial contracts to signal that commissioned works had to conform to certain compositions. For Hyman, “conformity” is “a guiding principle” of baroque artistic practice in relation to copying models in print media.⁸⁶ Conformity is useful for thinking about the baroque as attentive to agreement and—implicitly—disagreement among forms. In making explicit what is implicit in Hyman’s discussion, I argue that it is the terrifying tension that boils up in the gap between a deformation, or what might be termed a “nonconforming copy,” and its ideal that drives baroque artistic practice and distinguishes it from earlier practices. Recognizing this gap as a constitutive component of the baroque enables us to account in a more precise fashion for artistic modes in Catholic geographies over the long seventeenth century. If creators of deformations saw the fear of deformations that drove so much of the theoretical discourse, instead of allowing that fear to drive them away from the practice of deforming, they harnessed it toward the rhetorical ends of strengthening class hierarchies and drawing stupefied individuals into the arms of the Church, where the faithful could be pointed to the divine.

Scholars disagree about the etymology of the term “baroque”: It may derive from the mnemonic word *baroco*, which in scholastic logic refers to a particular form of valid argument.⁸⁷ Alternatively, it may well descend from the Spanish and Portuguese words *barocco* and *barueca*, denoting a peculiarly formed pearl and deriving from the Latin *verruca* (“wart”). The satirist and lexicographer Antoine Furetière (1619–1688) defines the French word *baroque* in his *Dictionnaire universel* (*Universal Dictionary*, 1690) as “a jeweler’s term, which is said only in regard to pearls that are not perfectly round.”⁸⁸ By the eighteenth century, the term was also applied to the visual arts. In 1757 the French writer Antoine-Joseph Pernety (1716–1796) described “baroque” in his dictionary as a term for “what is not according to the rules of proportion, but of caprice.”⁸⁹

If one account of the term’s origins affiliates the “baroque” with a form that achieves the philosophical ideal of valid argumentation, the other associates it with the deformed. Even as style labels are being reevaluated, I use the term in this study, because this etymological tension between ideal form and the deformed defines the baroque as a conflicted approach to artistic composition that is essential to the phenomenon under discussion in this book.

Attention and Discernment

The Deformation examines a rich trove of understudied sources—from gigantic illusionistic frescoes to miniature ivory towers—to make sense of the interest some Catholic Reformation thinkers directed toward objects that evoked deliberate visual incomprehensibility and

confusion. In examining that interest in the chapters that follow, I will consider deformations not only in the sense implied by the twin etymologies of the baroque—in terms of an objective relationship to an ideal, whether conforming or nonconforming—but also in subjective, experiential terms, as these varied deformations act upon the senses of observers. I show how deformations cue first the attention of observers and second their visual discernment.⁹⁰ Deformations prompt observers to notice and then to assess how their departures from the ideal challenge their expectations, as I have suggested the Marquis de Seignelay would have noticed and then evaluated the ways that San Carlo confounded the expectations he had carried with him as he traveled the 150 meters from Sant'Andrea. Individuals who possessed visual discernment could draw on accrued observational experience to perceive meaning, to distinguish, to recognize, and to describe forms that inexpert viewers might regard as meaningless. In demanding discernment, then, deformations invited an incremental process that is more expansive than perception. While the latter extends only to becoming aware of phenomena through the senses, the former combines sensory perception—seeing, hearing, touching, tasting, and smelling—with the cognitive processes of understanding, recognizing, identifying, and judging.

In tracing visual experience in the intellectual climate of the Catholic Reformation and European colonial expansion, this book thus offers a prehistory of attention in the West; it challenges an assumption that our present anxiety around attention first emerged in the late nineteenth and early twentieth centuries in relation to systems of modernization.⁹¹ According to this line of thought, human subjectivity was radically reconstructed in the late 1800s, such that individuals could characterize and determine who they were through their ability both to pay attention to particular stimuli and to disassociate themselves from an expansive terrain of sensory data. This elevation of focused attentiveness is said to have been entwined with social and economic changes and more precisely with the shift toward centralized corporate capitalism and away from older modes and technologies of exhibition and consumption. In what follows, I identify an earlier reorientation and expansion in mental engagement closely associated with reformation in its multiple early modern manifestations, with Catholic reformers in particular concerned with holding attention in the context of deformation, as we have seen in Paleotti's discussion of paintings in churches whose "obscurity so confounds the mind that it is pulled in a thousand ways." The chapters that follow explore how Catholic Reformation leaders and artists harnessed deliberate incomprehensibility to capture observers' attention and to direct their minds and, in the end, their conduct more generally, to sustain their relation to the Catholic Church to lead the faithful to God and to build, maintain, and reinforce class identities.⁹²

The contrast between deformations and reformations is a recurring theme in the visual experience of Europe in the sixteenth and seventeenth centuries. Staying focused on this tension allows us to resolve certain contradictions scholars have posited regarding viewing experiences in this period. On the one hand, some scholars, such as David Freedberg, have held that this period was characterized by the rise of naturalism, empiricism, and a commitment to using visual representations in the transmission of knowledge among networks of viewers who trusted what they saw—in other words, who trusted that they observed without distortions.⁹³ On the other hand, scholars including Carl Havelange and Stuart Clark have posited that this moment was characterized by skepticism and deceit, a mistrust of the visual

and visual experience, as well as an enjoyment of playful images that were unstable—in other words, an enjoyment of deformations.⁹⁴ If we think about the early modern viewing experience with the scholars in the second group, we are in the territory of St. Paul’s famous remark on the limits of perception: “We see now through a glass in a dark manner; but then face to face. Now I know in part; but then I shall know even as I am known.”⁹⁵ And yet a related biblical text on perception—“For the invisible things of him, from the creation of the world, are clearly seen, being understood by the things that are made”—underlies the argument that viewers expected, or preferred, to see clearly.⁹⁶ The tension scholars observe in viewing experiences of the early modern period is thus present in the earliest Christian sources, and the religious viewing experience, broadly speaking, might be understood as a journey from misapprehension or partial understanding and uncertainty toward a divinely provided clarity and certainty. Juan Caramuel y Lobkowitz (1606–1682), the polymath at the center of chapter 5 below, who developed the theory of “oblique architecture,” stressed human inability to discern entities’ nature and argued that architects should compensate for inevitable visual misapprehensions. In other words, an expectation of visual misapprehensions—a recognition of the limits on humans’ capacity for discernment—came to motivate a theory of architecture designed to reform deformations. Claude Perrault (1613–1688), a second theorist, by contrast, praised humans’ perspicacity and argued that such architectural recommendations would in the end result in deformations as opposed to reformations.

The Deformation considers this tension between what we might label perspicacious viewing and misapprehensive viewing—perceptions differing in their understanding of the observer’s experience. And, in turn, these differing perceptions of the beholding experience informed discussions concerning the artist’s own responsibilities around truthful representation: we thus see a persistent contrast in seventeenth-century religion, philosophy, and visual culture between what Italians would call *inganno* (“deceit”) and *disinganno* (“the revealing of a deceit”). This tension has also been observed in the culture of seventeenth-century Spain, where Felipe Pereda has explored the contrast between *engaño* (“deceit”) and *desengaño* (“undeceit”) as these terms were employed to scrutinize the paradoxical forms in which painters, writers, and theorists reflected on and framed visual experience and illusion.⁹⁷ The period that saw the rise of thought-out, carefully articulated, and communal practices of observation and representation was also the era of mystic visions and philosophical, religious, and artistic questioning of the limits of visual experience. It is precisely the multivalent nature of vision—and the multivalent explanations of visual experience that coexisted in this period—that propagated the investment in matters of visual representation and the diverging views on how far an artist should appeal to intuitive, immediate perception as opposed to a more temporally extended practice of discernment.

Jesuits, Minims, Trinitarians (who patronized San Carlo alle Quattro Fontane), and other Catholic Reformation groups were preoccupied with visual incomprehensibility, and beyond the biblical foundations for that preoccupation we can look elsewhere, to the classical tradition. That preoccupation could also be grounded in the ancient Platonic distrust of the senses or in conflicting ancient epistemologies’ interpretations around the regulation and productive use of sensory evidence. But Catholic Reformation leaders’ attention to the unclear is not merely a Christian recapitulation of Hellenistic philosophies.⁹⁸ New in the seventeenth

century is the surge of treatises on perspective, dealing with such topics as illusionistic artworks, distortions in visual experience, and the making of visual art. These works, published in rapid succession, helped to drive intense interest in and fierce debates concerning the interrelations of theoretical instructions, the judgment of the eye, artistic practice, and the goals of visual art.⁹⁹

In France, theorists of artistic production debated the relative importance in facture of perspective, on the one hand, or visual discernment (i.e., the eye's capacity to judge), on the other. The printmaker and writer Abraham Bosse (1602/4–1676), who published several works interpreting the views of the mathematician and engineer Girard Desargues (1591–1661), was expelled from the Académie Royale de Peinture et de Sculpture in 1661 and prohibited from teaching perspective there following a series of disagreements with the painter and art theorist Charles Le Brun (1619–1690). Bosse criticized members of the Académie—one of whom he later dubbed “the new reformer of the alleged depravities of perspective” (*le nouveau Réformateur des prétendues depravations de la Perspective*)—for supposedly teaching youths that they did not need to master geometrical rules and could, in creating artworks, rely on how the eye saw things.¹⁰⁰ Le Brun did in fact accept perspective as important to compositional practice, but he considered it as only one component, rather than the entirety, of what goes into painting. Bosse responded to his expulsion by founding his own drawing academy at Saint-Denis-de-la-Chartre; Le Brun in turn ensured that Bosse's school was shut down by royal edict. This seventeenth-century crisis concerning facture further motivated the fascination with form, deformation, and compositional practice that I take to be emblematic of the baroque.

Beyond the outpouring of perspective treatises and the intensity of debates over the rules and ideals that should govern the making of art, further novelty arose in the realm of material culture. New material forms and the increased production of a variety of optical contrivances—from multifocal beveled lenses to magic lanterns—integrated observers into the experience of an inverted universe. To an unprecedented degree, artworks, architecture, and the experience of two- and three-dimensional works—not unlike such scientific instruments as the microscope or telescope—made it possible for observers to become aware of how they were seeing, as they were seeing.

The perspectival colonnade in Palazzo Spada in Rome analyzed in chapter 1 raises questions around the gap between what is seen and what is in fact present. Similar questions are raised in chapters 2, 3, and 4 by anamorphoses—images deliberately constructed to appear incomprehensible, resolving into comprehensible shapes only when observed from precise vantage points or through reflection from suitable mirrors—and by the multifocal beveled lens, which generates a single image from another image consisting of multiple separate forms. Observers who were familiar with telescopes or microscopes but had not previously encountered the multifocal lens would expect, upon looking at an image with multiple separate forms through the lens, to find a magnified version of that same image. Instead, they would find a novel singular form, reformed from the several forms observed by the naked eye. By subverting expectations, this optical device's reformation undermined observers' presumptions concerning their capacities to decipher forms. Such lenses raised questions about an individual's capacity to see and to understand or to discern.

To consider the seventeenth-century theorization and cultivation of attention and visual

discernment—achieved through deformations and reformations that evoked deliberate visual incomprehensibility—is to offer important examples of how the Catholic Reformation and the “scientific revolution” intersected, building on current directions in scholarship.¹⁰¹ Without questioning the Catholic Church’s intense use of visual culture to persuade souls to convert, and without disputing the reality that the Church persecuted Galileo (1564–1642), I join other scholars in seeking to widen the picture of the baroque to include the functions of deformations and other visual culture in the presentation of scientific knowledge—especially concerning visual experience, catoptrics (the branch of optics that deals with reflection), horology (the study of time and the art of measuring it), astronomy, and natural history—under the auspices of Catholic Reformation leaders and scholars. Conversely, I also demonstrate how scientific advancements and experiments in the visual arts and architecture with deformations and reformations functioned as crucial instruments of theological thought and teaching.

Book Structure

This book is organized around a set of questions: Why were Catholic Reformation patrons, practitioners, and observers so drawn to deformations that trigger visual and spatial confusion? How did they deploy deformations, and what do these uses show us? By considering paintings, prints, drawings, sculptures, architectures, and theoretical writings in relation to these queries, I emphasize that Catholic thinkers invested importance in visual and spatial deformations to achieve a long list of ends: they turned to deformations in search of pleasure, or to transform exhibitions of wealth into conversation pieces, to bolster their status within systems of class and power, to establish philosophical and theological truths, to represent known prophecies, to display the enigmas of visual experience, to reshape and reveal strategies of deception, to represent a revelation of God’s truth, to prolong and train observation, to revive and invent artistic forms, and, ultimately, to shed light on the theological mysteries of the Church itself (such as the Incarnation and the Eucharist).

The Catholic characters who produced and patronized works that were referred to as deformations included cardinals, bishops, teachers, and students in the Society of Jesus and Minim order and other clerics as well as members of noble or ruling families or families who aspired to move up within the social pecking order. I focus on contributions of Jesuits and Minims because members of these two communities persistently emphasized visual experience, basing meditative exercises on intricate visualizations and performing elaborate experiments with optical devices and imagery.¹⁰² I define an intellectual cohort of figures who knew each other personally—or at least are likely to have known of each other, from seeing one another’s paintings, buildings, and sculptures or by reading one another’s books, or simply by word of mouth. This is not, then, a systematic study of all Catholic Reformation thinkers or of all Catholic Reformation deformations. I consider a selection of early modern Catholic theorists and practitioners—some quite mainstream within the Church and others more controversial—who engaged in different ways with a set of ideas around representing reality and guiding visual perception and discernment. Moreover, many of the artworks and structures addressed in the chapters that follow are situated within walking distance of each other in Rome, as indicated by the key locations I have highlighted on a map of the city created by the Dutch publisher Pieter van der Aa (1659–1733) and the engraver Giovanni Battista Falda (c. 1643–1678) in 1705

(Fig. 11). Although I approach Catholic geography from Rome and Italy as the central home of the Catholic Church, I also gesture to broader Minim and Jesuit geographies in France, China, and Chile.

The book is loosely organized around the practice of deformation, with some chapters describing works that are explicitly so labeled (and celebrated or denounced accordingly), while others address artistic theory and practice that relate to deformation implicitly and primarily in experiential terms. Focusing on the patron Cardinal Bernardino Spada (1594–1661) and the artwork and architectural features he commissioned for his Palazzo Spada in Rome, the first chapter looks at deformation as a means to achieve social power in a secular setting. I consider Bernardino's use of architectural deformation—especially a perspectival colonnade—in a context where every move a guest made through a host's space was carefully choreographed, and one demonstrated elite status by knowing this choreography and also knowing how to make civil conversation within reception spaces. I show how Bernardino anticipated where etiquette would dictate guests should move and used that knowledge to direct visitors to predetermined viewing positions, in effect requiring them to look at something he had commissioned, admire the work, and then discuss it with him, in encounters that optimized his and his family's social power and thus reinforced their social status more broadly.

If chapter 1 focuses on a single influential patron, chapters 2, 3, and 4 examine how and why entire religious communities, specifically the Minim order and the Society of Jesus, integrated deformations, such as anamorphoses, into their practice. After documenting and explaining the Minim interest in deformations in chapter 2 and the Jesuit interest in chapter 3, the fourth chapter shows how the drive to deform and reform was most powerful when it came to the transmission of key theological mysteries, such as the Eucharist, which Catholic Reformation leaders prioritized as tenets of faith. Bernardino does not directly call his perspectival colonnade a deformation, but we can discuss it together with the anamorphic deformations of chapters 2, 3, and 4 in part because all these works are experienced via an analogous transition between the initially perceived and the ultimately comprehended. As Bernardino anticipated how guests would move in his palace to experience the confusion and then understanding of his architectural deformation, Minims and Jesuits similarly anticipated how professors, students, and visitors to their convents would move through corridors to confront initially incomprehensible images that transformed into clearer theological representations as they moved forward in space.

Whereas the first four chapters explore Catholic Reformation thinkers who intentionally sought out visual and spatial deformations, chapter 5 considers the Spanish theologian Caramuel, who ultimately served as Bishop of Vigevano, as he devised recommendations he claimed would generate architecture “with grace, and without deformity” (*con gracias, y sin deformidad*).¹⁰³ Yet, as noted above, architectural theorist Claude Perrault would have read Caramuel's recommendations as promoting deformations rather than reforming architecture; the example of Caramuel thus suggests that at least one Catholic Reformation theorist, who admittedly was outside the mainstream, would have been understood by one thinker to be drawn to deformation inadvertently. Finally, chapter 6 considers turned ivories, small-scale works crafted by cutting material into a form while rotating it in a lathe. Although not described in the early modern era as “deformations,” the task of understanding or interpreting a turned ivory involved



Fig. 11. Key locations discussed in this book are annotated onto Giovanni Battista Falda's *Novissima et acuratissima delineatio Romae veteris et novae, in viatorem usum et commoditatem* (Leiden: Pieter van der Aa, 1700–1721). Engraving printed on paper, 21.9 × 23.6 in (55.5 × 60 cm). University of Chicago Library, Hanna Holborn Gray Special Collections Research Center.

operations of the mind similar to those necessitated by the images and structures that were identified as such. To find similarity between turned ivories and visual and spatial deformations, the chapter draws on the French Minim Charles Plumier's (1646–1704) account of turning, ultimately demonstrating that the collectors and makers of these exquisite sculptures, like patrons and practitioners of deformations, derived social power from the incomprehensible, quasi-supernatural powers associated with this transcendent art. The transcendent incomprehensibility of turned ivories prolongs—perhaps infinitely—the time it takes to move from not-knowing to knowing, suggesting that some turned works, like San Carlo, may ultimately remain “unknowable.” The chapter concludes the book's extended reflection on the intellectual puzzle of deformation by recognizing that contemporary understanding allowed for the possibility, even the inevitability, that further truths or mysteries remained beyond human comprehension. Whereas many deformations modeled the revelatory journey from obscurity to clarity, some of the baroque's most exceptional objects and structures defied comprehensibility altogether.



If the forms of San Carlo alle Quattro Fontane would have been oppositional to at least one reading of contemporary church aesthetic theory, we can nevertheless seek consistency with a distinct rhetorical norm advocating for persuasion by means other than immediate clarity. Fra Juan saw San Carlo as rhetorical, even though the church does not allow for immediate comprehension, because it persuaded visitors from all over the world to enter again and again and to experience a relationship with the transcendent. Moreover, in the existence of numerous works that seemingly contradict the stated Catholic Reformation proscription against “unclear” art, we find that practitioners and observers of deformation saw the confusion emerging from the space they created between ideal form and deformation as productive, insofar as it encouraged observers to slow down, look, and pay attention. Practitioners of deformations and their patrons and audiences saw these works as offering access to a different model of spiritual persuasion, one that mimicked the limits on human perception when confronting the divine. Catholic Reformation leaders and observers embraced deformation for its capacity to hold observers in suspense—indefinitely or temporarily containing them in a state of stupefaction or bafflement—and then at times to move observers (sometimes literally) from incomprehension to comprehension, via a defined physical or mental path that represented the interpretive authority of the Catholic Church or a collector. As the Church mediated to help the chaotic human mind approach sublime, spiritual, transcendent meaning, so could deformation mediate visual experience, transport observers to a particular vantage point—and thus concentrate the beholder's attention on particular, illuminating subject matter. This capacity motivated Jesuit and Minim artists, as well as other painters and architects like Borromini, to deploy the new optical sciences and mathematics in support of Catholic Reformation claims to institutional, theological, and exegetical authority.

In other words, despite Tridentine recommendations that might seem to privilege rhetorical clarity in the visual arts, Counter Reformation artistic practice was rhetorical in a different sense. Some Catholic Reformation thinkers valued deformations because they were persuasive, ultimately privileging elements of classical rhetoric that reinforced the authority of the speaker

and the persuasive power of analogy over direct rhetorical clarity. The deformation's capacity to stun and to elicit wonder heightened emotional affect, and resolving the deformation involved the observer in an exercise of interpretive power where the patron has predetermined the interpretive outcome. Through this exegetical exercise the viewer was led to recognize the Church's institutional authority as a mediator leading the believer toward God and reinforcing their faith—or, in secular contexts, the viewer was led to recognize the social power of the patron or elite creator.

INDEX

Note: Page numbers in *italic type* indicate illustrations.

- Aa, Pieter van der, 25
 Académie Royale de Peinture et de Sculpture, 24
 Académie Royale des Sciences, 216
 Accademia dei Lincei, Rome, 180, 270n93
 Accademia della Crusca, *Vocabolario (Vocabulary)*, 15
 Accademia di San Luca, 19
 accelerated perspective, 31, 52–54, 56–57, 73, 274n78
 accidents, philosophical concept of, 181–85, 182, 187
 Acosta, José de, *Historia natural y moral de las Indias (Natural and Moral History of the Indies)*, 177–79
 actualized allegories, 154–56, 158–59, 163, 166, 168, 170–71, 176, 195, 221
 Adrian VI, Pope, 14–15
 Aguilonius, Franciscus, *Opticorum libri sex (Six Books on Optics)*, 154, 154
 air-pump from Robert Boyle's *New Experiments*, 241, 241
 Alberti, Leon Battista, 37, 201
 Albrecht V, Duke of Bavaria, 260
 Aleni, Giulio, *Tianzhu jiangsheng chuxiang jingjie (Illustrated Explanation of the Incarnation of the Lord of Heaven)*, 126
 Alexander VII, Pope (Fabio Chigi), 40, 201–2
 allegory, 77–78, 153, 155–56, 162, 179. *See also* actualized allegories
 Ambrose, Saint, 140
 Americas, God's presence in, 142, 176–79
 Amman, Jost, polyhedral bodies from *Perspectiva corporum regularium (Perspective of the Regular Bodies)* [with Wenzel Jamnitzer], 249–50, 251
 anamorphoses: allegories analogous to, 77–78; Catholic Reformation and, 77, 96, 117, 154, 157–58; defined, 24, 75; didactic uses of, 77, 80, 95–96, 137, 142, 155–56, 158, 159, 166, 170–71, 181, 185, 283n80; etymology of the term, 76; and the Eucharist, 184–85; history of, 77–80; instructions for producing, 86, 129, 153, 160, 163–64, 165, 169; interpretation/resolution/reformation of, 77–80, 129, 132, 164, 178–79, 224, 276n6; Jesuits' use of, 76, 119–21, 127, 129, 130–33, 132–37, 142, 144, 153, 155–56, 162, 163; linguistic gap between form and referent in, 78–80; meditative uses of, 120–21; Maignan and, 91–96, 92, 93 (detail), 94 (detail), 114, 114 (detail), 115 (details), 127, 134, 147–50 (*Gatefold 2*), 184, 240; Minims' use of, 76–77, 80, 84, 87–96, 159, 162, 163, 166–76, 181, 283n79, 283n87; movement and, 26, 87, 91–93, 117, 120, 127, 129, 134, 135, 137, 158, 159, 166, 170, 177, 178, 195, 224; Nicéron and, 84, 85, 86, 86, 90–92, 90, 91 (details), 107–10 (*Gatefold 1*), 113–14, 115 (detail), 127, 134, 156, 157, 166, 167 (detail), 168–71, 171 (detail), 240, 276n6, 283n86, 286n29; perceptual key to understanding, 75, 77, 79, 83, 86, 90–94, 96, 134, 137, 142, 144, 155–56; and prophecy, 76, 163–66, 169–71, 174–76; Saint Francis of Paola imagery and, 80, 83–84; specular, 75, 79, 84, 86–88, 132, 163–66; turned ivories compared to, 235, 246
Anamorphosis Showing Coastal Landscape and Kneeling and Praying Saint Peter, 129, 130, 130 (detail), 131 (detail)
 anatomy, 251–52
 Andrews, Noam, 243, 249, 296n7
 Angelico, Fra, *San Marco Altarpiece*, 57
 Aguilonius, Franciscus, 154
 Apianus, Petrus, *Cosmographia (Cosmography)*, 204, 205
 Aquinas, Thomas, 222
 architecture: Caramuel's advocacy against deformation in, 197–219; discernment in viewing, 63, 68, 198, 201, 205, 207–9, 215–19, 228; oblique, 23, 200, 202–19, 258; theology linked to, 228. *See also* classicism
 Argan, Giulio Carlo, 10
 Aristotle, 10, 19, 38, 124, 126, 127, 181–85, 187–88
 Arnauld, Antoine, 183
 attention: accelerated perspective as means of focusing, 33, 57, 63, 184–85; deformations prompting, 9, 11, 22, 28, 63, 91, 94, 135, 162, 184; in elite society, 35, 40, 73; images as aid to focusing, 47, 48, 57, 91, 121–22, 184; Jesuit meditation and, 121; modernization and, 22; Palazzo Spada and, 33–34, 47–48, 63, 68, 73; prehistory of, 22; turned ivories and, 234, 243, 244; wonder as stimulus to, 39
 Aucour, Jean Barbier d', 9
 augmented rhombicuboctahedron from Luca Pacioli, *De divine proportione*, 249, 250
 August, Elector of Saxony, 243
 Augustine, Saint, 121, 140, 222; *De doctrina Christiana (On Christian Teaching)*, 161
 Aurox, Nicolas, *Portrait of Caramuel*, 198, 199, 202
 authority: controversies over, 155, 157–58, 195; deformation in service of reinforcing, 13, 28–29, 96, 137, 155–56, 195
 Bacon, Francis, 20
 Bailliu, Bernard de, 202; balusters from Juan Caramuel y Lobkowitz's *Architectura*, 212–13, 213
 Baldriga, Irene, 270n93
 balusters, 212–14, 213, 214
 Barberini, Francesco, 34
 Barnum, P. T., 63
 baroque: classicism in relation to, 269n83; concept of, 20–21, 269n77; deformation as instrument of, 21, 195; etymology of the term, 12, 21; obscurity as instrument of, 20; rhetorical character of, 10, 267n32. *See also* deformation; obscurity/incomprehensibility/uncertainty
 Barrière, Dominique, 258; illusionistic apparatus on the hill in front of Trinità dei Monti, 101, 103
 Barthes, Roland, 132
 Bartisch, Georg, instruments from his *Ophthalmodeuleia*, 241, 242
 Bassen, Bartholomeus van, *A Company in an Interior* (with Esaias van de Velde), 299n111
 Baumgarten, Jens, 20
 Bayle, Pierre, 65, 186
 Beijing, China, 132–34, 142
 Bellori, Giovanni Pietro, 1, 8, 17, 19, 20, 34, 43, 234; marginal annotation referring to Borromini's San Carlo alle Quattro Fontane, 1, 2, 258
 Bencivenni, Antonio, 293n52
 Bencivenni, Bastiano, 293n52
 Bernard of Clairvaux, 121
 Bernini, Gian Lorenzo, 8, 201, 207–11, 234; colonnade, Piazza di S. Pietro, Rome, 207–8, 208; Cornaro chapel, Santa Maria

- Bernini, Gian Lorenzo (*continued*)
della Vittoria, Rome, 60, 61; illusionistic apparatus on the hill in front of Trinità dei Monti (with Johann Paul Schor), 101, 103; Sant'Andrea al Quirinale, 4, 5–6; Scala Regia, Vatican Palace, 60, 61
- Bertucci, Paola, 248
- Bettini, Mario, 4, 153, 162–67, 170–71; *Apiaria universae philosophiae mathematicae* (*Beehives of Universal Mathematical Philosophy*), 160 (detail), 163–66, 165, 241
- Bianchi, Andrea, 223
- Bitonto, Giovanni Maria da: *Annunciation*, 54, 54, 56; perspectival colonnade, Palazzo Spada (with Francesco Borromini), 32, 33–34, 33, 40–43, 42, 43, 49, 52–53, 56–57, 61–63, 62, 228–29; tabernacle, San Paolo Maggiore, Bologna, 54, 55, 56
- blindness, healing of, 80, 81–83, 82–83, 117, 118, 122, 123, 124, 125
- Blunt, Anthony, 267n32
- body. *See* embodied exegesis; movement
- Bolswert, Boëtius à, 126, 153; eleventh imago from Antonius Sucquet's *Via vitae aeternae* (*Road of Eternal Life*), 17, 18
- Bonfa, Jean, sundial, Jesuit Royal college, Grenoble, 69, 69
- Borromeo, Carlo, 10, 11
- Borromeo, Federico, 11
- Borromini, Francesco, 258; criticisms of, 1, 3, 5–7, 17, 19; ephemeral apparatus for Forty Hours' Devotion, 49–50; floor tiles, Palazzo Spada *Salone*, 44; perspectival colonnade, Palazzo Spada (with Giovanni Maria da Bitonto), 32, 33–34, 33, 40–43, 42, 43, 49, 52–53, 56–57, 61–63, 228–29; praise for, 8–9; San Carlo alle Quattro Fontane, *viii*, 1, 2, 3, 3, 5–7, 7, 10, 11–12, 17, 19–20, 22, 23, 28, 135, 230, 234, 246–47, 251, 256, 259–61, 262; Sant'Agnese, Agone, 3, 9; turned ivories likened to architecture of, 234, 246–47, 256, 258, 266n7
- Bosse, Abraham, 24, 258, 270n100
- Bossuet, Jacques-Bénigne Lignel, 155–56, 168, 283n88
- botanical studies, 176–80
- Bouhours, Dominique, 9
- Boulliau, Ismaël, 159
- Bourdieu, Pierre, 35–36, 242
- Bourdin, Pierre, 68–69, 129, 132, 189, 192–93; *Le cours de mathématique* (*The Mathematics Course*), 192, 289n110
- Boyle, Robert, *New Experiments Physico-Mechanical*, 241, 241
- Brahe, Tycho, 204
- Bramante, Donato, Santa Maria presso San Satiro, Milan, 57, 58, 59
- Breuil, Jean du, 153, 189, 269
- Bscherer, Daniel, *Kurtze und mechanische Beschreibung dieses Kunst-Auges* (with Johann Georg Volkamer and Stephan Zick), 255, 256
- Bugatti, Giovanni Francesco, 202
- Burckhardt, Jacob, 13
- cabinets of wonders, 38, 70, 246, 251. *See also* wonder
- Calvin, John, 221
- Capodiferrero, Girolamo, 37
- Caramuel y Lobkowitz, Juan, 23, 26, 197–229, 258; accomplishments and reputation of, 198, 201; *Animadversiones in Meditationes Cartesianas, quibus demonstratur clarissime nihil demonstrari a Cartesio* (*Notes on the Cartesian meditations in which it is very clearly proven that nothing was proven by Descartes*), 226–27; *Apologema pro antiquissima et universalissima doctrina de probabilitate* (*Defense of the Most Ancient and Universal Doctrine of Probability*), 222–23, 224; *Architectura civil recta y obliqua* (*Straight and Oblique Civil Architecture*), 199–202, 204–5, 205, 206, 212–14, 216, 228, 290n5; and architectural deformation, 197–98, 200–219, 258, 261; career of, 201–2; Cathedral of Vigevano, 202, 203, 291n22; education of, 201; on human limitations, 198–99; *Mathesis audax* (*Audacious Knowledge*), 211, 214, 219, 221; *Mathesis biceps* (*Two-Headed Knowledge*), 204, 210, 211, 215, 220; portrait of, 199; *Rationalis et realis philosophia* (*Rational and Real Philosophy*), 227; *In regulam divi Benedicti commentarius* (*Commentary on the Rule of Saint Benedict*), 224; *Sacri Romani Imperii pax licita demonstrata* (*A Demonstration that the Peace of the Holy Roman Empire is Licit*), 202; *Theologia moralis fundamentalis* (*Fundamental Moral Theology*), 205, 225–27; *Theologia regularis*, 222, 224; on theological matters, 198, 200, 204–5, 219–28; on vantage point, 199–200
- Carlo Emanuele II, Duke of Savoy, 243
- Carpaccio, Vittore, 249
- Carrillo de Albornoz, Gil Álvarez, 44
- Cassiodorus, 209
- Castelli, Pietro, *Exactissima descriptio*, 179, 180
- Castelli-Borromini, Bernardo, 1, 260; upper area of San Carlo alle Quattro Fontane, 3
- Castiglione, Giuseppe, 142
- Cataneo, Pietro, 201
- Catholic Reformation: and anamorphosis, 77, 80, 84, 85, 86, 86, 90–96, 90, 91 (details), 92, 93 (detail), 94 (detail), 107–10 (*Gatefold 1*), 113–14, 114 (detail), 115 (details), 127, 134, 147–50 (*Gatefold 2*), 156, 157–58, 157, 166, 167 (detail), 168–71, 171 (detail), 184, 240, 276n6, 283n86, 286n29; art's purpose in, 10, 13, 25, 28–29, 77, 117, 135, 259; clarity as characteristic of, 10; controversial theological and institutional issues in, 155, 157–58, 180–93; Council of Trent and, 10, 14, 15, 182; deformation in the art and architecture of, 4, 9–13, 20, 21, 25, 28, 33, 75, 84, 85, 86, 86, 90–96, 90, 91 (details), 92, 93 (detail), 94 (detail), 107–10 (*Gatefold 1*), 113–14, 114 (detail), 115 (details), 117, 127, 134, 147–50 (*Gatefold 2*), 156, 157, 166, 167 (detail), 168–71, 171 (detail), 240, 259, 276n6, 283n86, 286n29; history of, 14–15; obscurity in the art and architecture of, 21–22, 122, 124, 162, 164, 195; papacy in relation to, 14–15; and science, 25, 28, 67, 176–80, 270n101; terminology concerning, 266n8. *See also* authority; Jesuits; Minims
- Cati, Pasquale, Saint Francis curing a blind woman (with Giorgio Picchi), 82, 83
- Caus, Salomon de, 201, 211; *La perspective, avec la raison des ombres et miroirs*, 196 (detail), 212
- celestial sphere from Petrus Apianus's *Cosmographia*, 204, 205
- chalice with lid from Coburg, 238–39, 239
- Chantelou, Paul Fréart de, 209, 210
- Charlemagne, 44
- Charles I, King of England, 179
- Charles VIII, King of France, 80
- Chéron, Jean, *Typus necessitatis logicae ad alias scientias capessendas* (*Scheme of the Necessity of Logic for Grasping the Other Branches of Knowledge*) [engraving by Léonard Gaultier after design by], 127, 128, 181, 182 (detail)
- Chierigati, Francesco, 14
- Chigi, Fabio. *See* Alexander VII, Pope
- Chilean mountainside, 142, 143, 144, 162, 177
- chocolate, 198, 222–23
- Christ. *See* Jesus Christ
- Christian VI, King of Denmark and Norway, 243
- church of the collège royal Bourbon, Aix-en-Provence, 127, 129, 130, 131
- Church of the Jesu (*Chiesa del Gesù*), 50, 137

- Cicero, *De finibus bonorum et malorum* (*On the Ends of Good and Evil*), 10, 161, 162
- civil conversation, 26, 35, 48, 62, 63, 65–66, 72–73
- clarity/comprehensibility: Catholic Reformation and, 10; as classical characteristic, 1, 4; deformation's challenges to, 1, 3–11, 13; movement from incomprehensibility to, 12, 23, 26, 28, 35, 63, 65, 73, 87, 91–93, 117, 119–20, 122, 129, 135, 137, 159, 163, 166, 168, 176, 178, 195, 221, 224–25, 260–61, 283n80; theological concerns with, 11–12, 23; unattainability of, 28, 233, 235, 244, 246, 261. *See also* obscurity/incomprehensibility/unclarity
- Clark, Stuart, 22
- class. *See* social status/power
- classicism: baroque in relation to, 269n83; Caramuel and, 197–98, 200; clarity/comprehensibility as characteristic of, 1, 4, 6; critiques of Borromini from standpoint of, 1, 3; deformation's challenges to, 1, 3–4, 6–7, 9, 31, 33; deformations designed to maintain proportional harmony of, 198, 200–201, 204–5; as the ideal, 1, 4, 19, 33; regularity as characteristic of, 3, 31, 33. *See also* rules
- Claude Lorrain, *A View in Rome*, 80, 81
- Clement VIII, Pope, 35
- Clérissseau, Charles-Louis, *Stanza delle rovine* (*Ruins Room*), 100, 102, 102 (*details*)
- Colbert, Jean-Baptiste Antoine. *See* Seignelay, Jean-Baptiste Antoine Colbert, Marquis de
- Collacciani, Domenico, 188
- collège de Clermont, 9, 68, 129, 132, 189, 193
- Collegio Romano, 135, 144
- Colonna, Angelo Michele, 44, 142; painted imagery and decoration in Palazzo Spada Salone (with Agostino Mitelli), 44–48, 45–49
- Colonna, Girolamo, 164–66, 285n18
- Columbus, Christopher, 225–26
- columns in an ellipse from Juan Caramuel y Lobkowitz's *Architectura*, 206, 207
- common people (*vulgus*), 186–88, 208
- comprehensibility. *See* clarity/comprehensibility; obscurity/incomprehensibility/unclarity
- concave mirrors, 186–88
- concupiscentia oculorum* (the concupiscence of the eyes), 121
- conformation, 9
- conformity, 19, 21–22
- Connors, Joseph, 5, 234, 266n10, 266n16, 296n7
- conscience, decisions in matters of, 197–98, 222–27
- Constantine, 44
- consubstantiation, 181
- contemplation. *See* meditation/contemplation
- Copernicus, 204–5
- Cornouaille, Pierre de, 69
- cosmological diagram from Juan Caramuel y Lobkowitz's *Mathesis biceps*, 219, 220, 221
- Council of Constance, 14
- Council of Trent, 10, 11, 14, 15, 17, 166, 182, 268n43
- Counter Reformation, 14. *See also* Catholic Reformation
- Couplet, Philippe, 135
- Courtin, Antoine de, 9
- Crespi, Daniele, *Portrait of Manfredo Settala*, 231, 233, 233, 235
- cultural nobility, 35–36
- curiositas* (the penchant to be distracted), 121
- Curti, Girolamo (Il Dentone), 44
- cylindrical mirrors, 79, 84, 86–88, 132, 163–66
- Daret, Pierre, frontispiece for Jean-François Nicéron's *La perspective curieuse*, 172, 173
- Daston, Lorraine, 38
- David, Johannes, *Veridicus Christianus* (*True Christian*), 15, 16, 17, 124, 126, 153
- Davies, Paul, 56, 274n78
- deception/illusion: didactic uses of, 45, 50, 57, 96, 137, 140, 166, 195; the Eucharist and, 57, 183–87; feigned domes as, 135–42, 136, 138, 139, 141; Jesuits' use of, 134–42; Minims' use of, 96–101, 166–67; moral lessons/associations of, 34, 43, 67, 166–67; optical, 82; Palazzo Spada and, 43–49; Palazzo Spada's perspectival colonnade and, 33–34, 62; Palazzo Spada's sundial and, 67; perspective and, 24, 57, 61, 96; philosophical reflection on, 23, 166; scientific interests and, 65. *See also* anamorphoses; deformation; obscurity/incomprehensibility/unclarity
- deformation: anti-classicism of, 1, 3–4, 6–7, 9, 31, 33, 63; attention prompted by, 9, 22, 28, 33, 63, 68, 91, 94, 135, 162, 184; authority reinforced by use of, 9, 13, 28–29, 96, 137, 155–56, 195; the baroque and, 21; Caramuel's advocacy against, 23, 197–219; Catholic Reformation and, 4, 9–13, 20, 21, 25, 28, 33, 68, 75, 96, 117, 155, 259; Claude Perrault's advocacy against, 23, 198, 201, 215–19; contradictory approaches to combatting, 198; criticisms of, 1, 3, 5–7, 10–12; defined, 4; and defying understanding of facture, 5, 6–7, 164, 259; as display of knowledge and power, 35, 65–67, 73; divine reality glimpsed by means of, 8, 75, 137, 163; and the Eucharist, 180–93; examples of, 1, 3–9, 26, 31, 34, 63, 75–77, 84–88, 85, 86, 87, 90–96, 90, 91 (*details*), 92, 93 (*detail*), 94 (*detail*), 107–10 (*Gatefold 1*), 113–14, 114 (*detail*), 115 (*details*), 127, 134–42, 136, 138, 139, 141, 147–50 (*Gatefold 2*), 156, 157, 166, 167 (*detail*), 170–71, 171 (*detail*), 184, 217, 228–29, 240, 269n76; feigned domes as, 135–42, 136, 138, 139, 141; incomprehensibility as characteristic of, 4–10; Jesuits and, 26, 119–20, 127–59; meditation prompted by, 12, 94, 119–20, 169; Minims and, 26, 75–117, 154–55, 258; in music, 260–61; Palazzo Spada and, 31–35, 41–48; para-linguistic character of, 4, 8–9, 13; precedents for, 50–57; process of understanding, as metaphor for divine revelation, 8, 11, 12, 25, 75–77, 84, 87, 119, 135, 162, 166, 170–71, 195, 259–60, 282n51; purposes of, 9–13, 25, 28, 63, 75, 135, 195, 197, 259, 283n79, 283n80, 283n87; reformation as response to, 4, 13–20, 22, 96, 166; rhetorical uses of, 10–13, 21, 28, 195, 209; and shaping of movement, 26, 28, 40–42, 63, 73, 75, 91–93, 117, 120, 127, 129, 134, 135, 137, 140, 142, 144, 155, 158–59, 166, 170, 177, 178, 195, 224; and social status, 9, 21, 22, 25, 26, 29, 34–35, 62–63, 65; in sublunary realm, 19–20, 34, 43, 52; tension between ideal form and, 9, 13, 19–20, 21, 28, 31, 33; value and benefit of, 8, 11–12, 19, 25, 28, 35, 75, 77, 96, 117, 137, 155, 156–59, 162, 259, 283n79, 283n87. *See also* anamorphoses; deception/illusion; obscurity/incomprehensibility/unclarity
- delicacy, 9, 237, 239, 244, 259, 298n60, 299n103
- Desargues, Girard, 24, 159
- Descartes, René, 159, 182–83, 185–86, 231, 235; *Meditationes de prima philosophia* (*Meditations on First Philosophy*), 226–27
- desengaño* (undecit), 23
- Desiderio da Settignano, 56
- didacticism: anamorphosis as instrument for, 80, 95–96, 137, 142, 155–56, 158, 159, 166, 170–71, 181, 185; deception/illusion as instrument for, 50, 57, 137, 140, 195; obscurity/incomprehensibility/unclarity as instrument for, 161, 209; visual experience as means of, 83–84, 120, 126, 199. *See also* spiritual growth/understanding
- Diogenes Laertius, 127

- discernment: debates over observers' capacity for, 195; deformations prompting, 22–23, 63, 68, 72–73, 167, 171, 195; in elite society, 35–36, 40, 63, 72–73; limits on, 23, 259; meanings of, 167, 269n90; moral, 223; Palazzo Spada and, 33, 42, 44–45, 47, 63, 67–68, 72–73; perception in relation to, 22, 23, 63, 68, 72–73, 171, 186–87; process of, 22; religious insight associated with visual, 171–72, 195; and social status/power, 63, 72–73; theological notion of, 269n90; turned ivories and, 233–35, 240–44; in viewing architecture, 68, 72–73, 198, 201, 205, 207–11, 215–19, 228–29. *See also* perception
- disinganno* (the revealing of a deceit), 23
- distortions to raised statues from Juan Caramuel y Lobkowitz's *Mathesis biceps*, 210, 211
- divine reality: deformation as means of gaining insight on, 163, 179; Jesuits' visual approach to, 120; Minims' scientific and optical approach to, 104, 114; perception inadequate to grasping, 28, 77, 84, 117. *See also* God
- divine revelation: blindness linked to, 122, 124; Minims' concern with, 75, 80, 117, 170; optics linked to, 171; process of understanding deformations as metaphor for, 25, 75–77, 84, 119, 135, 162, 166, 170–71, 195, 259–60, 282n51. *See also* prophecy
- domes, feigned, 135–42, 136
- Dominicans, 223
- Dondé, Antoine, *Les figures*, 82–83, 82, 83, 95, 95
- Doppelmayer, Johann Gabriel, works of turnery by Stephan and Lorenz Zick in *Historische Nachricht von den Nürenbergischen Mathematicis und Künstlern*, 252, 253
- drama. *See* theater/drama
- Dunkelgrün, Theodor, 158
- Durello, Simone, 202
- Dürer, Albrecht, 201, 249; how to place writing on a wall from his *Unterweysung der Messung*, 211, 212; *Lehrbücher* (textbooks), 249–50; *Unterweysung der Messung*, 212, 249
- eccentric pieces, 247–48
- Eisenberg, Johann, 239; base of cup with lid, 237; cup with lid, 235, 237–38, 237
- emblems, 126, 153–54
- embodied exegesis, 63, 140, 156–59, 162–63, 170, 176, 177, 195
- empiricism, 22, 65, 70, 270n93
- Emser, Jerome, 14
- enargeia* (vividness), 124, 126
- engaño* (deceit), 23
- Erasmus, Desiderius, 162
- Estienne, Henri, 207
- Estrix, Gilles, 135
- Eucharist, 25, 26, 50, 56–57, 63, 162, 163, 180–93, 195. *See also* transubstantiation
- evagatio* (aimless wandering), 121
- Evelyn, John, 241–42
- exegesis, 155–59, 164. *See also* embodied exegesis
- eyes, 251–56
- Falda, Giovanni Battista, *Novissima et acuratissima delineatio Romae veteris et novae, in viatorem usum et commoditatem*, 25, 27
- fasting, 198, 222–23
- Feist, Ulrike, 65
- Feo, Vittorio de, 282n51
- Ferdinand II, Holy Roman Emperor, 247
- Ferdinando II de' Medici, Grand Duke of Tuscany, 174, 238
- Ferrara, Alfonso d'Este, Duke of, 242
- Ferreira, Gaspar, *Song nianzhu guicheng* (*Rules for Reciting the Rosary*) [with João da Rocha], 126
- Fontaney, J. de, 142
- form, 20–21
- Forty Hours' Devotions, 49–50, 57, 73
- four figures inside the sundial gallery from Emanuel Maignan's *Perspectiva horaria*, 70, 71, 72
- Fourth Lateran Council, 181
- Francis of Paola, Saint, 80, 81, 82–84, 86–87, 94–96, 95, 117, 122, 127, 140
- Frangenberg, Thomas, 201, 281n47
- Frederick III, King of Denmark, 243
- Frederick V, King of Denmark and Norway, 243
- Freedberg, David, 22, 270n93
- free will, 219, 221, 225
- Froidmont, Libert, 222–23
- frontispiece from Guidobaldo del Monte's *Perspectivae libri sex*, 167, 168
- frontispiece to Yves Henri's *Augustæ cæli reginæ Mariæ Virginis*, 189, 190
- Furetière, Antoine, 21
- Gage, Frances, 127
- Galileo Galilei, 25, 77–78; *Sidereus Nuncius* (*Starry Messenger*), 114
- Galle, Cornelis, second title page from Johannes David's *Veridicus Christianus*, 15, 16
- Galle, Theodor: *Demonstration* from Franciscus Aguilonius's *Opticorum libri sex* (with Peter Paul Rubens), 154, 154; *Putti Anatomizing a Cyclops's Eye* from Franciscus Aguilonius's *Opticorum libri sex* (with Peter Paul Rubens), 154, 154
- Gassendi, Pierre, 159, 185, 201
- Gautier, Léonard, *Typus necessitatis logicae ad alias scientias capessendas* (*Scheme of the Necessity of Logic for Grasping the Other Branches of Knowledge*) [engraving after design by Jean Chéron], 127, 128, 181, 182 (detail)
- Gegenreformation*, 14. *See also* Catholic Reformation; Counter Reformation
- Gell, Alfred, 135
- geometry, 5, 6, 24, 233–35, 240, 246, 249–51
- Gersdorff, Hans von, *Feldtbuch*, 241, 242
- Gherardini, Giovanni, 142
- Giambullari, Pier Francesco, 127
- Gibbes, James Alban, 33–34, 43, 62
- Giglio, Giacinto, 50, 52
- Giordano, Luisa, 202
- God: and the Americas, 142, 176–79; image of, 126; likened to an architect, 204; likened to a turner, 237, 259; nature as marvelous creation of, 104, 114, 176–79; and time, 227–28; and vision/perception, 77, 80, 82–84, 96, 117. *See also* divine reality; divine revelation
- González de Santalla, Tirso, 223
- grace, 219, 221, 225
- Grange, Jean-Baptiste de la, 185–86
- Gregory the Great, Saint, 10, 15, 140
- Grimaldi, Claudio Filippo, 132–34
- Grollier de Servière, Gaspard II, 246–48
- Grollier de Servière, Nicolas, 244, 246, 248
- Grootenboer, Hanneke, 283n80
- Guazzo, Stefano, *La civil conversazione* (*Civil Conversation*), 35
- Guercino, *Portrait of Bernardino Spada*, 30 (detail), 36, 36
- guidebooks, 3, 8–9, 40, 266n7

- Hadrian's Villa, Tivoli, 7
Halde, Jean-Baptiste du, 134
Harris, Neil, 63
Havelange, Carl, 22
Heiden, Markus, 239, 243
Heimbürger Ravalli, Minna, 271n5
Henri, Yves, 69, 129, 189; *Augustæ cæli reginæ Mariæ Virgini*, 189, 190
Holbein, Hans, the Younger, *The Ambassadors*, 75–76, 76, 79
Horn, Andrew, 137, 284n94
Hugo, Herman, *Pia Desideria* (*Pious Desires*), 153
humanism, 157
Hyman, Aaron M., 21
- ideals: Catholic, 13, 61; classical, 1, 4, 7, 19, 33, 61, 205, 209, 210, 212, 214, 216, 217, 228; deformation as departure from, 1, 4, 9, 12, 13, 14, 17, 19–21, 22, 33, 34, 43, 261; reformation as restoration of, 4, 12, 13, 14, 15, 17; tension between deformation and, 9, 21, 28, 33, 34, 43
Ignatius of Loyola, 17, 120–21, 137, 140; *Exercitia spiritualia* (*Spiritual Exercises*), 120
illusion. *See* deception/illusion
imagery. *See* religious imagery
imago Christi (image of Christ), 15, 17
imago Dei (image of God), 126
incomprehensibility. *See* obscurity/incomprehensibility/
unclear
inganno (deceit), 23
inimitable, 244, 246
instruments from fol. g3^r in Hans von Gersdorff's *Feldtbuch*, 241, 242
inverted volutes, 7
Isaia da Pisa, 56
ivories. *See* turning and turned ivories
- Jamnitzer, Wenzel, polyhedral bodies from *Perspectiva corporum regularium* (with Jost Amman), 249–50, 251
Jartoux, Pierre, 142
je ne sais quoi (a certain something), 3, 8–9, 40, 216, 234, 235, 240, 256
Jerome, Saint, 140
Jesuits: and allegory, 153, 155–56; anamorphosis employed by, 76, 119, 127, 129, 130–33, 132–37, 142, 153, 155–56, 162, 163; and the Council of Trent, 268n43; criticisms of, 179; deformation employed by, 26, 119–20, 127–59; and disputations, 68–69; global propagation of Catholicism by, 137, 140, 142, 144; and meditation, 15, 17, 119–59; and natural history, 176–80; and optics, 25, 28, 153–54; origin of, 120; and probabilism, 223; and reformation of the church, 268n51; and reformation of the soul, 15, 17, 268n51; and social status/power, 158, 163; Spada's study with, 35; spirituality and spiritual practices of, 120–27; and sundials, 69; variation in the art associated with, 270n102; visual experience emphasized by, 25, 119–22, 126, 154, 217; and visual illusion/incomprehensibility, 23, 134–42; and women, 284n95
Jesus Christ: appearances of, 184–85; designation of Peter as founder of Christian church, 96, 129; Eucharist as body of, 181–89; God become flesh as, 126; healing of the blind by, 122, 123, 124, 125; image of, 15, 17; meditation focused on, 119–22; passion of, 144, 153, 177–80
John, Saint, 168–70
John of Austria, 200
- Juliana-Maria, Queen of Denmark and Norway, 243
Julien, Pascal, 127
Juvarra, Filippo, oblique balusters, Palazzo Madama, Turin, 213–14, 214
- Kangxi Emperor, 132–33
Kemp, Martin, 270n99, 281n47
Kepler, Johannes, *Mysterium cosmographicum* (*The Secret of the Universe*), 249
Kircher, Athanasius, 69, 72, 142, 144, 153, 156, 201, 202; *Ars magna lucis et umbræ*, 144, 144
knowledge: affected by perceptual vantage point, 75, 77, 79, 86, 100, 119, 134, 135, 137, 140, 142, 144, 155–56, 168, 199–200, 209; limits of, 199, 219, 221–26
Korning, Cornelis, 287n59
- Langren, Michel-Florent van, *Plenilunii lumina austriaca philippica* (*The Light of the Full Moon, for Philip the Austrian*), 114, 116
Lasne, Michel, *Portrait of Jean-François Nicéron*, 250, 252
Lasso, Orlando di, *Cum essem parvulus* (*When I Was a Child*), 260–61
Laurentio, Cesare, 202
Le Brun, Charles, 24, 258
Leibniz, Gottfried Wilhelm, 283n88
Lens of Faith, 189, 192–95
Leonardo da Vinci, 249; *Codex Atlanticus*, 77, 78, 79
LeSeur, Thomas, 100
Levy, Evonne, 14, 20, 21
lidded Nuremberg goblet with a counterfeit sphere, 237, 238, 238 (details)
life, metaphor of journey or pilgrimage for, 127
Lister, Martin, 104
Locke, John, 78–80, 216
Lomazzo, Gian Paolo, 210
Lommelin, Adriaen: Saint Francis of Paola crossing the Strait of Messina on his cloak with companions from Antoine Dondé's *Les figures*, 95, 95; Saint Francis of Paola curing a blind woman from Antoine Dondé's *Les figures*, 82, 82; Saint Francis of Paola providing eyes and a mouth to a child born without these organs from Antoine Dondé's *Les figures*, 80, 82, 82
Louis of England, Queen of Denmark and Norway, 243
Louis XIII, King of France, 171, 174–75
Louis XIV, King of France, 100–101, 240, 246
Louise of England, Queen of Denmark and Norway, 243
Luther, Martin, 13–14, 181, 221
Lutheranism, 137, 181, 237
- Magni, Giovanni Battista, of Modena, 48–49, 62; illusionistic architecture painted at Palazzo Spada, 49, 50; sundial, Palazzo Spada (with Emanuel Maignan), 63, 64, 65–70, 66, 67, 71, 72, 140
Maiano, Benedetto da, 56
Maiano, Giuliano da, 56, 249
Maignan, Emanuel, 4, 68, 84, 84, 88, 90–97, 104, 137, 156, 163, 169, 171, 181–88, 192–93, 195, 209, 217, 240, 278n51, 287n64; *Cursus philosophicus concinnatus ex notissimis cuique principis* (*A Philosophical Course arranged from its Best Known Principle*), 163, 183–86; *Perspectiva horaria*, 67–68, 70, 71, 72, 88, 88, 94–96, 104, 167; *Sacra philosophia, sive entis supernaturalis* (*Sacred Philosophy, or of Supernatural Being*), 163, 186; *Saint Francis of Paola and Landscape*, 91–96, 92, 93 (detail), 94 (detail), 114,

- Maignan, Emanuel (*continued*)
 114 (detail), 115 (details), 127, 134, 147–50 (*Gatefold 2*), 184, 240; sundial, Palazzo Spada (with Giovanni Battista Magni of Modena), 63, 64, 65–70, 66, 67, 71, 72, 140; sundial, Trinità dei Monti, 65, 88, 89, 104
- Maison Carrée of Nîmes, 6
- Malebranche, Nicolas, 39
- Manchon, Jacques, 69
- Mangone, Carolina, 209
- Manichaeism, 221
- Mariani, Giovanni Maria, 30
- Maria Theresa of Spain, 101
- Masaccio, *Holy Trinity with the Virgin and St. John*, 57
- Massey, Lyle, 137, 284n93
- masturbation, 198, 222
- mathematics, 65–69, 134, 153, 163, 167–68, 218. *See also* geometry
- Matilda, Countess of Canossa, 44
- Maximilian I, Emperor, 243
- Medici, Cosimo III de', 243
- Medici, Ferdinando de', Grand Prince of Tuscany, 243
- Medici, Ferdinando II de', 238
- Medici, Mattias de', 238
- Medina, Bartolomé de, 222
- meditation/contemplation: accelerated perspective prompting, 57; deformations prompting, 12, 94, 119–20, 169; Jesuits and, 15, 17, 119–59; as means to reformation of the soul, 15, 17; Minims and, 82–84, 94–95; visualization as component of, 25, 120–22, 126; walking and, 127
- Mercier, Paul, 132, 189; drawing of anamorphic image that relies on a cylindrical mirror, 132, 133; drawing of optical contraptions from the 1636–1638 notebook, 189, 191, 192; drawings pertaining to anamorphic images that rely on cylindrical mirrors, 132
- Mercuriale, Girolamo, 127
- Mersenne, Marin, 159, 201, 260
- Mersmann, Jasmin, 213
- Messenger, Jean, 127
- Michelangelo, 209–11, 258
- microscopes, 24
- Milizia, Francesco, 1, 8
- Minims: anamorphosis employed by, 76–77, 80, 84, 85, 86, 86, 87–96, 90, 91 (details), 92, 93 (detail), 94 (detail), 107–10 (*Gatefold 1*), 113–14, 114 (detail), 115 (details), 127, 134, 147–50 (*Gatefold 2*), 184, 240, 156, 157, 159, 162, 163, 166–76, 167 (detail), 171 (detail), 181, 240, 276n6, 283n79, 283n86, 283n87; 286n29; deformation employed by, 26, 75–117, 85, 86, 90, 91 (details), 92, 93 (detail), 94 (detail), 107–10 (*Gatefold 1*), 114 (detail), 115 (details), 127, 134, 147–50 (*Gatefold 2*), 184, 240, 156, 157, 159, 162, 163, 166–76, 167 (detail), 171 (detail), 181, 240, 258, 276n6, 283n79, 283n86, 283n87; 286n29; divine revelation as concern of, 75, 80, 117, 170; growth of, in early seventeenth century, 276n19; history of, 80; and meditation, 82–84, 94–95; and optics, 25, 28, 77, 80, 104, 114, 172; and science/natural history, 28, 77, 104, 113–17, 176–80; and social status/power, 158–59, 163, 284n97; and transubstantiation, 180–95; visual experience emphasized by, 25, 77, 80, 82, 97, 104, 113–14, 117, 122, 217; and visual illusion/incomprehensibility, 23, 75, 77, 97–101
- Mino da Fiesole, 56
- Mirabilia urbis Romae* (*Marvels of the City of Rome*), 40
- mirrors, 186–88. *See also* cylindrical mirrors
- missionaries, 126, 132, 137, 140, 142, 144, 157, 176–79, 176–80
- MITTELLI, Agostino, 44, 142; painted imagery and decoration in Palazzo Spada *Salone* (with Angelo Michele Colonna), 44–48, 45–49
- Monte, Francesco Maria Bourbon del, 167
- Monte, Guidobaldo del, *Perspectivae libri sex* (*Six Books of Perspective*), 166–67, 168
- moon dials, 66, 66
- movement: anamorphic works and, 26, 87, 91–93, 117, 120, 127, 129, 134, 135, 137, 158, 159, 166, 170, 177, 178, 195, 224; feigned domes and, 135, 137, 140; health benefits of, 127; illusionistic works and, 40–42, 63, 70, 73, 98, 137, 158, 159; from incomprehensibility to clarity/comprehensibility, 12, 23, 26, 28, 35, 63, 65, 73, 87, 91–93, 117, 119–20, 122, 137, 159, 163, 166, 170, 176, 178, 195, 221, 224–25, 260–61, 283n80; and Jesuit meditation, 120, 122, 127, 137; learning process analogous to, 127, 224; in Palazzo Spada, 26, 33, 35, 40–42, 63, 65, 70, 72–73. *See also* embodied exegesis
- Moxon, Joseph, 234
- multifocal beveled lenses, 24, 97, 171, 181, 188–89, 195
- Muret, Marc Antoine, 80
- music, 260–61
- Mydorge, Claude, 159
- Nadal, Jerome, 17; *Adnotationes et meditationes in Evangelia* (*Annotations and Meditations on the Gospels*), 118 (detail), 121–22, 123, 125, 126; *Evangelicae historiae imagines* (*Pictures of the Gospel Stories*), 121, 124, 126
- natural history. *See* nature, study of; science
- naturalism: defined, 270n93; deformation in context of, 79; Jesuits and, 119; Minims and, 83, 104, 117; in seventeenth-century intellectual culture, 22, 70
- nature, study of, 104, 176–80
- neoclassicism, 1
- Neppi, Lionello, 65, 271n5
- Newton, Isaac, 100
- Niceron, Jean-François, 4, 72, 76, 84, 84, 86–88, 97–98, 114, 137, 156, 163, 166–76, 193, 209, 217, 250, 252, 270n98, 270n100, 285n28; anamorphic frescoes, Place Royale convent, Paris, 168–70, 286n29; optical toy, 172, 174–76, 174 (detail); *La perspective curieuse*, 86–88, 87, 97–98, 104, 167–68, 171–72, 172, 173, 174, 193, 194, 241, 248, 250, 276n6; plate 13 from *La perspective curieuse*, 251, 252; plate 24 from his *La perspective curieuse*, 171, 172; *Saint Francis of Paola*, 84, 85, 86, 86; *Saint John the Evangelist and Landscape*, 90–92, 90, 91 (details), 107–10 (*Gatefold 1*), 113–14, 115 (detail), 127, 134, 166, 167 (detail), 170–71, 171 (detail), 240; *Scene of Married Life*, 156, 157, 283n86; *Thaumaturgus opticus* (*The Wonder-Making Optics*), 168–70, 169, 250
- Nieremberg, Juan Eusebio, *Historia naturae*, 178, 178
- nonconforming copy, 21
- Nuremberg, 231
- oblique architecture, 23, 200, 202–19, 258
- obscurity/incomprehensibility/uncertainty: the baroque and, 20; Caramuel on architecture and, 199–200, 207–8; in Catholic art and architecture, 21–22, 124; classical thinking about, 161; criticisms of, 10–11; didactic uses of, 161, 209; in moral decisions, 223; movement from, to clarity/comprehensibility, 12, 23, 26, 28, 35, 63, 65, 73, 77, 87, 91–93, 117, 119–20, 122, 129, 137, 159, 161, 163, 166, 168, 176, 178, 195, 221, 224–25, 260–61, 283n80; nature and, 177; permanent, 21; rhetorical uses of, 11, 28, 124; spiritual understanding arising from, 8, 11, 124; taste and, 259; theological concerns with, 11–12, 23, 162; turned ivories and, 26, 28, 231–61; unresolvability of, 28, 233, 235, 261; uses

- and value of, 8, 10, 11, 12, 20, 161–95; visual, 23–24, 75. *See also* clarity/comprehensibility; deception/illusion; deformation; wonder
- Ockham, William of, 185
- O'Malley, John W., 14, 268n43
- operational aesthetics, 63
- optics: devices and instruments for, 24, 172, 174, 189, 191, 192; Jesuits and, 25, 28, 153–54; Minims and, 25, 28, 77, 80, 104, 114, 172; Nicéron and, 86–87, 97–98, 104, 167–76; revelation linked to, 170, 171; theological significance of, 77, 80, 104, 171, 181. *See also* anamorphoses
- Ormesson, Olivier Lefèvre d', 114
- Ortiz-Iribas, Jorge Fernández-Santos, 214
- Ovalle, Alonso de, *Historica relacion de reyno de Chile*, 142, 143
- Pacioli, Luca, *De divina proportione (On Divine Proportion)*, 249, 250
- Palazzo Capodiferro. *See* Palazzo Spada
- Palazzo della Cancelleria, 299n111
- Palazzo Farnese, 37, 61, 63, 228
- Palazzo Spada, Rome, 26, 31–73, 37; Bernardino Spada's modifications of, 37–39, 42–44, 72; grand staircase, 37, 40; perspectival colonnade, 24, 26, 31, 32, 33–34, 33, 40–43, 42, 43, 49, 52–53, 56–57, 61–63, 228–29; *piano nobile*, 31, 34, 37, 40–41; previous occupant of, 37; *Salone*, 40, 44–45, 44; and social status, 26, 33–35, 39–41, 44, 62–63, 65, 67–68, 70, 72; sundial, 63, 64, 65–70, 66, 67, 71, 72, 140; turning practiced in, 243
- Paleotti, Gabriele, 10–11, 17, 22, 162, 164
- Palladio, Andrea, 258; Teatro Olimpico, Vicenza, 52, 53, 53
- Pallavicino, Francesco Maria Sforza, 15
- Pamphilj, Camillo, 96, 129, 171, 278n51
- Panofsky, Erwin, 77
- Pantheon, Rome, 5–6, 5, 6
- papacy, and Catholic reform, 14–15
- Park, Katharine, 38
- Parkinson, John, 179
- Parmigianino, 249
- Pascal, Blaise, 12, 119, 159, 223
- Pascoli, Leone, 135
- Passeri, Bernardino, 122; *A Blind Man Is Healed before Jericho, and Two Others beyond It* from Jerome Nadal's *Adnotationes et meditationes*, 122, 123; *Healing of the Man Born Blind* from Jerome Nadal's *Adnotationes et meditationes* (engraving by Antonius Wierix after), 118 (detail), 122, 124, 125
- passionflower, 176–80; from Juan Eusebio Nieremberg's *Historia naturae*, 178, 178
- Paul, Saint, 23, 239, 260
- Peace of Westphalia (1648), 202
- Pelagianism, 221
- perception: accommodations for deficits or contingencies of, 198, 200–219; confusion resulting from, 4, 43, 50, 57, 96, 163; devaluation of, 23–24, 96; discernment in relation to, 22, 23, 63, 68, 72–73, 171, 234, 259; divine reality beyond capacity of, 28, 77, 84, 117; and the Eucharist, 182–89; knowledge affected by vantage point of, 75, 77, 79, 83, 86, 90–94, 96, 100, 119, 134, 135, 137, 140, 142, 144, 155–56, 168, 199–200, 209; limits of, 23, 28, 57, 73, 77, 84, 101, 117, 119, 122, 198, 200–219, 222, 226–27, 233; Perrault's faith in, 216–19; and transubstantiation, 180; turned ivories and, 233. *See also* discernment; visual experience
- Pereda, Felipe, 23
- Perichon, Abbé de, Provost of S. Salvadour, 243, 248
- periscope, 72
- Pernety, Antoine-Joseph, 21
- Perrault, Claude, 23, 26, 198, 201, 215–19, 228–29, 261; *Ordonnance des cinq espèces de colonnes selon la méthode des anciens (Ordonnance for the Five Kinds of Columns after the Method of the Ancients)*, 215
- perspective: accelerated, 31, 52–54, 56–57, 73; in ephemeral apparatus for Forty Hours' Devotions, 50, 51, 52; mental operations and thoughts elicited by the use of, 57, 274n78; in Palazzo Spada colonnade, 31; theories and debates about, 24, 270n99; value of, 167
- persuasion. *See* rhetoric and rhetorical theory
- Peter, Saint, 96, 127, 129
- Peter I, Czar of Russia ("the Great"), 240, 243
- Petit, Pierre, 159
- Philip IV, King of Spain, 200, 201
- philology, 157
- Picchi, Giorgio, Saint Francis curing a blind woman (with Pasquale Cati), 82, 83
- Piero della Francesca, *Libellus de quinque corporibus regularibus (The Little Book on the Five Regular Solids)*, 249
- pilgrimage, life as spiritual journey or, 127
- Place Royale convent, Paris, 88, 97, 104, 159, 168–70, 172, 192–93
- Planté, Guillaume du, 70
- Plato, 23–24, 211–12
- Platonic solids, 249–50
- Pliny, 44, 114, 243, 259
- Plumier, Charles, 28, 104, 113, 163, 177, 180, 235, 238, 240–46, 248, 256–59, 261; *Description des plantes de l'Amérique (Description of the Plants of America)*, 104, 113, 113, 180, 180; *L'art de tourner en perfection (The Art of Turning in Perfection)*, 235, 240–46, 241, 242; *Lonchitis ramosa, limbo pulverulento*, 104, 113, 113; passionflower from his *Description des plantes*, 180, 180; putti operating machinery and preparing materials in a turner's workshop from his *L'art de tourner*, 248, 248; tools from his *L'art de tourner*, 241, 242; turned objects from his *L'art de tourner*, 244, 245; turning machines, their parts, and tools from his *L'art de tourner*, 240–41, 241
- Poilly, Nicolas de, Saint Francis of Paola as invisible from Antoine Dondé's *Les figures*, 82, 83
- polyhedra, 231, 235, 249–50
- Porphyry, 181
- Porta, Giacomo della, San Giuseppe dei Falegnami, 7
- Postel, Guillaume, 175–76
- Potier, Charles, 189, 192, 193; *D. O. M. Encyclopædia mathematica*, 189, 193
- Pozzo, Andrea, 4, 135; corridor of Saint Ignatius, Casa Professa of the Jesu, Rome, 137, 138; dome fresco, Sant' Ignazio, Rome, 135, 136, 137; nave fresco, Sant' Ignazio, Rome, 137, 139, 140, 140, 281n47; *Wedding Feast at Cana* (details), 98, 98–101, 100
- Prado, Jerónimo de, and Juan Bautista Villalpando, *In Ezechielem explanationes et apparatus urbis ac templi hierosolymitani (Explanations on Ezekiel and the Layout of the City and of the Temple of Jerusalem)*, 228
- probabiliorism, 223
- probabilism, 222–27
- prophecy: and anamorphosis, 76, 163–66, 169–71, 174–76 (*see also* divine revelation); passionflowers and, 179
- prospettiva. *See* Borromini, Francesco: perspectival colonnade, Palazzo Spada
- Protestantism: and Biblical exegesis, 157–58; Caramuel and, 202; challenge to the Catholic Church from, 225; deformation in

- Protestantism (*continued*)
the art and architecture of, 13, 156; and the Reformation, 4, 13–14; and turned ivories, 234, 235
- Puget, Pierre, 258
- Pütter, Johann Stephan, 14
- Pyrrhonian skepticism, 207
- Quarant' Ore/Quarantore*. See Forty Hours' Devotions
- Quintilian, 126
- Rainaldi, Carlo, ephemeral apparatus in the Jesuit church of the Gesù, 50, 51, 52
- Rainaldi, Domenico, 50
- Ranke, Leopold von, 13–14
- Raspe, Martin, 266n22, 266n23, 296n8
- Raynaud, Lyon Théophile, 185–86
- reformation: Jesuits and, 15, 17, 268n51; Protestant conception of the Reformation, 4, 13–14; as response to deformation, 4, 13–20, 22, 96, 179; of the soul, 15, 17, 268n51. See also Catholic Reformation
- Regio, Paolo, *La miracolosa*, 95, 95
- regularity, as characteristic of classicism, 3, 31, 33
- religious imagery, criticism and defense of, 126
- revelation. See divine revelation
- Revesi Bruti, Ottavio, proscenium and stage of Teatro Olimpico (with Iseppo Scolari), 53, 53
- rhetoric and rhetorical theory: anti-classicism in, 10; baroque art and architecture and, 10, 267n32; Catholic imagery and, 10, 13, 28, 124, 126, 195; classical, 10; deformation and, 10–13, 21, 209; Jesuits and, 124, 126; obscurity/incomprehensibility/unclarity as instrument of, 10, 11, 28, 124; types of, 124, 126
- Righi, Francesco, 33; preliminary elevation drawing, 62, 62
- Roberval, Gilles Personne de, 159
- Rocha, João da, *Song nianzhu guicheng (Rules for Reciting the Rosary)* [with Gaspar Ferreira], 126
- Rosignoli, Carlo Gregorio, 144
- Rosselino, Bernardo, tabernacle, Ospedale di S. Maria Nuova, Florence, 56–57, 56
- Rosso Fiorentino, *Deposition from the Cross*, 278n57
- Rougement, François de, 135
- Roux, Sophie, 188
- Rubens, Peter Paul: *Demonstration* from Franciscus Aguilonius's *Opticorum libri sex* (with Theodor Galle), 154, 154; *Putti Anatomizing a Cyclops's Eye* from Franciscus Aguilonius's *Opticorum libri sex* (with Theodor Galle), 154, 154
- Rudolf II, Holy Roman Emperor, 243
- Rudolph, Conrad, 284n94
- rules: breaking of, in service of classicism, 1, 24, 200; taste antithetical to, 256–59; transcendence of, 9, 256–59, 261. See also classicism
- Ryff, Walther Hermann, 201
- Saenredam, Pieter, 287n59
- Saguens, Jean, 68
- San Bonaventura, Juan di, 6–9, 11, 12, 28, 135
- Sanchez, Tomás, 222
- Sangallo, Antonio da, the Younger, three-aisle atrium, Palazzo Farnese, Rome, 61–63, 61
- San Paolo Maggiore, Bologna, 54, 55
- Santa Costanza, 299n111
- Sarpi, Paolo, 15
- Scamozzi, Vincenzo, 53
- Schmutz, Jacob, 227
- scholasticism, 12, 21, 181–85, 187
- Schor, Johann Paul, and Gian Lorenzo Bernini, illusionistic apparatus on the hill in front of Trinità dei Monti, 101, 103
- Schott, Gaspar, 76, 93–94, 153, 156, 159, 184, 186
- science: Catholic Reformation and, 25, 28, 67, 176–80, 270n101; Jesuits and, 176–80; Minims and, 104, 113–17, 176–80; sundials and, 65, 67, 70; terminology concerning, 269n78; turned ivories and, 251–56. See also empiricism; optics
- Scolari, Iseppo, proscenium and stage of Teatro Olimpico (with Ottavio Revesi Bruti), 53, 53
- Scotists, 181
- Seignelay, Jean-Baptiste Antoine Colbert, Marquis de, 5–7, 22, 259–61
- Seminario Romano (Roman Seminary), 126, 154
- Serlio, Sebastiano, 201, 261
- Settala, Manfredo, 231, 233, 233
- Sextus Empiricus, 207
- Shakespeare, William, 20
- sin, 198, 222–25
- skepticism, 207
- Smith, Pamela H., 244
- Snyder, Jon R., 269n83
- social status/power: civil conversation and, 26, 35, 48, 62, 63, 65–66, 72–73; courtesy handbooks pertaining to, 35, 40; deformation as means of gaining/maintaining, 21, 22, 25, 26, 29, 34–35, 62–63, 65; discernment associated with, 63, 72–73; Jesuits and, 158, 163; Minims and, 158–59, 163, 284n97; Palazzo Spada and, 26, 33–35, 39–41, 44, 62–63, 65, 67–68, 70, 72; Spada and, 34–36, 38–41, 67–68, 72; turned ivories and, 28, 233–35, 242–43, 246, 248
- Society of Jesus. See Jesuits
- Sophocles, *Oedipus the King*, 53
- soul, reformation of, 15, 17, 268n51. See also spiritual growth/understanding
- Spada, Bartolomeo, 42–43
- Spada, Bernardino, 26, 30, 31, 33–49, 36, 53, 62–63, 65–73, 140, 197, 229, 234, 251
- Spada, Gregorio, 36–37, 43
- Spada, Orazio, 34, 36–37, 42–43
- Spada, Paolo, 35, 37–38
- Spada, Virgilio, 31, 37–41, 44–45, 47, 49–50, 54, 56, 63, 65, 68, 70, 96, 217, 234, 278n51
- speaking tube, 72
- specular anamorphosis, 75, 79, 84, 86–88, 132, 163–66, 165
- sphere with polyhedra, 235, 236
- spiritual growth/understanding: anamorphosis as instrument for, 80, 153, 155–56, 158, 159, 166, 170–71; deformation as instrument for, 28, 75, 80; emblems as instrument for, 153–54; illusionistic works as instrument for, 80, 140; Jesuits and, 119–27; obscurity/incomprehensibility/unclarity as starting point for, 11, 12, 124; as reformation, 15, 17; turned ivories as means to, 237–39. See also soul
- statues, considerations for optimal viewing of, 31, 33, 199, 200, 209–13, 210, 217
- Steinberg, Leo, 7
- Stoichita, Victor I., 21
- Stuart, Matthew, 79
- substance, philosophical concept of, 181–83
- Sucquet, Antonius, *Via vitae aeternae (Road of Eternal Life)*, 17, 121, 124, 126
- Suger, Abbot of Saint-Denis, 284n94
- sundials, 63, 64, 65–72, 66
- Tabula Cebetis (Table of Cebes)*, 127

- Tasso, Torquato, *Gerusalemme liberata* (*The Liberation of Jerusalem*), 77
- taste, 256–59
- telescopes, 24, 114, 251, 253
- Temple of Romulus, Rome, 3
- Tesauo, Emanuele, 166
- theater/drama, 35, 49–50, 52, 137
- theology: architecture linked to, 228; Caramuel and, 198, 200, 204–5, 219–28; clarity/comprehensibility and, 11–12, 23; mysteries of, 180–95; obscurity/incomprehensibility/unclarity and, 11–12, 23, 162; optics and, 77, 80, 104, 171, 181. *See also* divine reality; divine revelation
- thesis prints, 127
- Thirty Years' War (1618–1648), 202, 238
- Thomists, 181
- time: illusionistic art and, 100–101; reality of, 227–28; sundials and, 65, 70; systems for marking, 274n98
- towers: attributed to an artisan from Nuremberg, 231, 232, 235; whose upper region is wider than its lower area from Juan Caramuel y Lobkowitz's *Mathesis biceps*, 214–15, 215
- Trachtenberg, Marvin, 37
- transcendence: aesthetic taste and, 256–57; obscurity/incomprehensibility/unclarity as means to, 8, 13, 28, 135, 261; of rules, 9, 256–59, 261; turned ivories and, 28, 256, 258–59
- transubstantiation, 57, 163, 180–93, 195. *See also* Eucharist
- Trinità dei Monti, Rome: anamorphic frescoes, 88–96, 90–94, 107–10 (*Gatefold 1*), 114, 115, 134, 135, 137, 147–50 (*Gatefold 2*), 159, 163, 166, 167, 170–71, 171, 184, 224, 235, 240, 258; courtyard from Emanuel Maignan's *Perspectiva horaria*, 88; illusionistic art, 97–101, 97–103, 140, 141, 260; images of Saint Francis, 80, 81, 82–83, 83; philosophical and theological instruction at, 163; Plumier at, 240; sundial, 65, 89, 104; view of exterior in Claude Lorrain's *A View in Rome*, 81
- Trinitarians, 23
- turning and turned ivories, 26, 28, 231–61, 271n17; anamorphoses compared to, 235, 246; Borromini's San Carlo alle Quattro Fontane likened to, 28, 234, 246–47, 256, 258, 266n7; craft of, 104, 233–35, 240, 243–44; devices and instruments for, 240–41, 241, 242; eye models, 251–56, 254, 255, 256; geometry underlying, 249–51; God as creator likened to, 237, 259; interpreting and understanding the complexity of, 26, 28, 231–61; materials for, 243; Plumier and, 235, 238, 240–46, 256–58; scientific interests and, 251–56; social status/power associated with, 28, 233–35, 242–43, 246, 248; as spoils of religious war, 235–40
- Tutino, Stefania, 222, 227
- Tycho. *See* Brahe, Tycho
- Tychonic system from Juan Caramuel y Lobkowitz's *Architectura*, 204, 205
- Ughelli, Abbot, 41
- Unklarheit (unclearness). *See* obscurity/incomprehensibility/unclarity
- Urban VIII, Pope, 153
- Ureña, Pedro de, 201
- vantage point: anamorphosis and, 24, 75, 77, 79, 83, 86, 90–94, 96, 119, 134, 137, 140, 144, 155–56, 168, 170; cosmology and, 219, 221; deformation and, 28, 34, 137, 149; illusionistic images and, 44, 98, 100, 135, 137, 140, 142, 144; moral/theological, 57, 61, 96, 119, 140, 155–56, 207, 219, 221–22, 225–26, 228; Palazzo Spada and, 61–62; perspective and, 57, 61, 119; viewing of architecture and, 34, 57, 61, 199–200, 205, 207, 209, 216, 218–19, 228
- Vasari, Giorgio, 209
- Velde, Esaias van de, *A Company in an Interior* (with Bartholomeus van Bassen), 299n111
- Veralli, Maria, 34, 42
- Verbiest, Ferdinand, 132–34
- Veridicus Christianus. *See* David, Johannes, *Veridicus Christianus*
- Vermeir, Koen, 282n51
- viewpoint. *See* vantage point
- Vignola, 258
- Villalpando, Juan Bautista, and Jerónimo de Prado, *In Ezechielem explanationes et apparatus urbis ac templi hierosolymitani* (*Explanations on Ezekiel and the Layout of the City and of the Temple of Jerusalem*), 228
- Virgil, *Aeneid*, 35
- visual experience: attention prompted by, 9, 28, 47, 48, 57, 63, 68, 73, 91, 121–22, 162, 184, 234, 237, 243, 297n14; Caramuel and, 198, 199, 215; didactic uses of, 47, 57, 63, 68, 73, 83–84, 120, 126, 199; Jesuit emphasis of, 25, 119–22, 126, 154; meditation and, 25, 120–22, 126; Minim emphasis of, 25, 68, 77, 80, 82, 91, 97, 104, 113–14, 117, 122; self-reflection on, 24; tension between truth and deceit in, 22–24. *See also* optics; perception
- Vitruvius, 201, 204, 215
- Volkamer, Johann Georg, *Kurtze und mechanische Beschreibung dieses Kunst-Auges* (with Daniel Bscherer and Stephan Zick), 255, 256
- Volterra, Daniele da, *Descent from the Cross*, 97–98, 97, 260, 278n57
- Vos, Marten de, 122
- walking. *See* movement
- Weber, Hans, *Ruhmverneueres Ehren-Maal Der Erbaren und Kunstreichen Holz-Bein-Horn-Metall-und-Silber-Drechsler* (with Gottlieb S. Wolff and Johannes Christoph Zick), 255–56, 257
- Weston, Giulia Martina, 65
- White, Christopher G., 270n101
- Whitmore, P.J.S., 114, 240, 284n97
- Wierix, Antonius, 122; *A Blind Man Is Healed before Jericho, and Two Others beyond It* from Jerome Nadal's *Adnotationes et meditationes*, 122, 123; *Healing of the Man Born Blind* from Jerome Nadal's *Adnotationes et meditationes* (engraving after Bernardino Passeri), 118 (detail), 122, 124, 125
- Wierix, Hieronymus, 122
- Wierix, Jan, 122
- Wolff, Gottlieb S., *Ruhmverneueres Ehren-Maal Der Erbaren und Kunstreichen Holz-Bein-Horn-Metall-und-Silber-Drechsler* (with Hans Weber and Johannes Christoph Zick), 255–56, 257
- Wölfflin, Heinrich, 20–21
- women: Jesuits and, 284n95; Minims and, 90, 163, 277n41
- wonder: anamorphosis as source of, 134; architecture as source of, 38–40; God's creation as source of, 176–79; heightening of emotion and thought by, 29, 38–40, 124, 134; sundials as source of, 67, 72; turned ivories as source of, 233–35. *See also* cabinets of wonders obscurity/incomprehensibility/unclarity
- Zeuxis, 44
- Zick, Johannes Christoph, *Ruhmverneueres Ehren-Maal Der Erbaren und Kunstreichen Holz-Bein-Horn-Metall-und-Silber-Drechsler* (with Hans Weber and Gottlieb S. Wolff), 255–56, 257
- Zick, Lorenz, 252; standing cup with cover, 247, 247
- Zick, Stephan, 247, 252; anatomical eye models, 254, 255; *Kurtze und mechanische Beschreibung dieses Kunst-Auges* (with Daniel Bscherer and Johann Georg Volkamer), 255, 256; unassembled anatomical eye model, 255, 255
- Zick family, 231, 256