THE MATERIALITY OF LUCA DELLA ROBBIA'S GLAZED TERRACOTTA SCULPTURES

By

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ABSTRACT OF THE DISSERTATION

The Materiality of Luca della Robbia's Glazed Terracotta Sculptures

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This dissertation examines the role of color, light, surface, and relief in relation to the novel medium of glazed terracotta sculpture developed by the Florentine artist Luca della Robbia (1399/1400-1482) during the 1430s and produced by his heirs until the mid-sixteenth century. Luca devised a tin glaze more brilliant, uniform, and opaque than any existing recipe which, applied to terracotta figures and decoration, produced an inimitable medium celebrated by his peers as an "invention". In the last forty-five years, scholars have identified the resonances glazed terracotta sculpture held with valued media like marble, mosaic, and semiprecious stones. Yet new technical analysis of Della Robbia sculptures during the past three decades makes it possible to more precisely specify the possibilities – and thus the formal choices – available to Luca in relation to color, reflectivity, and relief in his distinctive new medium. Rooted in the physical qualities of glazed terracotta, this dissertation examines the artist's choices in thematically organized chapters focused on invention, whiteness and light, color, and space. It argues that Luca's engagement with color, relief, and reflectivity emphasized the materiality of his sculptures as tactile objects, placing them into productive tension with the illusionistic aims emerging in fifteenth-century Florentine art.

Chapter One of the dissertation traces the development of a narrative of invention around Luca's glazed terracotta sculpture, showing how contemporary audiences conceived the medium as both novel and related to existing arts of painting, sculpture, and fire. Chapter Two identifies the white bodies of Luca's saints as a locus for perceiving effects of light that both modeled form and emphasized surface, materializing and dematerializing his subjects and contributing to an understanding of the ontology of holy figures, especially that of Christ as the Lux Mundi. Chapter Three contextualizes Luca's negotiation of hue, tone, and saturation in his glazes in relation to available pigments and to the concerns recorded in treatises directed to painters and practitioners of the arts of fire. Finally, Chapter Four considers how Luca deployed relief, color, and composition in order to characterize the space of his glazed figures in relation to that of the viewer and to preexisting Florentine traditions.

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In the past two years I have been fortunate to belong to a growing group of researchers working on Della Robbia glazed sculptures. I am immensely grateful to Marietta Cambareri, Curator of Decorative Arts and Sculpture and Jetskalina H. Phillips Curator of Judaica at the Museum of Fine Arts, Boston, who took me on as a graduate research intern for the 2016-2017 exhibition, "Della Robbia: Sculpting with Color in Renaissance Florence." She provided insightful and generous feedback on my work. In Boston I had the opportunity to exchange ideas and resources with Rachel Boyd, Courtney Harris, and Abigail Hykin. I am indebted to each of them for conversations which have deeply shaped my thinking on the Della Robbia. I thank Wendy Walker at the Metropolitan Museum of Art for discussing Della Robbia techniques with me, and Joaneath Spicer for including me in the 2015 Della Robbia Study Day at The Walters Art Museum, Baltimore.

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Introduction

"Luca discovered these new kinds of sculpture which the ancient Romans, as far as we know, did not possess."[1] With these words, written in 1568, the art historian Giorgio Vasari summed up the accomplishment of the Florentine sculptor, Luca della Robbia (1399/1400-1482): by applying colorful tin glazes to large terracotta sculptures, Luca created an art form without precedent in Western European art and recognized as an invention during his lifetime. Luca adapted glaze recipes used by contemporary ceramicists to yield more opaque, uniform colors and reflective surfaces, distinguishing his sculptures from art in marble, bronze, and polychrome wood or terracotta. He founded a family workshop for the production of these sculptures, passing the secrets of his art to his nephew, Andrea, and Andrea's sons. Manufacture of glazed sculptures continued well into the sixteenth century at the hands of the Della Robbia and another workshop run by the Buglioni family, the founder of which likely trained under Andrea. Despite the enormous output of Luca and the subsequent generations—over two thousand glazed terracotta sculptures survive today—much about his invention remains shrouded in mystery. It is not known when, where, or why he began to experiment with his new medium, a process which certainly required a significant outlay of time and money. What is more, Luca's earliest dated glazed terracotta sculptures only appeared in the early 1440s, when the artist was over forty years old and enjoyed an established reputation as a marble carver. But Luca's new approach to glazed terracotta was immediately favored by

[1] Giorgio Vasari, *The Lives of the Artists*, translated with an Introduction and Notes by Julia Conaway Bondanella and Peter Bondanella (Oxford: Oxford University Press), 72.

many of Florence's elite patrons, and today they are seen as emblematic of a Florentine aesthetic.

Luca's glazed terracotta sculptures engaged the qualities of color, relief, light, and space in the very decades when Leon Battista Albert advised painters to combine these qualities toward naturalistic and illusionistic ends, in order to create a compellingly lifelike image. No other sculptural medium of the period embodied these characteristics as fully as glazed terracotta, and thus the goals to which they might work collectively remain more fully explored for fifteenth-century paintings than for sculptures. Rooting its arguments in the physical and technical properties of glazed terracotta, this dissertation interrogates the humanist rhetoric which sees adherence to nature as the aim toward which color, relief, light, and space are best coordinated in fifteenth-century art; this goal was sanctioned by accounts of the deceptively lifelike paintings of classical antiquity and has often been posited as a superior tool for engaging fifteenth-century Florentine viewers. Luca did capture subtleties of soft flesh and the winsome expressions of his figures in malleable clay, but encased them in a hard, lustrous, and brilliantly colored glaze, such that they embody a confounding range of qualities: shiny, cold, human, bright, restrained, immaculate, and tender. The aesthetic of strong color and reflective surfaces that he popularized gave emphasis to the materiality of his sculptures, imparting a splendid appearance to figural and non-figural subjects alike while asserting a dynamic connection to the viewer's environment by virtue of their sensitivity to ambient lighting conditions. In identifying new goals toward which color, relief, light, and space were coordinated in Luca della Robbia's fifteenth-century sculptures, this dissertation follows the path of recent studies of early modern art which argue that unswervingly

naturalistic and illusionistic representations were not always best suited to connecting with fifteenth-century viewers, nor were they the only types of images perceived to carry a classical charge.[2]

Only in the last forty-five years have the distinctive material properties of the glazed sculptures become a proper subject of focus in scholarship on the art of Luca and his workshop. Previous art histories of the nineteenth and twentieth centuries took an ambivalent attitude toward the material, recognizing it as innovative but often criticizing its glazed colors as a contamination of the pure sculptural form associated with unpainted marble and bronze.[3] Their mixed appreciation had its roots in the biography of Luca written by Giorgio Vasari, in his *Lives of the Artists* from 1568. In the quote with which

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[2] Alexander Nagel and Christopher S. Wood, *Anachronic Renaissance* (New York: Zone Books, 2010). One argument of this book is that fifteenth- and sixteenth-century artists, patrons, and viewers often held a broader—and less "accurate," according to an archaeological standpoint—sense of what constituted the art of antiquity than many art historical studies have acknowledged. The argument opens space for connecting fifteenth-century interest in arts such as Byzantine micromosaics and Roman cosmatesque pavements, many of them not more than a few hundred years old at the time, to the Renaissance desire for reviving classical art.

Other studies which have influenced my thinking show fifteenth-century artists deliberately undermining aspects of naturalistic or illusionistic techniques in favor of communicating spiritual values. These include the use of perspective systems in host tabernacles as discussed by Paul Davies, "Framing the Miraculous: the Devotional Functions of Perspective in Italian Renaissance Tabernacle Design," *Art History* 36, 5 (2013): 898-921; and Fra Angelico's solution for combining brilliant color with figural modeling in William Hood, *Fra Angelico at San Marco* (New Haven: Yale University Press, 1993), 82-90.

[3] Leopoldo Cicognara, *Storia della scultura dal suo risorgimento in Italia fino al secolo di Canova*, vol. 4 (Prato: Frat. Giachetti, 1823), 235-236; Charles Callahan Perkins, *Tuscan Sculptors: Their Lives, Works, and Times. With Illustrations from Original Drawings and Photographs*, vol. 1 (London: Longman, Green, Longman, Roberts, & Green, 1864), 195-196, 198, 202; Maude Cruttwell, *Luca & Andrea della Robbia and their successors* (London: J.M. Dent & Co.; New York: E.P. Dutton & Co., 1902), 3-4, 69-70; Leader Scott left the issue open, saying "the legitimacy of the Della Robbia's art, or how far the colouring of sculpture is detrimental to its purity, is still an open question," *Luca della Robbia with other Italian Sculptors* (London: Sampson Low, Marston, Searle, & Rivington, 1883), 33.

At the same time, taste for the glazed terracotta art of Luca della Robbia and his heirs during the nineteenth century is attested to by the success of the Italian Ginori and Cantagalli firms, which created high-quality glazed replicas of Della Robbia originals; see Livia Frescobaldi Malenchini and Oliva Rucellai, eds., *Il Risorgimento della maiolica italiana: Ginori e Cantagalli/The Revival of Italian Maiolica: Ginori and Cantagalli* (Florence: Edizioni Polistampa, 2011). Works in the style of the Della Robbia were also popular, such as those created at the Della Robbia Pottery at Birkenhead, which drew inspiration from the fifteenth- and sixteenth-century glazed terracotta production of the Della Robbia without strictly replicating their designs; see Julie Sheldon, *The Della Robbia Pottery: From Renaissance to Regent Street* (Liverpool: Liverpool University Press, 2015); and Peter Hyland, *The Della Robbia Pottery. Birkenhead, 1894-1906* (Woodbridge: Antique Collectors' Club, 2014).

this Introduction opened, Vasari extolled Luca's glazed sculpture as an art unknown even to the ancient Romans, high praise in a period which sought to rival the accomplishments of classical antiquity. But in the same account he also suggested that Luca developed it as an easier medium with the potential for greater financial gain than was possible with marble and bronze sculpting, associating the new technique with notions of economy. Thus even the great hero of Della Robbia studies, Allan Marquand (1853-1924), subsequently framed the material as imitative, proclaiming that "glazed terra-cotta was used by Luca della Robbia as a substitute for marble."[4] Marquand owed his interest in the Della Robbia to a glazed altarpiece given by his father, Henry G. Marquand, to the Metropolitan Museum of Art, and he later published seven monographs on the Della Robbia and Buglioni families.[5] Taken together, these landmark monographs ordered and analyzed over 2,000 works; each book was organized by decade and contained new documents, many of them located by Rufus Mather.

Although Marquand opened many new lines for inquiry in his volumes, shifting tastes produced only fitful interest in the Della Robbia for the next half-century.[6] This changed in 1973, when Carlo Del Bravo published a short but immensely influential article that identified the sculptures' glaze as an ornament worthy of study, sharing the

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[4] Allan Marquand, *Luca della Robbia* (Princeton, NJ: Princeton University Press, 1914), xxxi.

[5] His first publication on the Della Robbia concerned this altarpiece: Allan Marquand, "Andrea della Robbia's Assumption of the Virgin in the Metropolitan Museum," *The American Journal of Archaeology and of the History of the Fine Arts* 7, 4 (1891): 422-431. His enduring contribution to Della Robbia studies takes the form of seven monograph volumes published between 1912 and 1928: Allan Marquand, *Andrea della Robbia and his Atelier*, 2 vols. (Princeton, NJ: Princeton University Press, 1922); Allan Marquand, *Benedetto and Santi Buglioni* (Princeton, NJ: Princeton University Press, 1921); Allan Marquand, *The Brothers of Giovanni della Robbia. Fra Mattia, Luca, Girolamo, Fra Ambrogio* (Princeton, NJ: Princeton University Press, 1928); Allan Marquand, *Della Robbias in America* (Princeton, NJ: Princeton University Press, 1912); Allan Marquand, *Giovanni della Robbia* (Princeton, NJ: Princeton University Press, 1920); Marquand, *Luca*; and Allan Marquand, *Robbia Heraldry* (Princeton, NJ: Princeton University Press, 1919). He also authored more articles on the Della Robbia than can be cited here.

[6] As observed by Giancalo Gentilini, *I Della Robbia. La scultura invetriata nel Rinascimento*, vol. 1 (Milan: Cantini), 7.

preciosity of media like porcelain and gold while also evoking transcendence through its reflectivity; with this article, he set the course for subsequent interpretations of the medium.[7] In 1980, John Pope-Hennessy published an insightful monograph of Luca's full *oeuvre* in marble, glazed terracotta, and bronze, based closely on documentary evidence.[8] Yet his interpretation of the appeal of the material focused primarily on its legibility and color, as well as its lower cost and shorter production time relative to marble.[9] It was Giancarlo Gentilini who next advanced the course Del Bravo had taken, in a two-volume monograph from 1992 on the Della Robbia that elaborated on his doctoral research on Luca and Andrea.[10] He developed the connection Del Bravo had drawn between the whiteness and reflectivity of Luca's glaze and a spiritual conception of light, applying it widely throughout the Della Robbia's *oeuvre*, and made comparisons to colorful and precious media like mosaic and enamel. Gentilini also identified a significant new valence for the medium by citing classical sources that associated terracotta with humility and dignity. In line with this reading, he devoted attention to Luca's early undocumented activity in polychrome terracotta, as well as to the unresolved questions of his training before 1432 and his production in the late 1460s and 1470s, when Andrea was a strong presence in the workshop.

Technical analysis of glazed terracotta gathered momentum in the 1990s and 2000s, as did study of later revivals and collecting of Della Robbia-style sculptures.

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[7] Carlo Del Bravo, "L'umanesimo di Luca della Robbia," *Paragone* 24, 285 (1973): 3-34.
[8] John Pope-Hennessy's monograph, *Luca della Robbia* (Ithaca, NY: Cornell University Press, 1980) expanded the account of Luca's activity given in his earlier classic volume, *Italian Renaissance Sculpture* (London: Phaidon, 1958). One year earlier, Pope-Hennessy also had occasion to rethink his omission of Andrea della Robbia in the earlier volume on Renaissance sculpture, in "Thoughts on Andrea della Robbia." *Apollo* 109, 205 (1979): 176-197.
[9] Pope-Hennessy, *Luca*, 35-37.
[10] Gentilini, *I Della Robbia. La scultura invetriata*; Giancarlo Gentilini, "Luca e Andrea Della Robbia: nascita e sviluppi della terracotta robbiana" (PhD thesis, Università degli studi di Pisa, Facoltà di lettere e filosofia, 1982-1983).

Interest in these topics accelerated alongside a series of major exhibitions, with accompanying catalogues, dedicated to Della Robbia glazed art: first in Fiesole in 1998, then in Nice and Sèvres in 2002-2003, and finally in Arezzo in 2009.[11] Object conservation in preparation for the exhibitions confirmed the value of technical analysis for understanding the nature, processes, and possibilities of Luca's new art. From 1999 to 2008, scholars in France, which is rich in Della Robbia sculpture, led an international program of technical research on glazed sculpture, identifying trends across a corpus of approximately one hundred works.[12] Taken together, the exhibitions and technical study have drawn needed attention to the inventiveness with which each generation of Della Robbia and Buglioni artists approached the glazed medium that Luca created. Current research on the Della Robbia is flourishing internationally; in particular, many masters and doctoral theses have been completed or are underway in English-speaking countries.[13] The first American exhibition to focus on Della Robbia glazed sculpture

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[11] Giancarlo Gentilini, ed., *I Della Robbia e l'*arte nuova *della scultura invetriata. Fiesole, Basilica di Sant'Alessandro 29 maggio – 1 novembre 1998* (Florence: Giunti, 1998); Marc Bormand and Jean-René Gaborit, eds., *Les Della Robbia: Sculptures en terre cuite émaillée de la Renaissance italienne. Musée National Message Biblique Marc Chagall, Nice, 29 juin – 11 novembre 2002; Musée National de Céramique, Sèvres, 10 dicembre 2002 – 10 mars 2003* (Paris: Réunion des Musées Nationaux, 2002); Giancarlo Gentilini, ed., with Liletta Fornasari, *I Della Robbia. Il dialogo tra le Arti nel Rinascimento* (Milan: Skira, 2009).

[12] France's strong holdings in Della Robbia sculpture are a result of the work of Girolamo and Luca the Younger della Robbia, sons of Andrea, for Francois I^{er} in the period between 1518 and 1566; see Monique Chatenet, Florian Meunier, and Alain Prévet, eds., "Le château de faience de Francois I^{er} les terres cuites émaillées de Girolamo della Robbia au Château de Madrid," special Issue, *Bulletin archéologique du Comité des travaux historiques et scientifiques* 36 (Paris: Éditions Du CTHS, 2012). The results of the technical research undertaken from 1999 to 2008 are published in Anne Bouquillon, Marc Bormand, and Alessandro Zucchiatti, eds., *Della Robbia: dieci anni di studi – dix ans d'études* (Genoa: Sagep Editori, 2011).

[13] Charlotte Katherine Drew, "Displaying Italian Sculpture: Exploring Hierarchies at the South Kensington Museum 1852-62" (PhD thesis, University of York, 2014); Sandra J. Gekosky, "Luca della Robbia and his Tin-Glazed Terracotta Sculptures" (MA thesis, Ohio University, 2005); Marianne Denise Knight, "Scultura invetriata: Updating the Story of Luca della Robbia's Invention" (MA thesis, San Jose State University, 2008); Alicia Marie LaTores. "Luca della Robbia as Maiolica Producer: Artists and Artisans in Fifteenth-Century Florence" (Undergraduate Thesis, Wheaton College, 2009); Stephanie R. Miller, "Andrea della Robbia and his La Verna altarpieces" (PhD thesis, Indiana University, 2003). Just completed is a doctoral dissertation by Zuzanna Sarnecka, "The Della Robbia and Domestic Maiolica: Glazed Devotional

opened at the Museum of Fine Arts, Boston, in August 2016 and travels to Washington, D.C. in 2017.[14] As with previous exhibitions, preparation for this event has spurred new conservation and technical analysis, fostering exchange among the many institutions in the United States that are conducting research on their Della Robbia sculptures.[15]

The enthusiasm for materials and materiality in scholarship of the last twenty-five years has undoubtedly contributed to the renewed interest in Della Robbia sculptures. Thomas Raff, in his 1994 book, *Die Sprache der Materialien*, traced the developing recognition in mid to late twentieth-century scholarship that materials could contribute to the meaning of art.[16] This is the context in which both Del Bravo and Gentilini were able to argue that Luca's glazed terracotta material could bear (conflicting) associations of transcendence and humility which lent insight to the appeal of his material. Michael Cole has recently identified circumstances that have favored the growing attention to materials in Renaissance studies, and three in particular are worthy of scrutiny here in relation to the Della Robbia.[17] First, as discussed above, new conservation techniques have permitted closer attention to the facture and surface qualities of art. Second, material-

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Sculpture in the Marche" (PhD Thesis, University of Cambridge, 2016). Forthcoming are doctoral dissertations by Rachel Boyd, "From Experimentation to Specialization: The Della Robbia Workshop, ca. 1430-1550" (PhD Thesis, Columbia University); and Juliet Carroll, "From Renaissance to Regent Street: Della Robbia Pottery in Late Victorian Culture," (PhD Thesis, Liverpool John Moores University), which considers issues of late-nineteenth and early-twentieth century reception.

[14] "Della Robbia: Sculpting with Color in Renaissance Florence" runs in Boston from August 9, 2016 to December 4, 2016, and at the National Gallery of Art in Washington, D.C. from February 5, 2017 to June 4, 2017. It is accompanied by the first publication to present an introduction to the Della Robbia and Buglioni artists to a general English-speaking public: Marietta Cambareri, Abigail Hykin, and Courtney Leigh Harris, *Della Robbia: Sculpting with Color in Renaissance Florence* (Boston: MFA Publications, 2016). I warmly thank Marietta Cambareri for the opportunity to contribute research for the show and catalogue as a Graduate Research Intern at the Museum of Fine Arts, Boston in the winter and summer of 2015.

[15] These institutions include: The Art Institute of Chicago; The Brooklyn Museum; The Metropolitan Museum of Art, New York City; The Museum of Fine Arts, Boston; The National Gallery of Art, Washington, D.C.; and The Walters Art Museum, Baltimore.

[16] Thomas Raff, *Die Sprache der Materialien: Anleitung zu einer Ikonologie der Werkstoffe* (Munich: Deutscher Kunstverlag, 1994).

[17] Michael Cole, "The Cult of Materials," in *Revival and Invention: Sculpture through its Material Histories*, edited by Sébastien Clerbois and Martina Droth (Oxford: Lang, 2011), 1-15.

based approaches privilege the original object itself over its reproductions in photographs and writing. Though Cole makes this point in relation to the art historian, direct contact also holds the allure of capturing part of the original (historical) viewer's experience. This last connects to his third point, that "the history of materials is a social history of art," by which he refers to research into the values and knowledge that shaped a viewer's appreciation of the materials of art.[18]

In regard to the idea that materials have a "social history," Cole cited Michael Baxandall's *Painting and Experience in Fifteenth-Century Italy* of 1972, a book which has deeply influenced the study of materials in the Italian Renaissance.[19] In it, Baxandall showed a widespread sensitivity to materials, specifically gold and ultramarine, in early fifteenth-century painting contracts, an emphasis which had shifted by the end of the century to value the artist's skill, or "hand," over those materials.[20] Leon Battista Alberti seemed to reflect this changing value in his advice to painters in 1435/6 to depict gold objects artfully with paint rather than gilding them.[21] Following Baxandall, the notion that fifteenth-century Florentine viewers noticed and valued the materials from which artworks were made—for their resonances as well as their monetary value—has been widely accepted in studies of both painting and sculpture, encouraging research on bronze, porphyry, and marble, as well as less costly media like wood and terracotta.[22]

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[18] Cole, "The Cult of Materials," 4.
[19] Michael Baxandall, *Painting and Experience in Fifteenth-Century Italy: A Primer in the Social History of Pictorial Style*, 2nd Ed. (Oxford and New York: Oxford University Press, 1988).
[20] Baxandall, *Painting and Experience*, 3-27.
[21] Baxandall, *Painting and Experience*, 16
[22] See, for example, Fabio Barry, "Painting in Stone: The Symbolism of Colored Marbles in the Visual Arts and Literature from Antiquity until the Enlightenment" (PhD diss., Columbia University, 2007); Suzanne B. Butters, *The Triumph of Vulcan: Sculptors' Tools, Porphyry and the Prince in Ducal Florence*, 2 vols. (Florence: Leo S. Olschki, 1996); John T. Paoletti, "Wooden Sculpture in Italy as Sacral Presence," *Artibus et Historiae* 13, 26 (1992): 85-100; Wendy Stedman Sheard, "Verrocchio's Medici Tomb and the Language of Materials: With a Postscript his Legacy in Venice," in *Verrocchio and Late Quattrocento*

These studies show that appreciation for the materials of sculpture did not wane over the fifteenth century, as Baxandall suggested it did for painting, for attention to the "hand" of the sculptor and to the physicality of his materials are not incompatible outside of an illusionistic context. In relation to Luca della Robbia, his alluring glazed terracotta material was itself a mark of the artist's "hand," made according to a secret recipe, denying any opposition between skill and material.

Current studies of materiality in Italian Renaissance art take a range of approaches—iconographic, philosophical, economic, and processual—such that the term itself perhaps best describes an inclination rather than a method. In the present study, the concept of "materiality" functions on two levels: it refers first to the glazed sculptures as objects, describing their tactility and surface as opposed to their representational qualities, and second to a theoretical distinction between matter and spirit which, this dissertation suggests, Luca's glazed sculptures of religious subjects could engage as a means to prompt meditation on invisible holy mysteries. These foci have been popularized by the recent, influential studies of medieval and late medieval art undertaken by Herbert Kessler and Carolyn Walker Bynum, who have shown an emphasis on the material stuff from which artworks are made to carry ontological significance within a religious context.[23] In the case of Luca's sculptures, it is the glazed terracotta material itself that confers a sense of the otherworldly on otherwise naturalistically modeled bodies, faces, and vegetation through its reflectivity and bold

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Italian Sculpture, edited by Steven Bule, Alan Phipps Darr, and Fiorella Gioffredi Superbi (Florence: Le Lettere, 1992), 63-90; Antonio Paolucci, *La civiltà del cotto: arte della terracotta nell'area fiorentina dal XV al XX secolo* (Impruneta: Soprintendenze ai Beni Storici e Artistici e ai Beni Ambientali e Architettonici, 1980).

[23] Herbert L. Kessler, *Seeing Medieval Art* (Peterborough, Ontario: Broadview Press, 2004); Carolyn Walker Bynum, *Christian Materiality: An Essay on Religion in Late Medieval Europe* (New York: Zone Books, 2011).

color. This study therefore examines the ways in which Luca retained emphasis on material qualities in his sculptures—the lustrous surfaces and powerfully brilliant colors, including white—which are inimical to illusion but suggest spiritual splendor and, per Del Bravo, transcendence. Taking into account the great popularity of these glazed works, this analysis ultimately complicates the role of naturalism and illusionism as tools to engage fifteenth-century viewers.

The four thematic chapters of this dissertation approach the material qualities of Luca's art through the topics of invention, whiteness and light, color, and space. These foci firstly represent noteworthy qualities of Luca's art, celebrated during his lifetime as novel, long associated with white figures set against a blue ground, and recently praised for their attractive reflectivity. Secondly, although issues of light, color, and space are of critical concern to the sculptures that Luca created, these qualities are best explored in relation to fifteenth-century painting rather than sculpture, in which context they often are associated with progressive naturalistic and illusionistic aims. Within the context of painting, the manipulation of color, light, and space toward illusionistic ends has long been ranked among the most significant advances of the early modern period. If such aims were indeed pervasive in these decades of Florentine art, then Luca's deliberate avoidance of more subdued coloration and an evocation of atmospheric space, both of which were possible in his glazed terracotta medium, gains significance. Moreover, the sensitive reflectivity of his glazed sculptures raises questions about the phenomenology of light as a means of engaging viewers in an era when painters increasingly sought to fix and regulate the effects of light on their subjects in pursuit of illusionistic ends.

Chapter One "Invention" begins with a condensed account of the life and works of Luca della Robbia. This brief biography serves as a foundation from which the discussion of single sculptures departs in later chapters. Having set the stage, it turns to investigate the discourse of invention which grew up around Luca's new glazed terracotta medium. It considers the written sources which discuss Luca and his mastery of many media—marble and bronze as well as glazed terracotta—both during his lifetime and in the decades that followed, culminating in the biographies of the artist written by Giorgio Vasari in the 1550 and 1568 editions of his seminal text, *The Lives of the Most Excellent Painters, Sculptors, and Architects*. Luca's art was consistently praised as an invention from the late-fifteenth century on, but the terminology used to identify his glazed sculptures also tied them to existing technologies. The sculptures were commonly described as "terracotta invetriata," or glazed terracotta, the term used for ceramic wares, and authors also related Luca's medium to glass, enamel, and painting. The diverse comparisons that the medium sustained reflect the novelty of its combination of reflectivity, color, malleability, and scale. The technical knowledge and skilled craftsmanship needed to ensure these qualities are examined at the end of this chapter, where the process of making glazed sculpture is reviewed in light of the technical analysis of Della Robbia sculptures that has become popular in the last thirty-five years.

Chapter Two "Whiteness and Light" examines the white figures that form the subject of so many of Luca's glazed sculptures. Literature on the Della Robbia has connected the white figures to light, both in a spiritual and symbolic sense as well as in a literal environmental sense. This chapter considers how fifteenth-century viewers might have understood such symbolism through their own phenomenological experience of the

white-glazed figures. Drawing upon treatises written by the fourteenth- and fifteenth-century Florentine artists Cennino Cennini, Leon Battista Alberti, and Lorenzo Ghiberti, it analyzes the growing preoccupation of fifteenth-century Florentine painters with capturing a fixed distribution of light and shadow as a means to model their figures in three dimensions. White monochrome bodies were an exemplary site for capturing and representing such effects, and this chapter argues that the painter's practice cultivated an expectation of being able to *see* form through the gradation of light on the surfaces of three-dimensional objects, in particular sculptures. The static light effects that painters sought were, however, in contrast to the mobility and changeability of the light effects to which real objects, including sculptures, were subject. Lorenzo Ghiberti discussed this very phenomenon, providing an entry point for understanding how luster might be perceived as animating the surface of Luca's glazed sculptures in response to the movement of the viewer. Turning to a sculpture of the Virgin and Child by Luca della Robbia in which spiritual light is a main theme, the chapter shows how the attitudes toward light expressed by Cennini, Alberti, and Ghiberti could augment the understanding of Christ as the Light of the World (Lux Mundi). The chapter includes the results of an experiment conducted to light a glazed terracotta sculpture by candlelight, and it concludes with an examination of potential lighting conditions for glazed sculptures in ecclesiastical and domestic settings.

Chapter Three "Color" analyzes the pigments and qualities of color tone, saturation, and composition in Luca's glazed sculptures on the authority of fourteenth- and fifteenth-century recipe books (*ricettari*) and artistic treatises which identified these topics as chief concerns for the discussion of color. These writings were directed to

practitioners in a variety of media, including glass, ceramics, and mosaics (the arts of fire), but especially to painters working in tempera. Painted terracotta sculpture shared the basic techniques and materials of tempera painting, establishing painters' treatises as a valid source for analyzing the application of color to sculpture, though Luca's glazes relied on the mineral-based pigments common to the arts of fire and thus differed from those employed by painters. The specialist texts consulted in this chapter provide a structured vocabulary for examining the choices Luca made within the possibilities his medium offered and the ways in which his viewers would have understood those choices. Florentine painters of the fourteenth and fifteenth centuries increasingly considered how color tone and saturation related to their developing naturalistic and illusionistic goals, concerns best expressed by Alberti. Luca's use of glaze colors in the first decades of his production did not often pursue—nor, indeed, were they always well-suited to—illusionistic aims, for he favored a bright color palette. However, contemporary explorations of color in relation to illusionistic goals, conducted both in writing and in paint, created an influential framework for evaluating colors as indices of proximity to the viewer and to a putative light source, and these ideas would provide a context for fifteenth-century evaluations of Luca's color choices.

Finally, Chapter Four "Space" examines Luca's experimentation with representing space through his choices in terms of color, relief level, and composition. It takes as a case study two of Luca's earliest major commissions, the *Resurrection* (1442-1444) and *Ascension* (1446-1451) lunettes for the Cathedral of Florence, Santa Maria del Fiore. The lunettes take radically different approaches to all three criteria: in the *Resurrection* these choices emphasize the picture plane, while in the later *Ascension* an

expanded color palette and use of lower relief suggest atmospheric space. The chapter reviews two precedents for the treatment of space in Luca's glazed sculptures. First, it examines earlier marble reliefs by the artist that take a more illusionistic approach to space. The second is a corpus of earlier thirteenth- to fifteenth-century Florentine sculptures in which sculpted figures are placed against colorful and reflective grounds whose function isolates between surface and environment. The chapter argues that a similar oscillation between surface and space persisted in Luca's large sculptures for architectural settings, where the extensive blue field—now such a famous aspect of his art—functioned ambivalently, as both a reflective field and as an open sky.

The topical approach taken in this study stands in contradistinction to all of the previous major studies on Luca della Robbia, which have assumed a monographic or *catalogue raisonné* format. By nature, those approaches determine the type of analysis that can be offered. A chronological survey of an artist's *oeuvre* emphasizes stylistic development, and privileges questions of artistic influence, connoisseurship, and patronage. These topics are important and often unresolved for Luca; Gentilini in particular has done much to address the thorny early and late periods of Luca's work. Yet while the present study relies on earlier research, it employs a thematic approach in order to foreground the expressive potential inherent to the new medium of glazed terracotta itself, and the choices Luca made in response to these possibilities. The treatment of each chapter theme is not meant to be exhaustive. Rather, the goal of this study is to develop an analytic approach to each issue which is founded within a fifteenth-century context and will enable further exploration, rather than to provide a complete survey of every subject. It provides a framework for future thematic approaches to the glazed terracotta

sculptures by Luca della Robbia, as well as his successors in the fifteenth and sixteenth centuries, expanding our understanding of one of the most inventive artists to emerge in fifteenth-century Florence.

Chapter One: Invention

"He gave up the *scalpello* for the *stecchini*…"[24]

Section One: Introduction

Chapter One introduces the personality and accomplishments of the Florentine sculptor Luca della Robbia (1399/1400-1482) and considers the concept of novelty in relation to his glazed terracotta sculptures. Luca della Robbia was regarded highly by his contemporaries as one of the most important sculptors of the fifteenth century, a position which is not always reflected today in literature on the protagonists and most important advances in Italian sculpture of this period. Chapter One takes a multipronged approach to the examination of novelty in relation to Luca's sculptures, as that quality might have been perceived by the artist himself, his heirs in the Della Robbia workshop, and his patrons and public audiences. It addresses these issues through analysis of fifteenth- and sixteenth-century accounts of the artist's life, explanation of the terminology applied to his works, and a review of the findings of technical analyses which have accompanied recent conservation of sculptures by Luca and his successors in the Della Robbia and Buglioni workshops.

Section Two of the chapter begins with a general overview of the long life and distinguished works of Luca della Robbia, who lived for more than eighty years. The

[24] Leader Scott, *Luca della Robbia with other Italian Sculptors* (London: Sampson Low, Marston, Searle, & Rivington, 1890), 35. In the fifteenth century, the term "stecchino" indicated a tool used for carving fine details into the surface of terracotta sculpture and which could be made of wood, bone, or iron; see Maria Grazia Vaccari, "Tecniche e metodi di lavorazione," in *I Della Robbia e l'"arte nuova" della scultura invetriata*, edited by Giancarlo Gentilini (Florence: Giunti, 1998), 104.

biography is organized chronologically, examining most of the sculptor's accomplishments according to the decade in which they occurred. This brief account of the artist's life and career provides a foundation for Chapters Two, Three, and Four of this dissertation, which are organized thematically and deal with the topics of light, color, and space in Luca's art. It is thus intended to generally orient the reader and does not serve as a substitute for the full biographies offered in the monographs by John Pope-Hennessy (1980) and Giancarlo Gentilini (1992), nor does it offer the more sustained engagement merited by many of the questions and issues it raises. Notes in the text alert the reader to these complexities and point to authors who have discussed them at greater length.

The material qualities of Luca's glazed terracotta sculptures themselves have not always been valued, a phenomenon which ultimately finds its origin in Giorgio Vasari's account of the life of Luca della Robbia in his 1568 edition of the *Vite de' più eccellenti pittori, scultori, e architettori*. In that account, Vasari put forth the argument that Luca invented glazed terracotta sculpture as a means of avoiding the hard work required by marble carving and bronze casting while reaping greater economic gain. Section Three of this chapter outlines the genesis of Vasari's unfortunately influential thesis by tracing the development of a standard biography of Luca della Robbia in the fifteenth- and sixteenth-century sources which preceded Vasari, and upon many of which he drew directly. The section establishes the widely held opinion that Luca was one of the most important fifteenth-century Florentine artists, and shows how the tendency to associate him with the "invention" of glazed terracotta grew in the late fifteenth century, and eventually culminated in Vasari's explanation for the motivation behind his accomplishment. The

analysis presented in Section Three moreover identifies the trio of major works Luca made in marble, bronze, and glazed terracotta for the North Sacristy pier of the Florentine cathedral as the kernel around which narratives about his artistic accomplishments both solidified and morphed.

While Section Three explores the discourse of novelty that grew in written sources contemporaneous to or slightly after the lifetime of Luca and his glazed art, Section Four examines the application of largely preexisting terminology to Luca's new medium. In the fifteenth and sixteenth centuries, the primary term applied to Luca's medium, *terracotta invetriata*, was the same as that used for contemporary maiolica. This section considers therefore the resonances of this reference, as well as those of the terracotta substrate of the sculptures and the other so-called "arts of fire"—glass, enamel, encaustic—to which Luca's material was compared in the early sources. The variety of terms which could be applied to Luca's glazed sculptures underscores the astonishingly expressive possibilities of the medium, which combined reflectivity, brilliant color, and subtle modeling on a human scale.

Finally, Section Five examines the technical properties of the glazed terracotta sculptures made by Luca della Robbia and his heirs in the Della Robbia workshop. It demonstrates the high level of mastery needed to develop the glaze and clay recipes upon which the Della Robbia dynasty was founded, refuting the notion that the new material was less demanding than the more prestigious media of marble and bronze. That Luca had training and mastery in all three media suggests that he was especially well-situated to identify and appreciate the novel expressive possibilities of his medium. Furthermore

Luca's facility in the range of media open to a fifteenth-century sculptor moreover deserves wider recognition in modern art historical accounts of the period.

Section Two: The Life and Works of Luca della Robbia

Luca della Robbia was born in 1399 or 1400 to Simone di Marco della Robbia and his wife, Margherita. A Florentine by birth, Luca remained in his natal city throughout his life; there is no record of any travels made by him, although glazed terracotta sculptures made in the Della Robbia workshop spread throughout Tuscany and were exported as far afield as Portugal and France within his lifetime.[25] The Della Robbia family had lived in Florence since the thirteenth century[26] and many of its members were involved in the wool trade. This circumstance seems to have given rise to their family name: *robbia* is the Italian word for the madder plant (*rubia tinctorum*), the roots of which yielded a red pigment for dying cloth.[27] It has been hypothesized that members of the Della Robbia family were involved in both the trade of this pigment and its use for dying cloth in the fourteenth century.[28] The Della Robbia appear to have been a family of substantial means even before the great success of Luca's glazed terracotta sculpture, judging by a tax declaration (*Catasto*) filed by Simone di Marco in 1427. Simone reported ownership of several pieces of land in and out of the city, and the rate at which

[25] Gentilini, *I Della Robbia. La scultura invetriata*, vol. 1, 15-16 speculates that Luca traveled to Venice and Rimini in his youth. The classicism of Luca's organ loft relief panels has often led to the assumption that he traveled to Rome; see Pope-Hennessy, *Luca*, 18.
[26] Gentilini, *I Della Robbia. La scultura invetriata*, vol. 1, 11
[27] Ibid., 11, who notes the irony that the Della Robbia name derives from a common red pigment for cloth dying at the same time that a red glaze eluded Luca and his heirs, red being a particularly difficult color to obtain in glazes of the period.
[28] They were members of the Arte dei Medici e Speziali and the Arte della Lana which would have housed such workers, but we have no specific information about the respective responsibilities of the individuals involved; see Gentilini, *I Della Robbia. La sculptura invetriata*, vol. 1, 11

he was taxed placed his household among a relatively small group of middle class Florentine families.[29]

The details of Luca's early training remain obscure, a particularly vexing lacuna in light of the facility he attained in marble, bronze, terracotta, and his new medium of glazed terracotta sculpture. No documented work by Luca della Robbia survives before 1432. Indirect evidence suggests his initial training as a goldsmith: three authors within a century of Luca's death make this claim and both Luca and his family had dealings with goldsmiths on several occasions.[30] Such training was not unusual for sculptors of the period and would have given Luca experience with malleable media like wax and terracotta alongside metals. It is also possible that he learned to model and fire clay in the workshop of Lorenzo Ghiberti, one of the artists credited with reviving terracotta sculpture in fifteenth-century Florence who, at the time of Luca's training, was executing his first set of baptistery doors.[31] A single document suggests Luca did work in some capacity on the *Gates of Paradise* in 1427, but does not establish his training in

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[29] Pope-Hennessy, *Luca*, 12, cites the research of Gene A. Brucker, *The Civic World of Early Renaissance Florence* (Princeton: Princeton University Press, 1977). Brucker showed that between the eighty-two percent of the Florentine population who paid less than 1 florin in tax under the new system imposed in 1427 and the richest two hundred and eighty-eight individuals there lay a middle class of approximately fifteen hundred individuals taxed at a rate between one and ten florins. In 1427 Simone di Marco della Robbia, Luca's father, paid taxes of four florins fourteen soldi, placing their family in the middle class group.

[30] For a thorough examination of the evidence and arguments to support the claim that Luca trained as a goldsmith, see Gentilini, *I Della Robbia. La scultura invetriata*, vol. 1, 13-16. The references to Luca as a goldsmith are made by Fra Domenico Corella in 1469 (Appendix A, Document 3), Pomponius Gauricus in 1504 (Appendix A, Document 9), and Giorgio Vasari in 1568 (Appendix A, Document 15), who claimed that Luca studied with the goldsmith Leonardo di ser Giovanni. While this does not agree with the documented period of activity of the latter in the 1360s, it may hold a grain of truth as to the fact that Luca trained as a goldsmith.

[31] The suggestion that Luca trained under Ghiberti goes back to the late seventeenth century with Filippo Baldinucci, *Notizie de' professori del disegno da Cimabue in qua*, vol.1, edited by Giuseppe Piacenza (Turin: Stamperìa Reale, 1768), 434. For the possibility that Luca worked in Ghiberti's shop, see Pope-Hennessy, *Luca*, 16.

Ghiberti's workshop.[32] Yet even if Luca did train as a goldsmith, it did not prepare him to carve marble. Speculation about his instruction in marble continues, and the workshop of Nanni di Banco continues to offer a favored and viable theory.[33] There, Luca would have contributed to major marble projects, such as the classicizing niche sculptures for Orsanmichele and the monumental Porta della Mandorla relief, which he may have helped to complete after the master's death in 1421.

Though the early period of Luca's work is undocumented, a growing corpus of marble, polychrome terracotta, and stucco sculptures has been attributed to it. Their identification relies on affinities of style and composition with known works and must be treated with caution, but they offer the tantalizing prospect of a glimpse at Luca's exploration of figures and space that bears on his later documented works. For example, the *stiacciato* technique used in two figural reliefs at the Louvre assigned to the late 1420s—the *Madonna and Child with Six Angels* (figure 1, and copies) and the *Madonna and Child with Four Saints* (figure 2)—is relevant to the treatment of space explored in the final chapter of this dissertation. Other early works of the Virgin and Child in polychrome terracotta appear to be the predecessors of Luca's later glazed images; this transition is evoked nowhere more intriguingly that in a now-lost polychrome *Virgin and Child* relief (formerly Bode Museum, Berlin) which preserved, beneath its paint,

[32] The 1427 tax declaration (*Catasto*) of Antonio del Vagliente records as debtors Ghiberti along with Donatello and Luca, and to the name of each of the latter was added the description "fa le porte," Gentilini, *I Della Robbia. La sculura invetriata*, vol. 1, 20. In 1475 Piero Cennini (Appendix A, Document 6) listed Luca among though who worked on the *Porta del Paradiso* together with his father, Bernardo.

[33] This theory was first suggested by John Pope-Hennessy, *Italian Renaissance Sculpture* (London: Phaidon, 1958) and favored by Charles Seymour, "The Young Luca della Robbia," *Bulletin/Allen Memorial Art Museum* 20 (1963): 92-119, one of the first extensive examinations of Luca's early period. For the early period see in particular Gentilini, *I Della Robbia. La scultura invetriata*, vol. 1, 13-23; Pope-Hennessy, *Luca*, 16-18; and Charles Avery, "Three Marble Reliefs by Luca della Robbia," *Art Institute of Chicago Museum Studies* 8 (1976): 6-37.

remnants of an unsuccessful white tin glaze.[34] The work can be tentatively dated to the 1430s, the decade in which Luca likely developed his technique of glazed terracotta sculpture; as will be discussed in greater detail below, the first documented glazed sculpture did not appear until the early 1440s.

The year 1432 marks a turning point in the *oeuvre* of Luca della Robbia, after which he regularly received major public commissions for which contemporary records survive. In that year, he began his first documented sculpture and most famous work today: the marble organ loft (figure 3) to be installed above the North Sacristy in the choir of the Cathedral of Florence, Santa Maria del Fiore.[35] This sculpture cemented Luca's reputation in modern scholarship as a marble sculptor and classicizing artist.[36] Though no secure sculptures by Luca predate the loft, he must have been considered a well-established artist in order to secure a commission of such prominence, one of the first decorations for the crossing space under Brunelleschi's new dome. Luca's public image flowered in the years he worked on the organ loft; in 1435/6 the eminent artist and theorist Leon Battista Alberti considered him one of the five most important artists in Florence (Appendix A, Document 1). The project also put Luca into public competition with the great artist Donatello, from whom a pendant organ loft was ordered in 1433. Luca met the challenge well, his loft garnering the favor of his patrons and a higher rate of compensation per panel than that of Donatello.[37]

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[34] Pope-Hennessy, *Luca*, cat. nos. 26, 27, 250; Marquand, *Luca*, 227-228.

[35] The most recent of many studies on the organ loft is Gary M. Radke, *Make a Joyful Noise: Renaissance art and music at Florence Cathedral* (Atlanta, GA: High Museum of Art, 2014). The organ loft contract may have been drawn up as early as 1431, when Luca's name was associated with the purchase of marble in a cathedral document; see Pope-Hennessy, *Luca*, 20, 226.

[36] For Luca as a classicizing artist see Carlo Del Bravo, "L'umanesimo di Luca della Robbia," *Paragone* 24, 285 (1973): 3-34.

[37] See Gary M. Radke, "Luca della Robbia's 'Cantoria': Good, Better, and Best," in Radke, *Make a Joyful Noise*. Only in the early sixteenth century did commentators begin to favor the unfinished carving of

With the huge success of the organ loft, Luca was immediately engaged on an impressive group of further commissions at the cathedral, many for the newly opened crossing and tribune spaces.[38] Beginning in 1437, he made five small marble reliefs to complete an existing program by Andrea Pisano on the Campanile, while in 1439 he accepted a contract to create marble reliefs for the altars of the Chapels of Saint Peter and Saint Paul in the north tribune.[39] In 1442, Luca received a commission for his first large public work in glazed terracotta: the *Resurrection* relief (figure 4) to go above the door of the North Sacristy, a locus of intense decorative activity in these years. The *Resurrection* was set directly under Luca's earlier organ loft, and it was followed in 1446 by a commission for a glazed terracotta relief of the *Ascension* (figure 5) to crown the door of the South Sacristy. In 1446, Luca also formed a partnership with Michelozzo and Maso di Bartolomeo to make a set of bronze doors for the North Sacristy, though he did not actually begin work on this project until 1464.[40] Finally, in 1448 he made two glazed figures of *Candle-Bearing Angels* (figures 6, 7) for the Chapel of Saint Stephen, newly designated as the location for storing the sacrament. In short, the span of a single decade saw Luca engaged at the cathedral on a group of major commissions in marble, glazed terracotta, and bronze. His facility in a range of media at the cathedral site later became the focal point of the first biographies of the artist in the late fifteenth and early sixteenth centuries.

Donatello's cantoria as more legible from a distance over the well-polished surfaces of Luca's loft, an opinion which persists in the literature today.

[38] See Chapter Four for a detailed consideration of Luca's work for the Florentine Cathedral in these years.

[39] Giovanni Poggi and Margaret Haines, *Il Duomo di Firenze: documenti sulla decorazione della chiesa e del campanile tratti dall'archivio dell'opera*, vol. 1(Florence: Medicea, 1988), CXIII-CXIV and documents 1078, 1079, 1080, 1085.

[40] For the partnership between Luca, Michelozzo, and Maso di Bartolomeo, see Harriet McNeal Caplow, "Sculptors' Partnerships in Michelozzo's Florence," *Studies in the Renaissance* 21 (1974): 165-168.

The *Resurrection* is Luca's earliest documented sculpture made entirely in glazed terracotta, and Giorgio Vasari later noted its great success when, in place in 1444, "it was admired as a truly unique work."[41] However, it was certainly not the first work Luca made in the new medium. A few years earlier, in 1441, he had undertaken a Host Tabernacle (figure 8) for a chapel at the hospital of Santa Maria Nuova that included multicolored glazed terracotta decorations.[42] These glazed elements were inset into the frieze, lunette, and base of an otherwise marble tabernacle; some are flat panels painted with flowers and leaves, others are sculptural garlands and cherub heads. The mastery of many colored glazes in that work and the subsequent *Resurrection* has led to unanimous agreement that Luca conducted his experiments in the medium earlier, likely in the 1430s, while also busy with marble carvings for the cathedral. As already suggested, the earliest glazed works by Luca probably represented the Virgin and Child in a small format, an image type that enjoyed a reliable market in fifteenth-century Florence.

During the 1440s, Luca also undertook other glazed terracotta projects for venues outside the cathedral. Around 1445 he made the *Visitation* figure group (figure 9) comprised of the Virgin and her cousin Elizabeth, whose faces show Luca's masterful command of human emotions and physiognomies. They, and the 1448 *Candle-Bearing Angels* at Florence Cathedral, are sculpted in the round at just under life-size, an experiment with freestanding figures in the new medium. Luca may have also begun work on a group of reliefs of the twelve *Apostles* for the Pazzi Chapel at Santa Croce

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[41] "fu come cosa veramente rara e ammirata"; Giorgio Vasari, *The Lives of the Artists*, translated with an Introduction and Notes by Julia Conaway Bondanella and Peter Bondanella (Oxford: Oxford University Press), 70.

[42] See catalogue entry by Beatrice Paolozzi Strozzi in *La primavera del Rinascimento. La scultura e le arti a Firenze 1400-1460*, edited by Beatrice Paolozzi Strozzi and Marc Bormand (Florence: Mandragora, 2013), cat. no. IX.9, 468-469; and Anna Padoa Rizzo, "Luca della Robbia e Verrocchio. Un nuovo documento e una nuova interpretazione iconografica del tabernacolo di Peretola," *Mitteilungen des Kunsthistorischen Institutes in Florenz* 38, 1 (1994): 48-68.

(figure 10) during this period, although no known documents exist for the reliefs and the building timeline of the chapel itself is debated.[43] In 1447, he made glazed terracotta vault and roof decorations for the barrel-vaulted Chapel of the Crucifix at San Miniato al Monte (figure 11), commissioned by Piero de' Medici, the future *de facto* ruler of Florence. Maso di Bartolomeo contributed to the chapel, the design of which is attributed to Michelozzo; although their 1446 partnership with Luca was formally limited to the bronze doors, the trio seems to have worked together at this and several other sites.[44]

Thus the prestige, diversity, and quantity of glazed terracotta commissions Luca received in the 1440s confirm the viability and appeal of the medium. It is still not known where Luca made or fired his early glazed works, or—a related concern—where he learned to use tin glazes. Whatever site hosted the initial experiments, production soon shifted to a house in the Via Guelfa that Luca and his brother, Marco, bought in 1446.[45] Luca lived there until his death in 1482 and, a bachelor, became guardian to the children of Marco, who died in 1448. Luca trained one of Marco's sons, Andrea della Robbia, in his glazed art and was later succeeded by him as head of the Della Robbia family workshop. Located on the edges of the city's inhabited zone, the Via Guelfa property housed a kiln (kilns and furnaces were discouraged in the crowded city center) and thus the family workshop. The best surviving account of the workshop facilities is found in Andrea della Robbia's will of 1522, which records an "*anticucina* in which [are] the kiln

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[43] For an argument dating the commission for the roundels of the *Apostles* to circa 1442, see Pope-Hennessy, *Luca*, 236-237; Gentilini, *I Della Robbia. La scultura invetriata*, vol. 1, 104 gives varying dates to the twelve roundels which span the period 1445-1470. Questions of chronology and attribution have dominated the discussion of these roundels to the exclusion of other art historical concerns. For a (brief) interpretation of their iconography, see Paul Barolsky, "Toward an Interpretation of the Pazzi Chapel," *Journal of the Society of Architectural Historians* 32, 3 (1973): 228-231.
[44] Caplow, "Sculptors' Partnerships," 165-168.
[45] Gentilini, *I Della Robbia. La scultura invetriata*, 129

and troughs reserved for the *arti victreriarie*."[46] The rights to the Via Guelfa property were the subject of legislation after the deaths of both Luca in 1482 and Andrea in 1525, confirming the importance of that site for the lucrative manufacture of glazed terracotta sculpture.

Those reflective new products continued to capture the imagination of major patrons in the 1450s, at the same time that a new artistic personality, Luca's nephew Andrea, began to emerge in the workshop. Sometime in the early 1450s, Luca made a glazed ceiling and floor for Piero de' Medici's private *studiolo* in the Medici Palace on Via Larga[47] and, in the same years, created a marble tomb with a glazed terracotta frame for the Bishop of Fiesole, Benozzo Federighi (figure 12), originally installed in the church of San Pancrazio.[48] In both works he experimented with his medium as a form of painting, applying glazed brushstrokes to flat pieces of terracotta. Luca's reputation spread outside of Florence and even Italy. A shipment of glazed sculptures to Lisbon, Portugal is documented in 1454,[49] while in 1468 a member of the Neapolitan court sought a painted copy of Piero de' Medici's study in order to replicate it for himself.[50] Closer to home, in 1451, Luca made a glazed lunette of the *Virgin and Child with Saints*

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[46] Allan Marquand, *Andrea della Robbia and his Atelier*, 2 vols. (Princeton, NJ: Princeton University Press, 1922), 55.

[47] See the catalogue entry by Keith Christiansen, "The Labors of the Months. A. January and B. June," in *From Filippo Lippi to Piero della Francesca: Fra Carnevale and the Making of a Renaissance Master*, edited by Keith Christiansen, (New Haven and Yale: Yale University Press, 2005), 198-199; Gentilini, *I Della Robbia. La scultura invetriata*, vol. 1, 110-112; Pope-Hennessy, *Luca*, 43-45, and cat. no. 12, 240-242.

[48] See Hannelore Glasser and Gino Corti, "The Litigation concerning Luca Della Robbia's Federighi Tomb," *Mitteilungen des Kunsthistorisches Institutes in Florenz* 14, 1 (1969): 1-32; and Herbert P. Horne, "Notes on Luca della Robbia," *The Burlington Magazine for Connoisseurs* 28, 151 (1915): 3-7.

[49] Pope-Hennessy, *Luca*, 74. In 1453 Luca also made two glazed pictures and a Virgin "per Marchese di Portogallo," Gentilini, *I Della Robbia. La scultura invetriata*, vol. 1, 105.

[50] Eve Borsook, "A Florentine Scrittoio for Diomede Carafa," in *Art the Ape of Nature. Studies in Honor of H.W. Janson*, edited by Moshe Barasch, Lucy Freeman Sandler, and Patricia Egan, 91-96 (New York: H.N. Abrams, 1981).

(figure 13) for the main portal of San Domenico in Urbino.[51] Even bigger changes in the workshop dynamic were underfoot in these years, for it seems Andrea had accepted independent commissions as early as 1455 and enrolled in the Arte dei Maestri di Pietra e Legname in 1458.[52]

The 1460s held fewer major documented projects, although those that are recorded were prestigious and public in nature. First, there was the glazed terracotta ceiling for the Cardinal of Portugal Chapel at San Miniato al Monte, Florence (figure 14), the decoration of which involved a team of top painters and sculptors including Antonio and Bernardo Rossellino, Antonio and Piero Pollaiuolo, and Alesso Baldovinetti; documents for Luca's part in the complex exist from 1461-1462.[53] The tabernacles of the Madonna and the Cross at Santa Maria in Impruneta may also date to this decade, as a payment to Luca from 1466 has been associated with this commission.[54] From 1464 on, Luca was reengaged on the major commission of the bronze doors for the North Sacristy of Florence Cathedral (figure 15), for which he had signed a joint contract in 1446 with Michelozzo and Maso di Bartolomeo, but had conducted no work in the interim. Luca's first dated coats of arms, or *stemmi*, also date to this period, large ones for display over the niches of the Mercanzia, the Arte dei Maestri di Pietra e Legname, and the Arte dei Medici e Speziali at the church of Orsanmichele.

It is less easy to determine the extent of Luca della Robbia's output in the 1470s, when Andrea seems to have become the dominant force in the workshop. Luca's work on

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[51] See John Pope-Hennessy, *Luca*, 62-63 and cat. no. 30, 251-252
[52] Gino Corti and Frederick Hartt, "Documents. New Documents Concerning Donatello, Luca and Andrea della Robbia, Desiderio, Mino, Uccello, Pollaiuolo, Filippo Lippi, Baldovinetti and Others," *The Art Bulletin* 44, 2 (1962): 159-160, 164.
[53] Frederick Hartt, Gino Corti, and Clarence Kennedy, *The Chapel of the Cardinal of Portugal, 1434-1459* (Philadelphia: University of Pennsylvania Press, 1964).
[54] Pope-Hennessy, *Luca*, 246

the bronze doors for the cathedral sacristy continued into the 1470s, but glazed sculptures of this period are attributed to him on stylistic rather than documentary evidence.[55] Luca suffered an illness that prompted him to declare himself unable to serve as Consul of the Arte dei Maestri di Pietra e Legname in September 1471 and perhaps it also motivated his decision to make a will earlier in February of that year.[56] Yet it was another eleven years before Luca's death, in 1482, left Andrea at the helm of a very successful family workshop in which his sons soon played a large role. The financial advantages that Andrea enjoyed from sculptures in Luca's new medium ultimately seem to have caused tensions between the men. In a 1469 tax return, Andrea states that his uncle Luca was demanding a large sum of money from him, which would leave him quite poor if paid; Pope-Hennessy has suggested the request regarded Andrea's use of the kiln and Luca's recipe.[57] Just two years later in his will of 1471, Luca left all of his belongings to his second nephew and the brother of Andrea, Simone di Marco, and nothing to Andrea. In justifying this decision, Luca explained that he had trained Andrea in his art and licensed him to use it such that he was already very wealthy ("superlucratus"), and had the promise of making still more money.

Andrea subsequently trained five of his sons in the art of glazed terracotta sculpture: Marco (Fra Mattia), Giovanni, Luca il Giovane, Francesco (Fra Ambrogio), and Girolamo.[58] A second workshop specializing in glazed terracotta art opened at the end of the fifteenth century: that of Benedetto Buglioni, who likely trained under Andrea,

[55] For the bronze door project in the 1470s and the documents, see Pope-Hennessy, *Luca*, 70, cat. no. 47, 258-261.
[56] Pope-Hennessy, *Luca*, 13
[57] Pope-Hennessy, *Luca*, 14
[58] Marco and Francesco became Dominican friars in the Convent of San Marco, Florence, in the 1490s; thereafter they were also known, respectively, as Fra Mattia and Fra Ambrogio.

and his adopted nephew, Santi.[59] The two families produced incredibly successful artists who carried the tradition of glazed sculpture into the mid-sixteenth century. Yet Luca della Robbia has continued to enjoy a far more favorable reputation than his heirs in art historical literature.[60] The preeminence accorded to him stems from several factors. Firstly, Luca's status as "inventor" of glazed terracotta sculpture guaranteed him celebrity and status within later accounts of Renaissance art which celebrated the ideal of individual artistic invention. Even if later scholars did not always value the inherent expressive qualities of his medium, the merit of Luca's glazed works was cemented by their appeal to patrons of the highest order like the Operai of the cathedral of Florence and members of the Medici family, in particular Piero de' Medici. Finally, Luca had begun his career with the classicizing organ loft, proving his excellence as a classicizing marble carver and thus establishing beyond doubt his place within the revival of antiquity widely considered characteristic of the Renaissance.

Luca's status as inventor of glazed terracotta sculpture has thus been omnipresent in literature on glazed terracotta sculpture, a reputation which can be traced back to its origins in the fifteenth century. In order to better understand what might be considered a "narrative of invention" that developed around Luca della Robbia, the next section reviews the fifteenth- and sixteenth-century sources which discuss the sculptor and his medium, leading up to the publication of Giorgio Vasari's immensely influential *Lives of*

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[59] For an account of the artistic activity of Andrea's sons, and of the Buglioni workshop, see Gentilini, *I Della Robbia. La scultura invetriata*, vol. 2. Otherwise, the best accounts of these artists are still Allan Marquand's early twentieth-century monographs: Allan Marquand, *Giovanni della Robbia* (Princeton, NJ: Princeton University Press, 1920); Allan Marquand, *Andrea della Robbia and his Atelier*, 2 vols. (Princeton, NJ: Princeton University Press, 1922); Allan Marquand, *The Brothers of Giovanni della Robbia. Fra Mattia, Luca, Girolamo, Fra Ambrogio* (Princeton, NJ: Princeton University Press, 1928).

[60] The neglect of the later generations of Della Robbia and Buglioni artists is currently being redressed by the new research cited in the Introduction to this dissertation, in particular in the work of Rachel Boyd, Marietta Cambareri, Stephanie Miller, and Zuzanna Sarnecka.

the Artists in 1550 and 1568. These sources are well-known in literature on the Della Robbia and attest to the esteem in which both the man and his material were held. Yet they have not been isolated as a group in order to undergo an analysis of the development of the narrative about Luca's invention, which was shaped by the individual voices and concerns of various authors over the course of roughly one century. The following section will in particular identify and examine the reasons for which the narratives about Luca's development of the new medium became closely associated with the triad of sculpture in marble, bronze, and glazed terracotta that Luca made for the cathedral of Florence.

Section Three: Early Accounts and a Developing Master Narrative for Luca della Robbia

This section traces the language of "invention" that appeared regularly in written sources which discuss Luca della Robbia and his glazed terracotta art in the fifteenth and early sixteenth centuries. Such language appeared right away in the payment document for Luca's first major public glazed terracotta sculpture, the cathedral *Resurrection,* and ultimately gained codification in Giorgio Vasari's 1568 *Lives of the Artists,* which set the shape of subsequent study and research about Luca and his heirs in the Della Robbia workshop. The ramifications of Vasari's monumental literary accomplishment continue to require scrutiny and contextualization after nearly five hundred years, particularly in relation to the Della Robbia where the influence of his narrative has only recently been

examined with a critical eye.[61] This section follows the early literary trail in order to show how the accounts available to Vasari determined the structure of his text and arguments. In particular, it identifies the triad of commissions Luca made for the Florentine cathedral—the organ loft, bronze doors, and glazed terracotta lunettes—as a core around which narratives about Luca's glazed art grew from the late fifteenth century on. While early authors used the triad to praise Luca's mastery in varied media, in 1568 Vasari ultimately reshaped the narrative around them into a tale about saving time and money, a reorientation which lasted into the twentieth century and contributed to an underappreciation of glazed terracotta sculpture.

The analyses presented in this section should be read in conjunction with Appendix A, which transcribes excerpts of sixteen previously-published documents from the fifteenth and sixteenth centuries that name or discuss Luca della Robbia. The transcriptions hail from a range of document types, from artistic treatises to private letters, to lists of famous men and their accomplishments. It should be noted that two types of documents are omitted from the Appendix: first, records of the contracts and payments made in relation to the production or shipping of specific works by Luca and, second, his will and the subsequent litigation surrounding it. To include these documents would have rendered the Appendix long and unwieldy without greatly contributing to the narrative this section traces.[62] One exception is made for discussion of three contract and payment documents for Luca's *Resurrection* and *Ascension* lunettes for the Florentine

[61] For a very brief examination of the Della Robbia in relation to familial themes in the *Lives of the Artists*, see Paul Barolsky, *Giotto's Father and the Family of Vasari's Lives* (University Park, PA: Pennsylvania State Press, 1992), 33-35.
[62] See Gentilini, *I Della Robbia. La scultura invetriata*, and Pope-Hennessy, *Luca*, for these documents.

cathedral of 1442-1444 and 1446-51, transcribed separately in Appendix B, as it bears directly on the arguments of this section.[63]

Looking at the sources collected in Appendix A, it can be observed that the authors who wrote about Luca della Robbia prior to Vasari's 1550 and 1568 *Lives* generally shared three purposes in their discussion of the sculptor. The first was to establish Luca's status as an artist in fifteenth-century Florence, which was accomplished by listing him among other distinguished artists of the day. The second was to enumerate an impressive (but not exhaustive) list of works by his hand; in a variation on this model, Luca also appeared in texts which identified artworks at key sites within the city of Florence. The third, and final, aim was to identify and praise the invention of glazed terracotta sculpture. Not every source in Appendix A set out to accomplish all three goals, although many did. The first two objectives were generic and relevant to many of the artists discussed in the sources under review; ultimately, the impulse to tabulate the names and deeds of famous men derives from classical literature known in the fifteenth century.[64] However, the final goal—to celebrate the invention of glazed terracotta—is particular to Luca della Robbia and distinguishes narratives about him from those of his peers.

Sources before Giorgio Vasari (1435/6-1550)

The earliest surviving reference to Luca among those listed in Appendix A was made by Leon Battista Alberti (Document 1) in the dedicatory letter of his 1435/6 treatise

[63] The documents in Appendix B will be discussed again in Chapter Four of this dissertation.
[64] The source for such biographies within an artistic context was Pliny the Elder, who gave schematic chronological accounts of the best Greek and Roman artists, and their most notable inventions, in Books 32 to 37 of his *Natural History*. For the knowledge and reception of Pliny's *Natural History* during the fifteenth century in Italy, see Sarah Blake McHam, *Pliny and the Artistic Culture of the Italian Renaissance: the Legacy of the "Natural History"* (New Haven: Yale University Press, 2013).

on painting, *Della pittura*, written in Italian. In it, Alberti praised Brunelleschi and four other artists, Ghiberti, Donatello, Luca della Robbia, and Masaccio, for reviving Florentine art to the level of that of antiquity. A discerning theorist and artist, Alberti established Luca's position among the top artists of his day and associated him with the desire to revive classical art. The core group of elite artists named by Alberti is again echoed in three later sources that include Luca. The first is a letter written by the humanist Alamanno Rinucci in 1472 to the Duke of Urbino (Document 5), which singles out three sculptors for praise, Donatello, Luca, and Ghiberti, in a celebration of the artists of the era. The same group of three sculptors, plus two others, was described as employed on the [north] doors of the baptistery in a letter from Piero Cennini to Pirrino Amerino of 1475 (Document 6). Another version of the group appears in Vespasiano da Bisticci's mid- to late-fifteenth century account of famous men of his day, the *Vite di uomini illustri del secolo XV* (Document 7); his life of the esteemed and eccentric Florentine humanist and collector Niccolo Niccolì records that Niccolì was an intimate friend ("fu amicissimo") of the artists Brunelleschi, Donatello, Luca della Robbia, and Ghiberti.[65] While Vespasiano's text establishes the elevated social and intellectual environments to which Luca had access, inclusion with the others suggest the regularity with which he was upheld as an eminent sculptor during his own lifetime.

[65] The overlapping of professional and friendship relationships between these men is also reflected by Giorgio Vasari's tale, in his *Vita* of Filippo Brunelleschi, that Donatello and Luca comforted Brunelleschi when he had gone nearly out of his mind in frustration at being forced to share responsibility for the cathedral dome project with Ghiberti; Vasari, *The Lives of the Artists*, 128. Whether spurious or not, the tale derives its effectiveness on the believability of close working relations between these men. In a second incident, recorded by Antonio Manetti, Luca is cited as criticizing later changes made to Brunelleschi's design at San Lorenzo; Antonio Manetti, *Vita di Filippo Brunelleschi: preceduta da La novella del Grasso*, edited by Domenico De Robertis and Giuliano Tanturli (Milan: Il Polifilo, 1976), 112. Whether or not the story is true, it assumes its readers would regard Luca and a likely and qualified commentator on the situation. The close social relationship between Brunelleschi and Luca is also attested to in the *Novella del Grasso*, ibid., 43.

Luca was similarly ranked among the masters of his day in two longer lists which are, by nature, somewhat less exclusive. The first is found in the *Libro architettonico* (Document 2), written by the artist Filarete circa 1464.[66] There, Filarete lists Luca among the sculptors to be hired (only in theory) to build and decorate the fictive city of Sforzinda which forms the subject of his book. Later on in the text, he praises Luca separately for his glazed terracotta decoration in the *studiolo* of Piero de' Medici, recognizing the artist as "master" ("maestro") of that new medium. It should also be recognized, of course, that the discussion of the *studiolo* stems from the fact that Filarete dedicated his book to Piero, and thus praised his patronage. Luca also surfaced in an even more democratic artist list compiled by the intellectual Benedetto Dei in his *Memorie Istoriche* of 1470 (Document 4).[67] It catalogs all of the sculptors who conducted an active workshop in Florence at that time and includes both Luca—"El mastro Luccha della Robbia gram maestro"—and his nephew, Andrea. Dei lists Luca fourth—after Brunelleschi, Donatello, and Ghiberti—and confers on him the title "gram maestro," a distinction he does not give to any other artist, exceeded only by the title given to Brunelleschi, "re del mondo."[68]

The sources reviewed up to this point, with the exception of Filarete, universally present Luca della Robbia as an esteemed artist but do not mention the glazed art that set him apart from his peers. Writing circa 1464, Filarete was the first author to specifically identify Luca as "master" of the medium of glazed terracotta. Yet three documents relating to the *Resurrection* and *Ascension* reliefs at the cathedral did also acknowledge

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[66] Filarete, *Treatise on Architecture: Being the Treatise by Antonio di Piero Averlino, known as Filarete*, translated by John R. Spencer (New Haven: Yale University Press, 1965), 76-77.
[67] Gilbert, 202-205
[68] Gentilini, *I Della Robbia. La scultura invetriata*, vol. 1, 85

the novelty of the glazed terracotta and Luca as its inventor and merit brief review here: the *Resurrection*'s contract and final payment records (Appendix B, Documents 1 and 2) and the *Ascension*'s contract record (Appendix B, Document 3). The most important of these is the final payment for the *Resurrection* in 1444, which assigns 140 *lire* of the total 440 *lire* paid to Luca as compensation for his "industry and invention in discovering the said work,"[69] that is, his development of glazed terracotta sculpture itself.[70] The monetary valued assigned to this aspect of the commission corroborates the sense of novelty attached to the medium in the contract record of 1442. That document implied the medium might not be well-known, saying that Luca would make the *Resurrection* "in glazed terracotta (*terra cotta invetriata*) as can be seen in other works."[71] The reference to "other works" perhaps served to clarify the nature or to establish the viability of the medium. The *Resurrection* itself then served as the point of reference for describing the material in the 1446 contract record for the *Ascension*, to be made "in glazed terracotta, that material which is used in the arch of the [north] sacristy."[72] In sum, Luca's cathedral patrons seem to have been aware of the newness of the material they used, acknowledging it both in their language and their payments.

Turning again to Filarete, he therefore confirmed the novelty of the glazed terracotta sculptures which had been acknowledged in the payment records. Noting great admiration for the glazed ceiling and floor in Piero de' Medici's *studiolo,* he declared, "The master of these glazed terracottas was Luca della Robbia, as he is called by name,

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[69] "pro sua industria et inventione ad inveniendum dictum laborerium"
[70] Gentilini, *I Della Robbia. La scultura invetriata*, vol. 1, 96
[71] "Resurrexionem Domini di terra cotta invetriata prout videntur alia laboreria" (translation mine). Document published in Poggi and Haines, *Il Duomo di Firenze*, Doc. 1533.
[72] "terre cocte Invetriate illius materie qua est illa posita in arcu sacrestie" (translation mine). Document published in Poggi and Haines, *Il Duomo di Firenze*, Doc. 1563.

who is a most noble master of this glazing…"[73] (Document 2) Filarete did not use the term "invention," but rather linked the astonishing medium to its "master," Luca. Such a recognition of Luca as the chief practitioner of glazed terracotta sculpture was doubtless widespread throughout his lifetime, if not recorded in the earliest written sources. For instance, this seems to be implied in a comment made by [the Bishop of Silves], patron of the Chapel of the Cardinal of Portugal at San Miniato al Monte: "ho veduto col famoso Luca di Simone di Marco della Robbia per i lavori di terra cotta della cupola di essa Cappella del Cardinale…"[74] Yet although an acknowledgement of Luca's status as inventor may have been generally known, it did not find its way into a majority of the texts that mention or discuss him until after his death. After Filarete, the next author to record this achievement was Antonio Manetti in his *De' Viri illustri di Firenze*, an account of famous Florentines likely dating to the 1490s (Document 8). After this point authors make reference to the innovation more frequently, and it is repeated another four times in texts that precede Vasari's first edition of the *Vite* in 1550.

Antonio Manetti's account of Luca della Robbia, while short, is extraordinarily important as a germ around which stories about Luca developed in the following half-century, ultimately giving rise to Vasari's two editions of the *Vite*.[75] The content of Manetti's text is therefore worth summarizing here. Manetti begins by identifying Luca as a master sculptor in casting, marble, and earth, as well as "the first to find the technique of glazing figures."[76] He says Luca made many things, but at the cathedral in

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[73] "El maestro di questi invetriamenti si fu Luca della Robbia, così per nome si chiama, il quale è dignissimo maestro di questi invetriati..." Anna Maria Finoli e Liliana Grassi, eds. *Antonio Averlino detto il Filarete. Trattato di architettura* (Milan: Edizioni il Polifilo, 1972), 696-697.
[74] Pope-Hennessy, *Luca*, cat. no. 14, 244.
[75] See Peter Murray, "Art Historians and Art Critics-IV. XIV Uomini Singhularii in Firenze," *The Burlington Magazine* 99, 655 (1957): 330-336.
[76] "fu el primo che trovò lo invetriare le figure"

Florence one sees three wonderful works by him all together: the bronze doors of the sacristy (figure 15), the organ loft (figure 3), and in the arches above the sacristy doors "the figures of glass, or rather glazed terracotta,"[77] which show the Resurrection and Ascension (figures 4, 5). Luca made other works in the city and elsewhere and was, Manetti concludes, a man of good manners and intellect. This short account makes its point with an impressive economy of words, painting Luca as a master of bronze, marble, and earth, proved by "wonderful" works in each medium for a single site; the cathedral commissions serve as a synecdoche for Luca's career. They are not given in order of completion (if so, the bronze doors would be last) and while Manetti does not seem to prioritize one medium over the other, by addressing glazed terracotta last in his first and second sentences he leaves room for explanation of the technique. His equation of glass and glazed earth will be discussed further in Section Four; here what matters is that Manetti clearly identifies Luca as the first artist to glaze sculpted figures and that he places this accomplishment on even par with Luca's sculptures in marble and bronze.

Four authors after Manetti, and prior to Vasari, celebrated Luca's invention or discovery (word choice varies by author) of glazed terracotta sculpture. The earliest was likely Pomponius Gauricus, a humanist and author whose treatise on sculpture, *De sculptura* (Document 9), was published in Florence in 1504.[78] He briefly mentions Luca in a chapter naming contemporary Italian sculptors, and their ancient Greek predecessors, who mastered the types of sculpture—e.g., carving, modeling, casting—described in his preceding chapter. Luca appears among those who excelled in plastic sculpture (modeling); Gauricus identified Luca as inventor of a technique of terracotta sculpture

[77] "figure di vetro, ovvero di terra invetriata"
[78] See Pomponius Gauricus, *De Sculptura*, annotated and translated by André Chastel and Robert Klein (Geneva: Droz, 1969). For a discussion of the aims of Gauricus's text, see McHam, *Pliny*, 259-261.

painted with encaustic.[79] His unusual locution is illuminating in regard to the classical resonances Luca's medium could have, as Marco Collareta has shown (see Section Four of this chapter). Leonardo da Vinci offered a similarly fresh account of the medium in undated notebooks (late-fifteenth or early-sixteenth century), issued as the *Trattato della pittura* (Document 10) by Francesco Melzi between 1519 and 1542.[80] Leonardo praised the Della Robbia technique as a method of making painting eternal: the Della Robbia had "found a way of conducting every great work of painting on terracotta covered with glass."[81] Leonardo and Gauricus notably define Luca's achievement by means of a comparison with painting, whether in oil, tempera, or encaustic; the implications of this choice are examined in the following section. Leonardo's account is especially important for the narrative of invention traced here because it is the first to assign a motivation for using glazed terracotta. He does not necessarily attempt to discern the goals that moved Luca to invent the medium, but rather identifies the physical quality an artist (like himself) might value in it: it makes images painted in color eternal, a major sticking point for painting within contemporary *paragone* debates about its value relative to sculpture.[82] Neither Filarete nor Manetti had tried to explain the nature of the appeal glazed terracotta held, nor would the subsequent writings of Antonio Billi and the Anonimo

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[79] "cuius inuentum, fictile opus encausto pingi"

[80] Leonardo may have had first-hand experience of the Della Robbia workshop through his friend Giovanni Francesco Rustici, who made glazed terracotta sculptures to be glazed by the Della Robbia workshop. The two men shared a house in the first years of the sixteenth century, and Leonardo was influential for the younger Rustici's art; for Rustici's glazed terracotta sculptures, see Marietta Cambareri, catalogue entry in *Leonardo, Michelangelo, and the Renaissance in Florence*, edited by David Franklin (Ottawa: National Gallery of Canada, 2005), 76-77. Leonardo's interest in the Della Robbia and in encaustic technique is discussed by McHam, *Pliny*, 168-169.

[81] "hano trovato modo di cond[u]re ogni grand'opera in pittura sopra terra cotta coperta di uetro"

[82] The literature on the *paragone* debate is vast. Two entry points to the issues involved are Rudolf Preimesberger, *Paragons and Paragone: Van Eyck, Raphael, Michelangelo, Caravaggio, and Bernini* (Los Angeles: Getty Research Institute, 2011); and Claire J. Farago, *Leonardo da Vinci's* Paragone. *A Critical Interpretation with a New Edition of the Text in the* Codex Urbinas (Leiden; New York; Copenhagen; Köln: E.J. Brill, 1992).

Magliabechiano; only with Vasari, especially in the second edition of the *Vite*, did an apologetics of glazed terracotta become a hallmark of Della Robbia literature.

Gauricus and Leonardo each took a distinctive approach to understanding Luca's medium. This separates them from the other two texts of the first half of the sixteenth century, the Libro of Antonio Billi (Document 12) and the Anonimo Magliabechiano (or Gaddiano, Document 13), that drew and expanded on the earlier account of Luca given by Manetti. Both texts presented a history of Renaissance artists and organized their works into individual biographies. The Libro of Antonio Billi is earlier, dated circa 1515-1530, and served as a source on which the Anonimo Magliabechiano, written after 1541, drew heavily.[83] They will be discussed together here. As they pull from Manetti, both accounts begin with a long paragraph (the longest section of both texts) about Luca's work at the cathedral; unlike Manetti, they dive right into a list of the works themselves without naming the media in which Luca worked. Both Antonio Billi and the Anonimo Magliabechiano switched the order of the first two works, examining the organ loft prior to the bronze doors. Yet, like Manetti, their list is not in correct chronological order and it leaves the glazed lunettes to the end. At that point, the two texts use nearly identical

[83] The Libro di Antonio Billi and the Anonimo Magliabechiano are among the most important art historical sources to predate Vasari's *Vite*. The original manuscript of the Libro is lost and the text survives today in two copies, called the Codex Strozziano and the Codex Petrei, which demonstrate notable differences. The Strozziano is felt to be more faithful to the original but also more incomplete due to damage. The life of Luca della Robbia is included in the Codex Petrei but not in the Codex Strozziano. See Cornelio von Fabriczy, "Il libro di Antonio Billi e le sue copie nella Biblioteca Nazionale di Firenze," *Archivio storico italiano* VII (1891): 299-368; Carl Frey, ed., *Il Libro di Antonio Billi. Esistente in due copie nella Biblioteca Nazionale di Firenze* (Berlin: G. Grote, 1892).

The Anonimo Magliabechiano is the second of the two sources. It includes a reference to Michelangelo's Last Judgment fresco and therefore may date after 1541. The Anonimo Magliabechiano draws heavily upon the earlier Libro di Antonio Billi; the Anonimo includes frequent marginalia drawn from the Libro and attributes it to one "Antonio Billi." It is on this basis that the name Antonio Billi is associated with the Libro. See Bouk Wierda, "The True Identity of the Anonimo Magliabechiano," *Mitteilungen des Kunsthistorischen Institutes in Florenz* 53, 1 (2009): 157-168; Carl Frey, ed., *Il Codice Magliabechiano cl.XVII. 17 contenente Notizie sopra l'arte degli antichi e quella de' fiorentini da cimabue a michelangelo buonarotti, scritte da Anonimo Fiorentino* (Berlin: G. Grote, 1892).

phrases to explain that glazed terracotta was a technique that Luca discovered and conducted with care.

Antonio Billi and the Anonimo Magliabechiano did, however, provide new information in their concluding sentences. Manetti had ended with a statement that Luca "made many other works for the city and elsewhere," but the context of his statement did not clarify in what medium. The sixteenth-century documents removed this ambiguity. Antonio Billi ended with a reference to many pictures and figures "of the same [glazed terracotta]" in and out of the city, and a separate mention of a tomb for the *infante* of Naples. The Anonimo Magliabechiano inserted a specific list of glazed terracotta works by Luca at Santa Croce and San Minato al Monte before concluding with Billi's phrases about the glazed pictures and figures, and the Neapolitan tomb. Only Billi included a further note that Luca left behind his nephew. The Anonimo Magliabechiano by his own admission drew on the earlier account, and the resultant similarity of both texts to Manetti is important in solidifying, through repetition, this nascent biography of Luca as an artist. The biography that took shape with these two authors was to act as a framework on which Giorgio Vasari built, ultimately producing his influential *Vita* of Luca della Robbia in 1568.

Two final sources should be reviewed briefly before turning to Vasari. These are the texts of Fra Domenico Corella from 1469 (Document 3) and that of Francesco Albertini from 1510 (Document 11). They are guidebooks.[84] The passage from Corella's text comes from his *Theotocon*, a book dedicated to Mary that describes the decorations

[84] The Theotocon by Fra Domenico Corella is not only a guidebook, as it includes stories from the life of the Virgin and her miracles, as well as a guide to churches dedicated to her in Florence and Rome; Creighton Gilbert, *L'arte del Quattrocento nelle testimonianze coeve*. Florence and Vienna: Irsa, 1988: 175.

within Florentine churches dedicated to her (and other saints).[85] His reference to Luca is short, calling Luca a goldsmith ("Lucas auri percussor & aeris") and praising the bronze doors for the cathedral, but not the nearby organ loft or glazed reliefs. Francesco Albertini's *Memoriale di molte statve et picture sono nella inclyta Cipta di Florentia* (1510) is a guidebook of the city and includes more sculptures by Luca: besides his doors and organ loft at the cathedral, it includes "several things" ("assai cose") made in conjunction with Donatello and Desiderio da Settignano in the Pazzi Chapel at Santa Croce, and "[figures] of middle relief"[86] in the Cardinal of Portugal Chapel at San Miniato al Monte. Beyond the fact that the same works were later named by the Anonimo Magliabechiano, it should be noted that Albertini did not specify the medium of any of the works he ascribed to Luca. Albertini did name the materials used in some other works, but it is worthwhile to remember that he may have valued the subject, location, and purpose of the artworks more than their medium.

Giorgio Vasari (1550 and 1568)

The final author analyzed here is Giorgio Vasari, the famous Aretine artist and art historian who compiled an extensive book of artists' biographies titled *Le vite de' più eccellenti pittori, scultori, e architettori*. Vasari issued his work in two editions, a shorter first edition in 1550 and a greatly expanded second edition in 1568, the latter work exercising an enduring influence on the course of Western European art history. The

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[85] Gilbert, *L'arte del Quattrocento*, 175-178.

[86] "[figure] di mezzo rilievo"; *Five Early Guides to Rome and Florence*, introduction by Peter Murray (Farnborough: Gregg International Publishers Limited, 1972). A related manuscript is published in Enzo Bentivoglio, "Un manoscritto inedito connesso al 'Memoriale di molte statue et picture' di Francesco Albertini," *Mitteilungen des Kunsthistorischen Institutes in Florenz* 24, 3 (1980): 345-356; it appears to copy and perhaps update the earlier printed edition of Albertini's text from 1510 and lists Luca's works in the Pazzi Chapel and the Chapel of the Cardinal of Portugal, but not at Santa Maria del Fiore. See also Ugo Procacci, "Del 'Memoriale di molte statue et picture sono nella inclyta cypta di Florentia' di Francesco Albertini," *Antichità viva* 25, 4 (1986): 5-11.

relatively short life of Luca della Robbia that Vasari included in the first edition (Document 14) directly reflected the structure and content of the earlier writings by Antonio Manetti, Antonio Billi, and the Anonimo Maglibechiano. It set the stage for bigger changes to that narrative in the much longer edition of 1568 (Document 15). The later biographer of Luca is a complex text and it lies outside the scope of the present discussion to analyze it fully. The focus here will lie on how Vasari treated the trio of commissions Luca executed for the cathedral, which formed a focus of the developing narrative about Luca as an artist. More general observations will be made about the specific works of art, and accompanying lines of interpretation, that Vasari included in each version of the *Vita* of Luca della Robbia.

Vasari organized the biography of 1550 into five paragraphs, each with a distinct purpose. The first addressed Luca's activity in the media of marble, bronze, and glazed terracotta; the second reviewed his cathedral commissions; the third offered a succinct list of other sculptures in glazed terracotta; the fourth briefly introduced later Della Robbia artists and recounted Luca's death; and the fifth and final paragraph defended the usefulness of glazed terracotta sculptures, even if they were no longer greatly esteemed.[87] The first paragraph is presented as a general rumination on the mastery of different media by a single artist, which happens to be organized around Luca della Robbia. Vasari declared that many who have mastered marble and bronze to great acclaim eventually wished to cease that activity because of its difficulty, preferring any other type of labor instead. Such artists, through their cleverness, developed beautiful inventions solely for the purpose of making money. But not so with Luca della Robbia, he interjected!

[87] "Ancora che gli invetriati nelle figure di terracotta non siano in istima grandissima..."

Drawing on his marvelous skill in clay,[88] Luca discovered a manner of glazing that rendered the sculptures impermeable, which he passed to his descendants and which gained favor in Italy and abroad.

The presentation of ideas in this first paragraph is somewhat contradictory, seeming to imply that monetary gain may indeed have motivated Luca. Yet its overall tone is laudatory. This tenor continues in the next paragraph, which described the cathedral organ loft, bronze doors, and glazed reliefs, in that order—following Antonio Billi and the Anonimo Magliabechiano—though it began with the five small Campanile reliefs that previous sources had not included. Vasari gave many lines over to a comparison of Luca and Donatello's organ lofts, repeating the suggestion (introduced by Antonio Billi) that Donatello's was better legible in the choir space, but ultimately praised all of the works. Vasari also began to add an element of chronology not present in the three earlier accounts, suggesting that the commission of the five reliefs led to the organ loft, and that success with the organ loft resulted in the bronze door commission. He did not propose that the bronze doors led to the glazed relief project, but the paragraph had already gained a teleological momentum that would prove irresistible by 1568. Vasari repeated the list of objects introduced by Antonio Billi and the Anonimo Magliabechiano in the paragraphs that remained, adding to them five new sculptures and the additional biographical information about Luca and some of his heirs.

Vasari cultivated quite a different narrative around Luca in the second edition, although the seeds of these changes were already present in 1550. The second edition (Document 15) began with a discussion of Luca's early artistic training before turning directly to the cathedral commissions. He seemingly dispensed with the theoretical

[88] "...avendo una meravigliosa pratica nella terra..."

introductory paragraph, but in reality wove its ideas into the new biographical presentation. The chronology of the story is now explicit, from Campanile panels to organ loft, to bronze doors (it is also incorrect, as the panels followed the organ loft). In all cases, it is Luca's success that results in the next commission, a smooth progression until Luca stops to reflect on the labor and expense required by his sculptures in marble and bronze, for relatively small gain. At that point, Vasari recounted, Luca wished to "see if he might have greater profit from other means."[89] He turned to clay because it was much more easily worked, and required only a means of rendering it durable over time. Therefore, Luca developed the technique of glazing terracotta sculpture, for which Vasari provided a recipe, and the *Resurrection* and *Ascension* reliefs followed.

Vasari's telling of the tale in 1568 thus diverges radically from the accounts provided earlier on by Manetti, Antonio Billi, and the Anonimo Magliabechiano, although the narrative structure they provided formed the framework for his reinterpretation. Manetti had cleverly focused on Luca's commissions at the cathedral—undoubtedly because they encompassed some of Luca's most famous and visible sculptures in the city, but also because that single site displayed his impressive mastery in marble, bronze, and the medium of glazed terracotta that he himself invented. The early accounts do not assert chronology or causality between the works, but instead present them as a single group. Their purpose, opposite from that of Vasari in 1568, was to present Luca as an artist who was remarkable because he worked with great skill in three quite different media that could, moreover, be seen at a single site. What could be more different than the narrative Vasari ultimately grafted onto the earlier account? As in the earlier sources, the triad of commissions served to succinctly define the artistic persona of

[89] "...vedere se maggior frutto potesse altronde cavare."

Luca della Robbia, but now the definition had changed, from "polymath" to an artist who sought ease and economic gain.

Vasari added other material in 1568, mentioning at least twelve new works of art or commissions completed by Luca and the now much-better described later generation of Della Robbia sculptors. It is to Vasari, for example, that we owe the assertion that Piero de' Medici and other members of the Medici family were important early supporters of Luca, an interpretive thread with a basis in existing commissions and doubtless brought to Vasari's attention by Filarete's earlier account. Yet the narrative around Luca was greatly altered, for even though Vasari continued to praise the new medium and the many uses to which it was put—calling it a beautiful and useful invention—he had also irrevocably tied it to issues of economy which ultimately led, as Chapter Two shows, to later claims that Luca's white-glazed figures were meant to be inexpensive imitations of marble sculpture. Vasari's account became a double-edged sword whose influence has persisted into modern scholarship.

Trends in the Fifteenth and Sixteenth-Century Accounts

The early fifteenth-century sources reviewed thus far are unanimous in identifying Luca as one of the most important artists of his period. That claim was made repeatedly for Luca within a Florentine context, beginning with Leon Batista Alberti who named him as one of the five most important artists involved in returning contemporary art to the level of classical antiquity. From that point on, Luca appeared most often in association with three of the artists from Alberti's list—Brunelleschi, Donatello, and Ghiberti—whether in a list format, as in the texts of Filarete, Benedetto Dei, Piero Cennini, and Vespasiano da Bisticci, or in the compilation of artists' lives presented by Antonio

Manetti. That Luca's association with those artists was, moreover, not simply one of a shared general fame or of strictly professional co-workers, is suggested by texts that paint an image of the social environment shared by these men. Antonio Manetti presented Donatello and Luca as the friends and comforters of the distraught Brunelleschi in his life of the architect, while Vespasiano da Bisticci evoked the elevated cultural and intellectual milieu the men shared through their association with the humanist Niccolò Niccoli.

It is noteworthy that most of the early fifteenth-century texts do not explicitly identify or celebrate Luca as the inventor of glazed terracotta sculpture. No mention of that accomplishment is made in the writings of Leon Battista Alberti, Fra Domenico Corella, Benedetto Dei, Alamanno Rinucci, Piero Cennini, and Vespasiano da Bisticci. The three fifteenth-century sources that do identify Luca as the creator of the medium—the remarkable and very early final payment record for the *Resurrection* lunette and the texts of Filarete and Antonio Manetti—*identify* the invention but do not attempt to explain the motivations behind it, nor do they explicitly characterize the visual or expressive qualities which appealed to so many fifteenth-century patrons. Filarete is the only fifteenth-century author who clearly records the admiration the sculptures evoked, describing Luca's tiles for the *studiolo* of Piero de' Medici as "most ornate … such that whoever enters admires them greatly."[90] Manetti implied a reason for which glazed sculptures might impress a viewer when he described their subjects as "figures of glass, or rather glazed terracotta," seeming to single out the sensitivity to light and brilliant coloration shared by both media (see Section Four of this chapter). Yet ultimately the reasons for admiring glazed terracotta sculpture remain implicit, only hinted at, in the fifteenth-century sources.

[90] "ornatissimo ... in modo che a chi v'entra dà grandissima ammirazione"

The approach to Luca della Robbia changed in the sixteenth century, reflecting both a growing sophistication of the art theory and criticism of the period as well as the repetition of an increasingly standardized set of objects and ideas in the biographies written about Luca della Robbia. Slowly, a set narrative began to emerge around the sculptor. Luca's "invention" of glazed terracotta sculpture became the main note sounded by every author; only Albertini did not mention this in the sixteenth century. To support this focus a growing group of glazed terracotta sculptures was signaled by the Libro of Antonio Billi, the Anonimo Magliabechiano, and Giorgio Vasari. What is more, rather than simply stating the fact that Luca had developed the new medium, the sixteenth century sources shifted to a more detailed explanation and reflection on the motivations behind its development, whether as a means of making painting eternal or as a means of expedient execution in comparison with the labor and expense required for marble and bronze.

One open question about the narrative traced here is the degree to which Luca and the Della Robbia may have acted to shape their public image, a concern which grew more generally in the sixteenth century and culminated in Michelangelo's active promotion of a self-narrative through his own comments and a sanctioned biography. Did later members of the Della Robbia workshop capitalize on the language of "invention" to promote their own products as the fifteenth century drew to a close and a third generation of artists took the helm in the early sixteenth century? Once Luca had died in 1482 did it become important to remember the man and his status as inventor in order to continually assert the novelty and distinction of a family brand that was now more than a half-century old? No writings by the Della Robbia themselves survive which reflect on the nature of

their art.[91] The question of how the Della Robbia articulated the significance of their material may only, therefore, be approached obliquely. The following section examines the terminology used for the new material, particularly in contract and payment records, as a means to recover a sense of how both the Della Robbia and a fifteenth-century audience could have contextualized the new medium and its expressive possibilities.

Section Four: Examining Terminology and the Material Resonances of *terracotta invetriata*

Like the narratives developed around the invention of glazed terracotta sculpture, the terminology used to designate that new medium in the fifteenth century offers insight into how it was perceived in Florence. If the narratives of invention emphasized the novelty of Luca's medium, the terminology used to refer to the medium in official documents and contemporary written sources in the fifteenth and sixteenth centuries was rooted in existing materials and techniques. The terms used to describe Luca's new sculpture connected it to the other so-called "arts of fire"—ceramics, glassmaking, and enamel—while sixteenth-century writers in particular began to explicitly compare the properties of glazed terracotta sculpture to media such as painting and sculpture in marble and bronze. The comparisons made by these authors reveal the qualities that they saw and valued in the new medium, while the application of existing terminology associated with the "arts of fire" contextualized the new material within existing artistic practices. Ultimately, the fact that so many other materials share technical or expressive qualities with Luca's glazed terracotta sculpture is indicative of its versatility and of its

[91] A letter of 1471 sent by Andrea della Robbia to a contact in Mantua survives. It regards a sculpted head that had been reserved for the Marquis of Mantua by his agent, Pier del Tovaglia, but does not specify its medium; Pope-Hennessy, *Luca*, 73-74, note 2.

unprecedented combination of reflectivity, color, and sensitive modeling on a large scale.[92]

The term most commonly used to describe Luca's material in the period was *terracotta invetriata*, that is, "glazed terracotta."[93] The works were also referred to, in an abbreviated form, as *invetriati*, "glazed [objects]."[94] This terminology appeared right from the beginning in the first document associated with a glazed terracotta sculpture, the contract record of 1442 for the *Resurrection* lunette at the cathedral, and reappeared somewhat regularly in payment records for glazed sculpture throughout Luca's lifetime.[95] *Terracotta invetriata* also subsequently surfaced in a variety of other types of written sources relating to works by Luca and his heirs, confirming its standard usage. It is found in the household inventory of 1492 of the Medici Palace in Via Larga,[96] in shipping records for seven cases of glazed sculptures sent to Lisbon in 1454,[97] and in the writings by Filarete, Manetti, Antonio Billi, the Anonimo Magliabechiano, and Vasari, examined in Section Three (see Appendix A). Two other later commentators, Pomponius Gaurcio and Leonardo da Vinci, devised distinctive ways of describing Luca's glazed terracotta, revealing a multiplicity of resonances the material could hold for various viewers.

Terracotta invetriata was already an established term before it was applied to Luca's new sculptures. It had been used to describe glazed ceramic wares in inventories

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[92] Carlo Del Bravo, "L'umanesimo," 14, was the first scholar of Della Robbia sculpture to point out the scope of the allusions that Luca's glazed terracotta was able to make, to materials as wide-ranging as gold gilding, enamel, Chinese porcelain, Iranian ceramics, lapis lazuli, and porphyry.
[93] Giancarlo Gentilini, "«Un'arte nuova, utile e bellissima» Pensieri intorno all''invenzione' della scultura invetriata," in *La primavera del Rinascimento. La scultura e le arti a Firenze 1400-1460*, edited by Beatrice Paolozzi Strozzi and Marc Bormand (Florence: Mandragora, 2013), 191-192.
[94] For example, Filarete refers to Luca as "El maestro di questi invetriamenti" (Appendix A, Document 2)
[95] Giovanni Poggi and Margaret Haines, *Il Duomo di Firenze: documenti sulla decorazione della chiesa e del campanile tratti dall'archivio dell'opera*, vol. 1(Florence: Medicea, 1988), Doc. 1533.
[96] Attilio Schiaparelli, *La Casa fiorentina e i suoi arredi nei secoli XIV e XV* (Florence: G. C. Sansoni, 1908), 181-182.
[97] Pope-Hennessy, *Luca*, 74, note 3

and sale records in Florence and its *contado* since at least the fourteenth century, and continued to appear frequently in the fifteenth century.[98] In particular, the term *invetriata* seems to have been used to describe ceramic objects with a tin-opacified glaze, the same type of glaze Luca later adapted for use on his sculptures.[99] Tin was added to glazes in order to give them an attractive white color in Florence and Tuscany by the fourteenth century.[100] Such tin-opacified glazes were originally developed in Iran by the ninth century, possibly in imitation of the appearance of Chinese porcelain, and the technology ultimately spread to Italy from Iran through Spain and North Africa.[101] In fourteenth- and fifteenth-century Italy, tin was imported from England and not inexpensive, and so it was often used only on the exterior surfaces of ceramic wares, which would be seen, while their bottom and interior surfaces were made impermeable with a less expensive clear lead glaze. The use of the term *terracotta invetriata* to describe Luca's new sculptures thus indicates awareness of an essential kinship between his technique and that of the contemporary tin-glazed ceramic wares from which it derived.

Renaissance ceramic wares (*terracotta invetriata*) could serve a variety of functions, but their most important use—measured in the quantity of production—was for

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[98] Galeazzo Cora, *Storia della maiolica di Firenze e del contado* (Florence: Sansoni, 1973), 49-51; Gentilini, *I Della Robbia. La scultura invetriata*, vol.1, 142-143.

[99] Cora, *Storia della maiolica di Firenze*, 51. The term "majolica" today refers to tin-glazed Italian ceramics of the fifteenth and sixteenth centuries. In the fifteenth century, however, "majolica" referred exclusively to lusterware imported from Spain and, eventually, Italian imitations of that lusterware, ibid., 35, and Catherine Hess, *Italian Ceramics: Catalogue of the J. Paul Getty Museum Collection* (Los Angeles: The J. Paul Getty Museum, 2002), 1.

[100] A recipe for tin glaze appears in the fourteenth century in Petrus Bonus, abridged by Janus Lacinius, *The New Pearl of Great Price*, edited by Arthur Edward Waite (London: Vincent Stuart, 1963), 63.

[101] Wendy M. Watson, *Italian Renaissance Maiolica from the William A. Clark Collection* (London: Scala Books, 1986), 12; Richard A. Goldthwaite, "The Economic and Social World of Italian Renaissance Maiolica," *Renaissance Quarterly* 42, 1 (1989): 1-32. The arrival of tin-glazing technology in Sicily and southern Italy has been dated between the eleventh and twelfth centuries; for example, Hess, *Italian Ceramics*, 2, and Wendy M. Watson, *Italian Renaissance Ceramics from the Howard I. and Janet H. Stein Collection and the Philadelphia Museum of Art* (Philadelphia: Philadelphia Museum of Art, 2001), 47.

pharmacy jars and tableware.[102] In both contexts glazed items offered a hygienic benefit, for their glassy surfaces did not interact chemically with their contents. This fact would have afforded rather ordinary fifteenth-century viewers a degree of experience with the qualities of impermeability and durability that Vasari celebrated in relation to glazed terracotta sculpture when placed outdoors. The proliferation of ceramic tableware in Italy during the Renaissance period responded in part to a change in dining habits, for diners began to eat off their own plates rather than a communal one and needed more plates for the increasing number of courses served at a single meal. The use of ceramic tableware became a form of display available to a wider segment of the middle class, and was remaked on by Northern European visitors to Italy.[103] Despite the same terms used to name them, Luca's glazed sculptures would not be seen as identical to ceramic wares used for dining and storage. His technical recipes differed from those of standard glazed wares and resulted in a distinctive appearance for his sculptures which, Del Bravo has pointed out, could evoke a whole range of associations from fine porcelain to gold to semiprecious stones.[104] However, the remarkable growth of the ceramic industry during the Renaissance period does provide a context for understanding the material of Luca's new sculptures.

Alongside the well-established market for ceramic wares in fifteenth-century Florence, a new demand for terracotta sculptures developed and soon flourished. Examining the reasons for the popularity of these sculptures can help to clarify material associations that viewers may have brought to Luca's *terrecotte invetriate*. Terracotta sculpture appeared in the fourteenth century in Italy and across Europe in the fifteenth

[102] Goldthwaite, "The Economic and Social World," 16.
[103] Goldthwaite, "The Economic and Social World," 17-24.
[104] Carlo Del Bravo, "L'umanesimo," 14-15.

century, revealing the development of this art to be a broader European phenomenon.[105] Though these sculptures rose quickly to great popularity, the terracotta material from which they were made was by no means new; it was employed extensively by medieval builders. Terracotta had not been widely used for figural sculpture since antiquity, however, and thus the great popularity these works enjoyed from the fifteenth century on marks a significant moment of transition in the history of art. That this taste emerged across Europe suggests its initial association with the International Gothic style, disseminated through the movement of artists and objects across the continent.[106]

Images of the Virgin and Child were an important focus of terracotta production in Italy. They served a growing demand for affordable devotional images and were produced on a large scale, often using methods of serial production, in major workshops like those of Ghiberti and Donatello.[107] These images were most often colored naturalistically, using the same tempera technique as on contemporary panel paintings. A confluence of different factors led to the popularity of terracotta sculpture; terracotta was already an essential element of thriving ceramic production, and was increasingly used to make small preparatory models for larger works in expensive materials like bronze and marble. However, not long into the fifteenth century, the material also began to be reinterpreted in light of classical values and ideals. The Roman author and natural philosopher Pliny the Elder had, in his *Natural History*, celebrated the use of terracotta in

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[105] Bruce Boucher, "Italian Renaissance Terracotta: Artistic Revival or Technological Innovation?" in *Earth and Fire: Italian Terracotta Sculpture from Donatello to Canova*, edited by Bruce Boucher (New Haven and London: Yale University Press, 2001), 2.
[106] Marco Collareta, "Un percorso coerente. Fortuna e sfortuna della scultura invetriata," in *I Della Robbia e* l'arte nuova *della scultura invetriata*, edited by Giancarlo Gentilini (Florence: Giunti, 1998), 1.
[107] Anthony Radcliffe, "Multiple production in the fifteenth century: Florentine stucco Madonnas and the della Robbia workshop," in *The Thyssen-Bornemisza Collection. Renaissance and Later Sculpture with Works of Art in Bronze*, edited by A. Radcliffe, M. Baker, and M. Maek-Gérard (London: Sotheby's Publications, 1992), 16-23.

sculpture as a dignified and pure material, which shunned the ostentation of more expensive media.[108] Pliny's text was influential and well-known in the fifteenth century, suggesting that artists and their patrons had access to this manner of valuing terracotta and thus adopted it as a means of attaching classical values to contemporary terracotta sculpture.[109] A perception of the humility of the material could also be interpreted as decorous when used to represent religious imagery for private devotional practice. The association of clay and terracotta moreover carried associations with divine creation in the context of both Greco-Roman and Christian mythology.[110] In the Christian story, God had formed Adam from earth which was moistened with water to make malleable mud.

While the terracotta of which Luca's sculptures of religious subjects was formed could indeed invoke associations of humility and creation, "terracotta" was not what viewers initially perceived when they looked at his works. Glazed sculptures presented reflective surfaces and strong, brilliant colors: these qualities lent an air of preciosity to the sculptures which Carlo Del Bravo was the first to emphasize in his interpretation of Luca's glazed output in 1973. Del Bravo identified the glaze as an ornament to Luca's sculptures, and argued that it evoked association with a wide range of precious and semiprecious materials such as gold, Chinese porcelain, and porphyry. Along complementary lines, Marco Collareta has pointed out the capacity of Luca's material to join quite diverse qualities valued in art of the fifteenth century, marrying the

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[108] Gentilini, *I Della Robbia. La scultura invetriata*, vol. 1, 24. For a summary of Pliny's attitudes toward clay sculpture, see McHam, *Pliny*, 51. For an examination of how Ghiberti invoked Pliny's remarks on the subject of clay sculpture in his own writings on art, the *Commentarii*, see ibid., 117. For a discussion of the resonances of terracotta in relation to Luca's art, see Gentilini, *I Della Robbia. La scultura invetriata*, vol. 1, 24-32, and Marietta Cambareri, *Della Robbia: Sculpting with Color in Renaissance Florence*, with contributions by Abigail Hykin and Courtney Leigh Harris (Boston: MFA Publications, 2016), 43.
[109] For the reception of Pliny's *Natural History* in fourteenth- and fifteenth-century Italy, see ibid.
[110] See Amy R. Bloch, "Donatello's 'Chellini Madonna', light, and vision," in *Renaissance Theories of Vision*, edited by John Shannon Hendrix and Charles H. Carman (Farnham: Ashgate, 2010), 69-70.

luminescence and brilliant color of mosaic, enamel, and stained glass to the sensitive modeling and uninterrupted surfaces possible in marble and terracotta, and doing so on a large, that is to say human, scale.[111] Bruce Boucher neatly summed up the novel expressive force that Luca's glazed sculptures carried in the following statement: "In a culture so alive to physical properties and material distinctions, the vibrancy and enameled hardness of Lucca [sic] della Robbia's reliefs must have seemed magical."[112]

Certainly many viewers, and all of Luca's patrons, would have known that terracotta lay under the reflective surfaces. Indeed most fifteenth-century terracotta and wood sculptures were covered with colorful paint and gilding. The natural surfaces of these materials were not valued in fifteenth-century Italy in the same way as those of marble and bronze sculptures. The latter were often left largely unembellished in order to exhibit their distinctive material qualities and to evoke the physical value and classical associations for which they were esteemed. While bronze and marble sculptures could be sensitively modeled, they also presented large expanses of bare material that lent their subjects an abstract quality. Wood and terracotta sculpture engaged different ideals, combining naturalistic polychromy and sensitive modeling to produce a compellingly human appearance. Luca's glazed sculptures also covered their terracotta with a layer of color, but their glaze was brilliant and reflective; it did not—and could not—engage naturalistic ideals to the same extent as polychromy in tempera. That Luca modeled his sculptures from the humble and malleable medium of terracotta is most significant as a testament to the transformative power of his art, which produced brilliant surfaces capable of evoking the same qualities of preciosity and luminescence esteemed in the

[111] Marco Collareta, "Un percorso coerente," 1-5.
[112] Boucher, "Italian Renaissance Terracotta," 14.

more traditionally valued, costly materials of bronze and marble. In addition his material, while manufactured, was also in a sense rare, as its technical secrets were only known to the artist and his workshop.

Given the material splendor of Luca's glazed sculptures, it is significant that the glazes used by Luca and his contemporaries bore a close technical relationship to glassmaking. This relationship appears to have been widely perceived during the period, as Giancarlo Gentilini has recently observed.[113] Both media are based on the same procedure of melting silica, with the addition of fluxes and other supplementary ingredients, to create glass, and both use the same mineral oxides as colorants.[114] In a testament to the fundamentally similar chemical composition of these media, recipes for ceramic glazes were included alongside those for glass and mosaic in late medieval and early Renaissance artists' treatises.[115] Glazed works were also, at times, referred to as "glass," a point made in relation to tin glaze in the alchemical treatise of Petrus Bonus from circa 1330. Arguing that metallic spirits are vitrified under the "violent action of fire," Bonus points out that, "even lead and tin become glass when their metallic humour is burnt out of them," by which he meant their vitrification in glazes.[116] The reference is noteworthy in itself as an early mention of tin glaze in Italian writing. It is also significant because it provides a chemical explanation for associating glass and glaze, arguing that lead and tin undergo a process of fundamental change that causes them to lose their malleability as metals and become glass.

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[113] Gentilini, "Un'arte nuova," 191-192. I thank him for a lively conversation about the fifteenth-century perception of the novelty of Luca's glazed terracotta sculpture in August 2012.
[114] For a concise and helpful description of the process of making glass, and of other technical considerations related to that art, see Itō, *La vetrata nella Toscana*.
[115] Gentilini, "Un'arte nuova," 191-192.
[116] Bonus, *The New Pearl*, 63. Pope-Hennessy, *Luca*, 34 also cites this text.

Two contemporary descriptions of Luca's materials show that the association between tin glaze and glass was indeed in the minds of some viewers of glazed terracotta sculpture. The first occurs in the circa 1464 *Trattato di architettura* by Filarete, which described the Tabernacle of the Crucifix at San Miniato al Monte (figure 11) for which Luca made a glazed ceiling around 1448-1449. In the passage, Filarete did not identify Luca as the artist and described the glazed terracotta decoration of the tabernacle as glass, saying that the chapel had "various ornaments of marble and bronze set with glass intarsia of gold and other colors…"[117] The omission of Luca's name in relation to the tabernacle is curious given the praise he lavished on Luca for the glazed terracotta decorations in the *studiolo* of Piero de' Medici later in the text. While it is possible that Filarete was not familiar with all the commissions he mentioned, it may also be that he sought to use a word—glass—that would be easily comprehended by his readers, while saving his explanation of Luca's new and perhaps, to many, unfamiliar material of glazed terracotta for his discussion of the *studiolo*.

Antonio Manetti is the second fifteenth-century author to refer to Luca's glazed figures as "glass," in a passage from his *De' Viri illustri di Firenze* of the 1490s (Appendix A, Document 8).[118] Following his description of the organ loft and bronze doors for the cathedral, Manetti recorded that Luca made sculptures in the arches over the sacristies with "figures of glass, or rather glazed terracotta."[119] Manetti deliberately

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[117] Filarete, *Treatise on Architecture,* 322. The gold must refer to original gilding. Filarete, ibid., also used the word "glass" to describe the mosaic decorations of a second tabernacle that Piero de' Medici commissioned in the same years, to house the venerated miraculous image of the Virgin at the church of Santissima Annuziata in Florence.

[118] For the relation between glazed terracotta and glass as proposed by Manetti, see Cambareri, *Sculpting with Color,* 27, 44. Cambareri and I have independently arrived at similar conclusions regarding the centrality of Manetti's text in associating Luca's new art with the reflectivity, color, and hardness of glass, as well as with arts of fire in general.

[119] "figure di vetro, ovvero di terra invetriata"

equated glazed terracotta and glass, which suggests he felt the two materials shared essential qualities; he may have had in mind the sensitivity to light and brilliant colors that lent both media an air of splendor and preciousness. Yet they also present fundamental differences in technique that help to explain why Luca's glazed terracotta sculpture would have appeared remarkably novel to his audiences. Images made in glass in the fifteenth century were nearly always flat, reliant on an iron gridwork and lead joins which, by necessity, fragmented the images they presented.[120] The surfaces of Luca's glazed sculptures were, by comparison, continuous and modeled in three-dimensions and thus able, as Marco Collareta has pointed out, to engage a more naturalistic ideal than either glass or mosaic, in which visible *tesserae* presented discontinuous surfaces.[121]

While Manetti drew an analogy between glass and glazed terracotta, Pomponius Gauricus opened a new interpretive thread through an elision of different terms; in his *De sculptura* (1504), he called Luca's glazed sculpture "terracotta painted with encaustic."[122] As Marco Collareta has shown, Gauricus and other humanist authors had—from the late-fifteenth century on—come to interpret the practice of *encaustic* painting as a technique which relied on fire and fusion without restricting it to hot wax, per its classical usage.[123]

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[120] One exception is the more sculptural use of pieces of glass of varying thicknesses in Donatello's *Coronation of the Virgin* stained glass oculus for the Florentine cathedral.

[121] Marco Collareta, "Un percorso coerente," 4. He makes this point in relation to mosaic, but it is also pertinent for glass.

[122] "fictile opus encausto pingi". For a careful analysis of the way that glazed terracotta sculpture could evoke the qualities of color and shine associated with ancient encaustic art, see Cambareri, *Sculpting with Color*, 27, 75-76. Cambareri and I have independently arrived at similar conclusions about Gauricus's use of the term "encaustic" to describe Luca's glazed art: as a reflection of the novelty of the medium, its close association with the arts of fire, and the difficulty of finding suitable language to describe it. However, it is Cambareri's insight to point out that the shine and color associated with encaustic painting in ancient accounts would have prepared Luca's contemporaries to locate and appreciate his new medium within a well-established context of classicizing values. Her interpretation has enriched my own thinking, which had previously focused on the association of color and shine with the medieval tradition of mosaic decoration.

[123] Marco Collareta, "'Encaustum vulgo smaltum.' Note sulla percezione umanistica delle tecniche figurative," *Annali della Scuola Normale Superiore di Pisa, Classe di Lettere e Filosofia* 14, 2 (1984): 757-769.

Because their understanding focused on the use of fire rather than the specific material involved, the authors associated the technique of encaustic with the arts of enamel and glazed terracotta practiced in their own day, which were also fired to produce colorful images. This new understanding seems to have coalesced around descriptions of encaustic decoration at the ancient baths of Agrippa, rooted in the account given in Book 36 of Pliny's *Natural History*, and Gauricus drew his phraseology directly from Pliny when describing Luca's art.[124] His application of the word "encausto" to the Della Robbia's glazed art therefore lent the modern invention a classical veneer and associated it with the glories of ancient art.

Leonardo da Vinci also expressed interest in the Della Robbia technique as a form of painting, though he did not employ the same classical terminology as Gauricus.[125] In writings later compiled in the *Trattato della pittura* (Appendix A, Document 10), Leonardo engaged the ongoing *paragone* debate over the relative merits of painting and sculpture. He argued painters could achieve the eternity usually associated with sculpture by "painting with colored glazes on metal or terracotta" which are then fired.[126] To support this claim he offered the example of the Della Robbia artists of Florence, who had found "ways of guiding every great work in painting onto terracotta covered with glaze."[127] Although such paintings of glass on durable supports were subject to the same vibrations (*percussioni*) and breaks (*rotture*) as marble and bronze sculpture, they

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[124] Collareta, "Encaustum," 763. Gauricus described Luca's art with the phrase "fictile opus encausto pingi," while Pliny described the baths of Agrippa with the phrase "figulinum opus encausto pinxit." Collareta suggests that it was a desire to emulate the luxurious decoration of that ancient monument which led to the great popularity of glazed terracotta pavement—met energetically by Della Robbia production—from the late fifteenth-century on in Italy.
[125] For Leonardo's response to glazed terracotta, see Cambareri, *Sculpting with Color*, 27, 76.
[126] Farago, *Leonardo da Vinci's* Paragone, 262-263: "dipingendo con colori di uetro sopra i metallic e terra cocta".
[127] Farago, *Leonardo da Vinci's* Paragone, 262-263: "modo di condure ogni grand opera in pittura sopra terra cotta coperta di vetro."

exceeded the art of sculpture in their beauty. Leonardo's interest in the Della Robbia production thus seems limited to the glazed art that took the form of painting, rather than those sculpted in three dimensions. Leonardo may in fact have had considerable familiarity with the Della Robbia technique, as his close colleague and follower Giovanni Francesco Rustici is known to have sculpted works in terracotta for glazing by the Della Robbia workshop.[128]

By the time Leonardo and Gauricus recorded their accounts, the Della Robbia had been creating paintings with glaze on flat terracotta surfaces for some time. The earliest of these works were carried out by Luca in the early-to-mid 1450s, in the form of a flat glazed garland for the tomb of Bishop Federighi (1454-1456) and his flat glazed ceiling and floor tiles for the *studiolo* of Piero de' Medici (early 1450s). Both ensembles presented images painted in glazes without any modeling in relief, and in 1568 Vasari marveled at the skillfulness Luca displayed in painting the garlands for the Federighi tomb (figure 12), saying "on the flat surface he painted some garlands with clusters of fruit and leaves so lifelike and natural that one could not do better with a brush in oil on a panel."[129] It was this power to emulate painting in a permanent material that had appealed to Leonardo, and in fact Vasari seems to have drawn on Leonardo's arguments when writing the paragraph in the second edition of the *Vita* from which this phrase is drawn. Vasari had opened the paragraph which discussed the *studiolo* and tomb with a general claim that "Luca sought to find a way to paint figures and stories on flat terracotta

[128] See Cambareri in *Leonardo, Michelangelo*, and Gary M. Radke, *Leonardo da Vinci and the Art of Sculpture* (New Haven: Yale University Press, 2009).
[129] "dipinse nel piano certi festoni a mazzi di frutti e foglie sì vive e naturali che col pennello in tavola non si farebbe altrimenti a olio"

surfaces in order to give life to painting,"[130] aligning Luca's motivations with the same interests expressed by Leonardo.

The other writers examined in Section Three—Antonio Billi, the Anonimo Magliabechiano, and Vasari—also used the term *terracotta invetriata* to describe Luca's glazed sculpture. It is noteworthy that the Anonimo Magliabechiano calls *terracotta invetriata* both a "material" and a "technique" at two separate moments in his short text, using the term to refer to both the medium itself and the process of its production.[131] The usage relies on the fact—unusual in this period—that the technical knowledge needed to manufacture the very material of glazed terracotta sculpture was the exclusive property of Luca and his Della Robbia heirs (although from the late-fifteenth to mid-sixteenth century, the Buglioni family of artists also produced glazed sculptures whose technical properties diverge somewhat from those by the Della Robbia). No other medium of the period was restricted in the same way to the use of a single family of artists. Recognition of this close association of family, technique, and material soon allowed the Della Robbia name to become synonymous with their glazed works, such that in 1493 Andrea Minerbetti could make a record of "our immured Della Robbia Madonna" in his memoirs.[132] Further instances in which the name "Della Robbia" is used as a synonym for glazed sculpture appear in the sixteenth and seventeenth century documents, and are the origin of the modern scholarly practice of referring to glazed sculptures as "robbiane."[133]

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[130] "cercò Luca di trovare il modo di dipignere le figure e le storie in sul piano di terra cotta, per dar vita alle pitture"
[131] "…di terra cotta et invetriata, artifitio da luj trovato ... Fece anchora della medesmia materia..."
[132] "i nostra donna della robia murata," recorded in his 1493 Memoirs; Attilio Schiaparelli, *La Casa fiorentina e i suoi arredi nei secoli XIV e XV* (Florence: G. C. Sansoni, 1908), 184.
[133] A 1534 Capponi inventory listed two "vassi della Robbia con frute" in the *sala* of their home; see Peter Thornton, *The Renaissance Interior 1400-1600* (New York: Abrams, 1991), 110. In 1551 a "I[a] Dovizia di

Section Five: Invention through the Lens of Modern Technical Analysis

The technical analysis of Della Robbia glazed sculptures that has accompanied modern conservation efforts in the last twenty-five years has provided a much fuller understanding of the nature of Luca's medium and its invention. Taken together, these studies have demonstrated the mastery Luca della Robbia and his heirs achieved in the range of processes required to transform river clay into modeled figures with glassy colored surfaces. Such studies have therefore played a significant role in building a new appreciation for the accomplishment of glazed terracotta artists, contributing to the refutation of the old Vasarian narrative that emphasized facility and economy. The techniques of Luca's art were carefully refined and passed down through the Della Robbia workshop, and some of them, like the recipes for the clay and glaze, constitute exclusive hallmarks which ensured a successful product and can help to authenticate Della Robbia sculptures. This section considers the general outlines of the Della Robbia technique but, as with Luca's biography, it does not substitute for the more detailed analyses indicated in footnotes. It moreover includes the findings of technical studies conducted on the works of all of the Della Robbia, not only sculptures made by Luca. The fact that many of Luca's largest documented works remain *in situ* in Florence, often in high locations, has not favored methods of technical analysis which would require dissembling the works or taking samples of their glazes and clay. This means that many

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terra della Robbia con sua basa messa a oro" was located in the main ground-floor chamber of the palace of Piero Benintendi, see the catalogue entry by Jacqueline Musacchio, "Dovizia," in *Art and Love in Renaissance Italy*, edited by Andrea Bayer (New Haven and London: Yale University Press, 2008), cat. no. 48, 119. The 1622 inventory of Francesco di Pagolo Fori included "dua Dovitie di terracotta di mano di quello Della Robbia"; Jacqueline Musacchio, *Art, Marriage, & Family in the Florentine Renaissance Palace* (New Haven: Yale University Press, 2008), 235, note 307.

important studies rely primarily on analysis on works made under Luca's nephew, Andrea, and his successors.

Basic Process of Making Della Robbia Sculptures

The full process used by the Della Robbia to make their glazed sculptures has received clear and detailed analysis by Maria Grazia Vaccari in two essays for the Della Robbia exhibitions held under the direction of Giancarlo Gentilii in 1998 and 2009, in Fiesole and Arezzo respectively.[134] The process will be summarized in brief terms here; for a more detailed account the reader should consult Vaccari's texts and sources. The first step in making any terracotta was to excavate clay from a riverbank, quarry, pit, or cave, and to prepare it for use through a process of depuration, or the removing of impurities, accomplished by repeatedly decanting, grinding, and pounding the clay. Often more than one type of clay was prepared at this stage and they were mixed together in order to balance the qualities of plasticity and body in the final product.[135] The Della Robbia owned property along the Arno riverbank and this is thought to be a likely source for their clay.[136]

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[134] Maria Grazia Vaccari, "Tecniche e metodi di lavorazione," in *I Della Robbia e l'"arte nuova" della scultura invetriata*, edited by Giancarlo Gentilini (Florence: Giunti, 1998), 97-116; and Maria Grazi Vaccari, "Le robbiane: appunti sulla tecnica e sugli aspetti commerciali," in *I Della Robbia. Il dialogo tra le arti nel Rinascimento*, edited by Giancarlo Gentilini with the collaboration of Liletta Fornasari (Milan: Skira, 2009), 77-85.

[135] Gaetano Milanesi found an annotation of 1530 on a drawing at the Uffizi that gives the following recipe for Della Robbia clay: "per lavorare di terra come quella dei Della Robbia bisogna torre belletta di fiume, e dipoi mesticarci dentro del liso, altrimenti crepa. Liso domandano quella rena morbida che si trova sotto la belletta." Cited in Vaccari, "Tecniche e metodi," 98-99, who hypothesizes the Della Robbia clays consist of a mixture of riverbed clay, excavated clay, and sand. For the Della Robbia land holdings in relation to clay sources, see Anne Bouquillon, "Terra, vivi per me cara e gradita," in *Della Robbia: dieci anni di studi – dix ans d'études*, edited by Anne Bouquillon, Marc Bormand, and Alessandro Zucchiatti (Genoa: Sagep Editori, 2011), 28.

[136] Documents from 1527 related to Santi Buglioni's work on the glazed frieze for the Ospedale del Ceppo record the transport of "terra rechata da Arno," Marquand, *Benedetto and Santi*, 165, 179-180; cited in Vaccari, "Tecniche e metodi," 99.

Next, the clay could be worked up into a sculpture, through a process of modeling, molding, or in many cases a combination of both. The procedure for modeling a sculpture depended on whether it took a relief or freestanding format. A bust or freestanding statue could be built up in coils around a hollow center, or it could be built over an armature of metal, wood, or rags (called the *anima*, or soul[137]) which was removed before firing the work. Reliefs were worked up on a flat surface, often starting from a flat terracotta slab on which the figures were gradually built.[138] A molded sculpture was, by contrast, pressed into a mold from which it could be removed easily due to the slight shrinkage it underwent while drying. In any case, whether the sculpture were modeled or modeled, it was essential that the artist ensure a uniform thickness for the clay walls throughout the work. If they were not uniform, different areas of the work would dry at an uneven rate, and this differential would cause tension and cracking that greatly increased the chance of breakage during firing.

While the sculpture was being worked its clay needed to be kept damp in order to ensure plasticity and therefore workability. This was accomplished by covering it with wet rags. When the artist had worked the object up to his satisfaction, he then left it to dry to what is called the "leather hard" state, in which the object was no longer plastic but could still be altered using sharp metal tools for enhancing fine details in faces, hair, or clothing depending on the subject.[139] At this stage large objects would be sectioned, and

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[137] Abigail Hykin, "Materials and Techniques," in *Della Robbia: Sculpting with Color in Renaissance Florence*, by Marietta Cambareri with contributions by Abigail Hykin and Courtney Leigh Harris (Boston: MFA Publications, 2016), 133.

[138] See Stephen G. Rees-Jones, "A Fifteenth Century Florentine Terracotta Relief. Technology – Conservation – Interpretation," *Studies in Conservation* 23, 3 (1978): 95-113.

[139] Documented for a group of sculptures attributed to Andrea della Robbia that were made from related molds in Roberta J.M. Olson and Daphne Barbour, "Toward a New Method for Studying Glazed Terracottas: Examining a Group of Tondi by Andrea della Robbia," *Apollo* 154, 475 (2001): 44-52; and Daphne Barbour and Roberta J.M. Olson, "New Methods for Studying Serialization in the Workshop of

the edges of the resultant pieces beveled to facilitate subsequent reassembly of the sculpture. Sectioning was necessary for larger sculptures because it decreased the likelihood that they would crack during firing and may have made it easier to fit pieces into the kiln. The ensemble was then further air dried, in the sun if possible, before being loaded into the kiln with other sculptures and fired at a temperature of approximately 950 degrees Celcius.[140] If all went well, the sculpture emerged as hardened terracotta. If it cracked, it might be repaired by applying glaze to the break as an adhesive and re-firing it at a slightly lower temperature, a method of salvaging work which must have been common as it can be observed on many surviving Della Robbia sculptures.[141]

The next step was to apply the glazes, which were prepared separately ahead of time and consisted of two main components, the *marzacotto* and the *calcine*. The *marzacotto* provided the glassy element of the glaze, consisting of silica from sand and an alkali flux from natron or wine lees. The *calcina* gave the glaze opacity and flow, and was made by combining tin and lead. Then metal oxides were added to pigment the mixture: tin for white, cobalt for blue, manganese for purple, antimony and iron for yellow, copper for green. The glaze mixture was combined with water and painted onto the terracotta surface, which absorbed the water and left a powdery glaze behind which, when fired, became a glassy superstrate.

After that point, the sculpture might receive partial gilding on its surfaces. In some later Della Robbia works, portions of the sculptures' surfaces were left unglazed in order to apply tempera or oil polychromy at this stage. The ensemble would be

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Andrea della Robbia: Technical Study and Analysis," in *Della Robbia: dieci anni di studi – dix ans d'études*, edited by Anne Bouquillon, Marc Bormand, and Alessandro Zucchiatti (Genoa: Sagep Editori, 2011), 56-61.

[140] Vaccari, "Tecniche e metodi," 108; Barbour and Olson, "New Methods," 58.

[141] Hykin, "Materials and Techniques," 142.

transported to its final location, packed in crates if that destination were distant, and put together in place. During assembly, sculptures that were constructed in pieces might be interlocked without an adhesive, or they might receive wooden pins or various adhesive mixtures to ensure their integrity.[142]

Insight to "Invention" Offered by Technical Examination

Although Luca's techniques were based in and thus remain very close to those used in contemporary terracotta sculpture and maiolica, significant changes distinguish his works from those products. These modifications demonstrate the extent of his accomplishment in developing the new medium. One of the first differences to be explored was between the Luca's glazes and the maiolica recipes on which they depend. The chief distinction between them, first revealed by W.D. Kingery and Marilyn Aronson in 1990 and confirmed by numerous later studies, is that Luca's white glazes contain a much higher content of tin oxide, the glaze opacifier responsible for their famous milky color.[143] Tin oxide typically constitutes average of 6% of maiolica glazes but accounts for a much higher percentage, 15-20%, of the overall glaze composition in Luca's white glazes.[144] The level of tin oxide in Luca's colored glazes is lower than that of his white glaze, but still accounts for the opacity and evenness of his colored glazes relative to those of maiolica wares.[145] The glaze recipe therefore ensures the qualities that allow

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[142] Hykin, "Materials and Techniques," 133.
[143] William David Kingery and Meredith Aronson, "The Glazes of Luca della Robbia," *Faenza* 76 (1990): 221-225; William David Kingery and Meredith Aronson, "On the Technology of Renaissance Maiolica Glazes," *Faenza* 76 (1990): 226-235.
[144] Kingery and Aronson, "Glazes of Luca," 223; Kingery and Aronson, "On the Technology," 233; and Alessandro Zucchiatti and Anne Bouquillon, "Les Glaçures: atout maître des Della Robbia," in *Della Robbia: dieci anni di studi – dix ans d'études*, edited by Anne Bouquillon, Marc Bormand, and Alessandro Zucchiatti (Genoa: Sagep Editori, 2011), 34.
[145] As noted by Boucher, "Italian Renaissance Terracotta," 14. See Chapter Three of this dissertation for a detailed examination of Luca's colored glazes.

Luca's sculptures to rival glass and enamels in the power and uniformity of their brilliant colors.

A second important difference between Luca's glazed terracotta sculptures and contemporary production lies in the composition of their clay. Luca and his heirs used marly clay, which is rich in calcium and distinct from the iron-rich clay used in other terracotta sculptures of the period. The advantages of marly clay for making glazed terracotta sculptures were twofold. Most importantly, the clay produced a good "fit" with Luca's glazes, ensuring that they would bond well together and thus maintain the integrity of the colors and smooth surfaces of the sculpture. Marly clay, moreover, produces a light pinkish beige color on firing rather than the deep reddish-brown terracotta found in most sculptures of the fifteenth century. The lighter color did not carry strongly through the glaze layer, thus allowing for the brightness and clarity of its colors. It is thus significant for both the durability and expressive power of the glazed terracotta sculptures that Luca altered both the clay body and glaze recipes he used relative to those favored in contemporary usage. This suggests that Luca was aware of the importance of a good union between these elements and that he possessed the requisite technical knowledge to ensure it.

The value of the recipes that Luca developed for both the clay and glaze bodies has been confirmed by recent analyses of the fragments of Della Robbia sculptures made in France by Girolamo della Robbia and Luca della Robbia the Younger. Girolamo worked in France for the court of François I^{er}, largely from the 1520s onward, where he contributed extensive glazed terracotta decoration to the exterior of the king's new palace, the Château de Madrid in the Bois de Boulogne, which was under construction

from 1527 to 1551.[146] Forced to look locally for his materials, Girolamo used clay much richer an iron, and therefore red in color, to which his glazes did not bind well.[147] As a result, the works had already begun to deteriorate in the sixteenth century, and in 1563, the celebrated French ceramicist Bernard Palissy remarked that Girolamo's work at the palace "are beginning to fall into ruin."[148] This incident shows the merits that locally available materials held for Luca's initial invention.

The glaze and clay recipes constitute the largest technical differences between Luca's art and that of his contemporaries. However, technical analysis has also confirmed the mastery with which Luca and the later Della Robbia approached the construction of their terracotta sculptures. The statues and reliefs associated with Luca are carefully excavated in order to produce a uniform thickness in the terracotta walls which was so important for guaranteeing that they would dry and fire uniformly. This characteristic seems to confirm the marvelous skill in clay that Vasari attributed to Luca,[149] and it certainly distinguished him from one contemporary, Donatello, whose *putti* for the Calvalcanti altar have been shown to be rather carelessly constructed.[150] Technical analysis also permits, in many but not all cases, a distinction between modeled and molded works, which can at times be distinguished based on visible joints between sections of added clay and marks present on the backside of the sculpture which can

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[146] For the definitive monograph on the Château de Madrid, see Monique Chatenet, *Le Château de Madrid au Bois de Boulogne: Sa place dans les rapports franco-italiens autour de 1530* (Paris: Picard, 1987).
[147] For technical analysis of the remnants of Girolamo's glazed terracotta decoration for the Château de Madrid, see Monique Chatenet, Florian Meunier, and Alain Prévet, eds., "Le château de faience de Francois I[er] les terres cuites émaillées de Girolamo della Robbia au Château de Madrid," Special Issue, *Bulletin archéologique du Comité des travaux historiques et scientifiques* 36 (Paris: Éditions Du CTHS, 2012); and Anne Bouquillon and Florian Meunier, "Les céramiques du château de Madrid au Bois de Boulogne: leur histoire," *Techne* 20, Special Issue, "Terres cuites de la Renaissance" (2004): 25-29.
[148] "commencent à tomber en ruine." This assessment is part of a longer passage quoted in Bouquillon and Meunier, "Les céramiques du château," 29.
[149] Vaccari, "Tecniche e metodi," 104.
[150] Ibid., 104

indicate whether clay has been pressed in or dragged out of the work. Many recent analyses of works by Luca's heirs have shown that a combination of both techniques was often used.[151]

As the preceding discussion indicates, examination of the backside of terracotta sculptures is informative as regards their production method. Beyond the thickness of the terracotta walls and the manner of their excavation, other characteristics reveal the care of Della Robbia artists. As already mentioned, many surviving sculptures present areas of cracking and breakage on their back sides which were repaired with glaze, and then fired a second time to secure the join. This practice demonstrates the desire and ability of the Della Robbia to repair rather than replace reliefs which had been compromised during the firing process. Similar care is seen in the treatment of the reverse side of larger sculptures that were divided into smaller segments, a practice which facilitated even drying, placement within the kiln, and the possible transport of the final work. There, the sides of the relief were beveled inwards from the surface of the sculpture,[152] in order to ensure a close fit between the pieces in their final location and also to provide a surface to which joining materials could adhere in the case of sculptures which were inserted into an architectural setting.

Some of the practices which have been described above have primarily been observed in relation to the work of later Della Robbia artists, such as the beveling of

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[151] Olson and Barbour, "Toward a New Method," and Barbour and Olson, "New Methods for Studying," identify the use of modeling to finish fine details on relief sculptures cast in molds by Andrea della Robbia and his workshop. See Vaccari, "Tecniche e metodi," 103, for fruit baskets made by the workshop under Andrea and Giovanni in which the baskets were molded and the fruit was modeled. Perhaps the practice observed in the baskets relates to the new discovery in the *Resurrection of Christ* relief at the Brooklyn Museum, that red-bodied clay was used underneath the Della Robbia's typical light-colored marly clay in the garland frame, Hykin, "Materials and Techniques," 140. The red-bodied clay is used to make the clay wall and thus forms a support for the fruits, foliage, and animals of one of the most impressive garlands of the Della Robbia *oeuvre*.

[152] Hykin, "Materials and Techniques," 133.

edges, while others, like the glaze repairs and careful excavation of the backside, have been observed in smaller works by Luca. Two of the only large scale terracotta installations by Luca della Robbia to have been removed from their original locations—and therefore to present an accessible backside—are the *Twelve Month* roundels at the Victoria and Alberti Museum, and the *Stemma of René of Anjou*. The *Stemma* is traditionally attributed to Luca but was produced in the 1470s, when the extent of his activity in the workshop is uncertain. However, the *Twelve Months* roundels, which were originally displayed on the ceiling of the *studiolo* of Piero de' Medici of the early 1450s, have recently undergone conservation that confirms the care of excavation and the practice of repairing cracks with a glaze adhesive seen in some other sculptures.[153] Many of Luca's other most important large scale works remain *in situ* in Florence and its environs. While this is a great advantage for studying them within their intended context, it has not encouraged their technical study. It is one hope of this author that the increasing interest and enthusiasm that has developed for Della Robbia sculpture in the last thirty years will spur such efforts in the future.

Section Six: Conclusion

It is fitting that Chapter One concludes with an examination of the technical aspects of glazed terracotta sculpture. As even the brief review put forward above has shown, the skills and technical knowledge needed to produce his glazed terracotta well

[153] The *August* roundel, for example, was repaired in this way. For an account of the recent conservation, prior to reinstallation, of these objects at the Victoria and Albert Museum in London, see Sofia Marques, "Twelve Panels by Luca della Robbia: Conservation Issues," in *Glass and Ceramics Conservation 2007: Interim Meeting of the ICOM-CC Working Group* (Nova Gorica: Goriški muzej Kromberk, 2007), 130-140. The article focuses on the modern efforts to stabilize the works rather than the methods of their original production. I thank Peta Motture, Charlotte Hubbard, and the staff of Objects Conservation at the Victoria and Albert Museum for discussing the findings of their conservation work with me in 2013.

justify the later celebrations of Luca as an "inventor" of his art. That Luca developed this mastery of glazes and terracotta, in addition to the skills he possessed in the media of marble and bronze, is a fact that renders him truly worthy of admiration and of the title "gram maestro" which Benedetto Dei assigned him in 1470. It is no wonder that the triad of the marble organ loft, the bronze doors, and the glazed terracotta lunettes for the cathedral sacristy piers became the foundation upon which Luca's later biographies were built. His achievement in a diversity of media is noteworthy and deserves to be recognized as equal to the mastery of media more widely celebrated in the *oeuvre* of his contemporary, Donatello. Although this dissertation focuses on the novel configuration of expressive qualities that Luca explored and exploited in his new medium, it should be borne in mind that the artist's reputation in his own day rested on his facility in a variety of media.

That Luca did possess such mastery indeed prepared him to appreciate the power of his own accomplishment in glazed terracotta. The smooth, polished surfaces that captured and reflected light which were available to him in marble and bronze could now be transposed to terracotta, together with a brilliance of color which was had not been available to him in any of those media. The malleability of the terracotta which he used to form his figures allowed him to work with a great sensitivity, which he may have learned through training in bronze, where he would have worked with wax to make figures before casting them in that metal. That Luca was alive to the new combination of expressive possibilities wrapped up in his medium is, therefore, the condition upon which Chapters Two, Three, and Four of this dissertation will build. Those chapters examine how Luca, as well as his contemporaries, could have approached and contextualized the concepts of

light, color, and space which were as relevant in his new material of glazed terracotta as they were to contemporary painters.

Chapter Two: Whiteness and Light

Section One: Introduction

Perhaps the most quintessential feature of Luca della Robbia's glazed terracotta art is to be found in his white glazed figures. These brilliant personages appear unendingly from his earliest works in the medium up until the dissolution of the Della Robbia workshop, run by Luca's heirs, in the mid-sixteenth century. Although the white figures were at one time seen as a mark of the derivative nature of the medium, considered an inexpensive substitute for marble, that viewpoint has been conclusively refuted in scholarship of the last fifty years. Section Two of this chapter reviews the history of the interpretations put forth for the white glazed figures of Luca's *oeuvre*, and aligns itself with recent research which has associated the figures' whiteness and reflectivity with the concepts of spiritual light and transcendence. The identification of these new associations for the white glazed figures is itself the fruit of recent research on monochromy in Italian Renaissance art. This research, examined in Section Three with a focus on fourteenth- and fifteenth-century Italian art, underscores the polysemous nature of white monochromy as an artistic strategy, its interpretation depending on the context in which it is employed.

Thus Luca's white glaze is today widely associated with light, whether the ambient light of its original surroundings or the theological conception of light as the glory of God. This chapter accepts those associations and examines how fifteenth-century viewers might have understood or accessed these ideas based on their own phenomenological experience of Luca's sculpture. As a means to approach this question,

Section Four examines how ambient light was understood to affect the appearance of sculpture and other three dimensional bodies through a critical reading of treatises by the fourteenth- and fifteenth-century artists Cennino Cennini, Leon Battista Alberti, and Lorenzo Ghiberti. Florentine painters in this period labored to copy such effects of light in order to give their subjects the illusion of projection in three dimensions, or *rilievo* as it was called during the period. The first part of this section considers the pictorial goals of fifteenth-century painters, as expressed in the *Libro dell'arte* (c. 1400) of Cennino Cennini and *Della pittura* (1435/6) by Leon Battista Alberti. These authors instruct artists in the task of fixing and depicting the fall of ambient light on solid bodies in order to forcefully convey their mass and volume. Then the section proceeds to analyze a portion of the Third Commentary (c. 1447-1455) by Lorenzo Ghiberti, which treats the effects of luster on reflective objects and characterizes the relationship of light to real three-dimensional bodies, such as sculptures, as inherently changeable. These points reveal the painters' solution for fixing light on their subjects to be a necessary but artificial compromise.

Section Five applies the findings of the previous section to one example of Luca della Robbia's white glazed terracotta figures, the *Virgin and Child* (figure 16) from circa 1450 at the Museo degli Innocenti, Florence. The sculpture offers a fitting case study for it presents Christ holding a small banner that bears the words "Ego sum lux mundi" (I am the light of the world). The work itself thus identifies light—this chapter argues in both its physical and theological senses—as of chief concern to the viewer. Reviewing the existing interpretations of Luca's white glaze in more detail, Section V argues that the gradation of light and shadow on Luca's white glazed figures reveals their three-

dimensional form at the same time that brilliant marks of luster create an emphasis on the work's surfaces. The resultant tension between physicality and immateriality that the light effects produce has devotional implications, capable of evoking the dual nature of Christ and the saints, and prompting meditation that moves beyond the physical toward intangible holy mysteries.

Section Six takes on the challenging but essential task of recreating the effects of natural light and candlelight on the surfaces of Luca della Robbia's glazed terracotta sculptures. It reports the results of an innovative lighting experiment conducted on a nineteenth-century glazed terracotta replica of an original Della Robbia composition, located at the church of Saint Mark's in-the-Bowery in New York City, and bearing glazes of high quality. Examination of the sculpture under candlelight during daytime and night conditions reveals a great degree of changeability in its appearance, aligning with the observations of Lorenzo Ghiberti in his Third Commentary.

Finally, Section Seven reviews the use of candlelight in relation to sculpture in ecclesiastic and domestic settings in the fifteenth century. Its goal is to determine on which occasions the appearance of Luca della Robbia's glazed terracotta sculptures might approximate the results of the experiment described in relation to the sculpture at Saint Mark's in-the-Bowery. Lighting candles in front of religious images was an important act of devotion during this period, and this section suggests that the responsiveness of glazed terracotta to flame light created a connection to the supplicant and his/her needs.

Section Two: Existing Interpretations of the White Glaze

White figures, often set against a blue ground, are a mainstay in Luca della Robbia's glazed art. They appear in his first dated work executed fully in glazed terracotta, the 1442-1444 *Resurrection* lunette (Figure 4) for the Cathedral of Florence, Santa Maria del Fiore. This work presented Christ among angels, soldiers, a tomb, and trees, all of them uniformly white against a deep blue ground.[154] After that, the aesthetic of white figures on a blue ground was repeated so often that by the nineteenth-century it was firmly associated with the master and his heirs in the Della Robbia workshop, as well as with the city of Florence where the art was invented. The nineteenth-century art critic Walter Pater famously summed up these resonances in the following description of Luca's art: "I suppose nothing brings the real air of a Tuscan town so vividly to mind as those pieces of pale blue and white earthenware, by which [Luca della Robbia] is best known, like fragments of the milky sky itself, fallen into the cool streets, and breaking into darkened churches."[155] In Luca's *oeuvre*, those fragments of milky sky most often took the shape of the Virgin, Christ, and the saints.

The ubiquity of white-glazed figures in Luca's works once gave rise to the opinion, expressed in early scholarship by Charles Callahan Perkins (1864), Maude Cruttwell (1902), and Allan Marquand (1914), that Luca sought to mimic the appearance of marble.[156] This viewpoint ultimately derived from Giorgio Vasari's comparison of

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[154] Chapter Four of this dissertation examines the *Resurrection* lunette in detail.

[155] Walter Pater, *The Renaissance* (New York: The Modern Library, 1873), 52-53. For an analysis of Pater's essay on Luca della Robbia, see Lene Østermark-Johansen, "Relieving the limitations of sculpture and text: Walter Pater's della Robbia essay," *Word & image* xx, 1 (2006): 27-38.

[156] Allan Marquand, *Luca della Robbia* (Princeton, NJ: Princeton University Press, 1914), xxxi, clearly implies artistic agency on Luca's part, saying "Glazed terra-cotta was used by Luca della Robbia as a substitute for marble. Hence his figures were chiefly white; but inasmuch as marble sculpture in his day was superficially painted, it is natural that Luca should have attempted coloured glazes at an early date." Maude Cruttwell, *Luca & Andrea della Robbia and their successors* (London: J.M. Dent & Co.; New

glazed terracotta to marble in terms of its durability and ease of handling, which some later authors elided to include color. Vasari in fact had compared the medium to both "marble and bronze" together and only mentioned the glaze's white color in passing in a later passage; he never directly likened its color to marble, though it is possible this connection was implied.[157] The practice of relating glazed terracotta to other media had begun earlier in the sixteenth century with Leonardo da Vinci, who called the medium a form of 'eternal' painting, but Vasari gave an economic dimension to the discourse (by comparing expense and difficulty) that shaped criticism into the twentieth century.[158] It was thus bound to the concept of economy that the relationship between glazed terracotta and marble entered scholarly writing. While interpretations of the glaze's whiteness as emulative of marble have thus became standard in literature on Luca's sculpture, they have also bound its value to another medium, leaving other resonances particular to his white glaze less fully developed.

York: E.P. Dutton & Co., 1902), 67, also gives Luca agency in this regard, saying, "It is evident that the effect he desired to obtain was that of old polished marble or ivory." Charles Callahan Perkins, *Tuscan Sculptors: their lives, works and times* (London: Longman, Green, Longman, Roberts, & Green, 1864), 196, does not exactly claim that Luca himself sought this association, but instead notes that the increased use of color over time in Della Robbia works "little by little degraded the originally pure marble-like surface to the level of wax-work," implying that the figures' whiteness connects them with marble; he repeated this opinion in his 1883 *Historical Handboook of Italian Sculpture*. An association between marble and glazed terracotta is also evoked by Luca's white, classicizing architectural elements and his works' similarity to Trecento sculptures that placed white marble figures against glassy blue grounds; see Chapter One.

[157] Vasari does not mention color in the passage which compares glazed terracotta to marble and bronze. Instead, he makes a short reference to it in the next paragraph, where he informs the reader that Luca advanced to further innovations by using color in his works, heretofore white: "Ora, non bastando a Luca questa bella invenzione tanto vaga e tanto utile, e massimamente per i luoghi dove sono acque, e dove per l'umido o altre cagioni non hanno luogo le pitture, andò pensando più oltre; e, dove faceva le dette opere di terra semplicemente bianche, vi aggiunse il modo di dare loro il colore, con maraviglia e piacere incredibile d'ognuno," Giorgio Vasari, *Le vite de'più eccellenti pittori scultori ed architettori scritte da Giorgio Vasari, pittore aretino con nuove annotazioni e commenti di Gaetano Milanesi*, Vol. 2 (Florence: G.C. Sansoni, Editore, 1906), 173-174. While this might imply that Vasari's remarks in the previous paragraph concerned Luca's white figures, that point is never made explicitly.

[158] Leonardo da Vinci and Giorgio Vasari were the earliest authors to consider Luca's motivation for developing the new medium (Vasari doing so more explicitly than Leonardo). Other early commentators of the fifteenth- and sixteenth-centuries, namely Antonio Manetti, Filarete, Pomponius Gauricus, the Libro di Antonio Billi, and the Anonimo Magliabecchiano, celebrated Luca's material as an innovation but did not attempt to explain why he had developed it.

In 1973 Carlo Del Bravo proposed a new understanding, identifying Luca's glaze as an ornament in its own right, valued chiefly for its protean expressive qualities rather than the ease and economy of its manufacture. He argued that the reflectivity and varied colors of the glaze conferred a preciosity that lent value to the medium, invoking a wide range of materials, not just marble, such as porcelain, gold, and lapis lazuli.[159] He was the first scholar to propose an intimate association between the reflectivity and whiteness of Luca's glazed figures, and to connect these qualities to concepts of transcendence and purity on the basis of writings by the fifteenth-century Florentine humanist Marsilio Ficino.[160] Del Bravo limited his association between the white glaze and light to what he identified as a "late" period of Luca's glazed works, but Giancarlo Gentilini subsequently recognized its relevance for Luca's entire *oeuvre* in his 1992 Della Robbia monograph. Gentilini moreover identified new sources from earlier in the fifteenth-century that bolstered Del Bravo's interpretation, which has since become standard in the Della Robbia literature.[161]

John Pope-Hennessy offered a somewhat different account of the appeal of glazed terracotta in 1980, which also shaped later interpretations of the white glaze. It appeared in his speculations on why the Operai of the Cathedral of Florence chose to order glazed terracotta, rather than marble, reliefs to go over its sacristy doors. He argued the "color and legibility" of the material offered better visibility in dim spaces where marble did not show to advantage.[162] Presumably Pope-Hennessy attributed their "legibility" to the

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[159] Carlo Del Bravo, "L'umanesimo di Luca della Robbia," *Paragone* 24, 285 (1973): 3-34. He later expanded these arguments in Carlo Del Bravo, "Andrea Della Robbia, da giovane e da vecchio" *Artista* (1995): 58-71 and Carlo Del Bravo, "Luca, Andrea, e Giovanni" *Artista* (2012): 158-169.
[160] Del Bravo, "L'umanesimo," 25-27.
[161] Gentilini, *I Della Robbia. La scultura invetriata*, 38, 101-106. Pope-Hennessy is the only major subsequent author not to incorporate this interpretation.
[162] Pope-Hennessy, *Luca della Robbia*, 36-37.

material's sensitivity to light as well as to the works' contrast between white figures and blue ground. In making this assertion, he echoed remarks on the same subject made by the Marchesa Burlamacchi eighty years earlier: "The white that prevails in Luca della Robbia's glazed enamels was, without doubt, intended to suit the darkened churches and the glare of streets."[163] Keenly aware of an intimate relationship between ambient light and glazed terracotta, she presented the white glaze as equally suitable to environments with too little and too much light. It seems both Burlamacchi and Pope-Hennessy responded to the very qualities which had prompted Walter Pater to describe Luca's glazed sculptures as "fragments of the milky sky itself … breaking into darkened churches."

The contributions of Del Bravo and Pope-Hennessy have proved indispensable to later accounts of Luca's white glaze and of the appeal of his new medium more generally. In 1998, Francesca Petrucci joined the issues of symbolism explored by Del Bravo, and elaborated by Gentilini, with the awareness of environmental lighting conditions raised by Burlamacchi and Pope-Hennessy; she analyzed these concerns in catalog entries on Luca's *Candle-Bearing Angels* (figures 6, 7) for the Cathedral and his *Virgin and Child* (figure 16) at the Ospedale degli Innocenti.[164] The latter work will be examined closely later in this chapter. The symbolic and environmental functions of light found their fullest synthesis, however, in Geraldine Johnson's 1994 dissertation on Donatello. She proposed that fifteenth-century devotional relief sculptures of the Virgin and Child be grouped into "types," based on material, relief, and color choices, and suggested the abstract whiteness and reflectivity of Luca's glazed figures could "undermine the realism and physical

[163] The Marchesa Burlamacchi, *Luca della Robbia* (London: George Bell & Sons, 1900), 20, 23.
[164] See Francesca Petrucci's catalog entries in *I Della Robbia e l'arte nuova della scultura invetriata*, edited by Giancarlo Gentilini (Florence: Giunti, 1998), I.4 a, b 156-158, I. 6 160-161.

presence" of his works, in part through the changeable reflection of candlelight over their surfaces.[165]

Finally, alongside the developments in interpretation examined above, technical study of Della Robbia glazed sculptures undertaken since the 1990s has provided new insights into the white glaze. Glaze analyses conducted by William David Kingery and Meredith Aronson, and confirmed by subsequent researchers, have shown that Luca obtained his strikingly opaque, uniform white glaze by significantly increasing the amount of tin in his recipe relative to that of contemporary potters.[166] Luca also used special marly clay which took on a buff, pink-beige color after firing rather than the deep reddish-brown color typical of other terracotta sculpture and pottery during the period.[167] The marly clay produced a good fit with Luca's glazes, guaranteeing their longevity, and its light color did not show strongly under the glaze.[168] The even suspension of tin opacifier in Luca's considerably thick glaze layer (150-400μm) ensured a strong white

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[165] Geraldine Johnson, *In the Eye of the Beholder: Donatello's sculpture in the life of Renaissance Italy* (PhD diss, Harvard University, 1994), 274-279.

[166] William David Kingery and Meredith Aronson, "The Glazes of Luca della Robbia," *Faenza* 76 (1990): 221-225; for Renaissance potters' practices, see William David Kingery and Meredith Aronson, "On the Technology of Renaissance Maiolica Glazes," *Faenza* 76 (1990): 226-235. For the subsequent confirmation and expansion of these results, see Anne Bouquillon and Alessandro Zucchiatti, "Les Glaçures: atout maître des Della Robbia," *Della Robbia: dieci anni di studi – dix ans d'études*, edited by Anne Bouquillon, Marc Bormand, and Alessandro Zucchiatti (Genoa: Sagep Editori, 2011), 32-43.

[167] It is termed "marly clay" for its high calcium content. For the Della Robbia clay see: Anne Bouquillon, "Terra, vivi per me cara e gradita," in *Della Robbia: dieci anni di studi – dix ans d'études*, edited by Anne Bouquillon, Marc Bormand, and Alessandro Zucchiatti (Genoa: Sagep Editori, 2011), 24-31. Also: Maria Grazia Vaccari, "Tecniche e metodi di lavorazione," in *I Della Robbia e l'arte nuova della scultura invetriata*, edited by Giancarlo Gentilini (Florence: Giunti, 1998), 97-116. The first scholarly consideration of the terracotta's light color is found in Vittorio Giunti, *La maiolica italiana* (Milan: U. Hoepli**,** 1927), 3, 4, note 1; see Vaccari, "Tecniche e metodi," 99.

[168] Daphne Barbour and Roberta J. M. Olson, "New methods for studying serialization in the workshop of Andrea della Robbia: technical study and analysis," in *Della Robbia: dieci anni di studi – dix ans d'études*, edited by Anne Bouquillon, Marc Bormand, and Alessandro Zucchiatti (Genoa: Sagep Editori, 2011), 58; Bouquillon, "Terra, vivi," describes the well-developed interface layer between the glazes and clay body in Della Robbia sculpture.

hue, while a significant content of lead oxide gave brilliance to the glaze.[169] Luca's recipe is thus calibrated to give lasting power to the qualities of reflectivity and whiteness.

In sum, the research of the last fifty years has identified compelling symbolic resonances for Luca's white glazed figures. It has shown that their reflectivity made the sculptures visible as well as attractive. It has also suggested that the luminosity of the white glaze could reflect values of transcendence and purity within a religious context and might play a productive role in devotional practice. This chapter builds upon the existing interpretations in order to identify and analyze the particular effects that light has on the white glazed surfaces of Luca's terracotta sculpture. It considers key texts written by the Renaissance artists Cennino Cennini, Leon Battista Alberti, and Lorenzo Ghiberti that testify to practical and theoretical concerns. They directly address the question of how a viewer perceived the effect of light on the appearance of physical bodies, whether real or sculpted; two special cases within the written sources, moreover, consider how light affects white bodies and reflective bodies. These sources, which have not previously been applied to the study of light on the surface of sculpture, enhance our understanding of how Luca's contemporaries could have appreciated the symbolism and visibility of his white-glazed figures.

Two of the three written sources under consideration here were penned by painters rather than sculptors. This underscores the fact that the effects of light on monochrome white figures raised issues relevant for practitioners of both media in the

[169] Zucchiatti and Bouquillon "Les Glaçures," 33. The authors further suggested that the glaze's thick application softened delicate modeling, thus limiting hard edges that might harbor shadows and producing a brighter surface overall; the same suggestion is made by Marc Bormand, "«E dove faceva le dette opere di terra semplicemente bianche…» Quelques interprétations sur l'usage du blanc chez les Della Robbia," in *Aux limites de la couleur. Monochromie & polychromie dans les arts (1300-1600)*, edited by Boudon-Machuel, Marion, Maurice Brock, and Pascale Charron (Turnhout: Brepols, 2011), 174.

period. As this chapter argues, the determination to depict figures in three dimensions which preoccupied fourteenth- and fifteenth-century painters shaped one way that viewers might also look at sculpture: it conditioned them to see three-dimensional form as revealed by gradations of light and shadow and singled out monochrome white bodies—often sculpted—as an ideal site to discern such effects. The expectation that the fall of light should primarily reveal the subtleties of modeled form is a painterly one, but it is often considered a primary function of light in Renaissance art. In fact, the role of light in this period is much better studied in relation to painting than it is for sculpture. The next section therefore examines broader trends in addressing the concept of "monochromy" in relation to both painting and sculpture before moving to its examination of the writings of Cennini, Alberti, and Ghiberti in Section Four.

Section Three: Questioning Monochromy in Renaissance Painting and Sculpture

During the late nineteenth and early twentieth century, when Perkins, Cruttwell, and Marquand wrote about Luca's glazed art, monochrome marble sculpture was widely upheld as an ideal art form.[170] This attitude gained influence in particular through the writings of two eighteenth-century German authors, the intellectual Johann Gottfried Herder and the art historian and archaeologist Johann Joachim Winckelmann. They reified the abstraction of monochrome marble sculpture for its focus on essential form, free from misleading surface color.[171] Yet their regard for unadorned marble sculpture

[170] For this context see Alex Potts, "Colors of Sculpture," in *The Color of Life: Polychromy in Sculpture from Antiquity to the Present*, edited by Roberta Panzanelli, with Eike D. Schmidt and Kenneth Lapatin (Los Angeles: J. Paul Getty Museum and The Getty Research Institute, 2008), 78-97.

[171] For the context and development of this position, see an insightful book review by Jim Harris focused on the use of color in sculpture, "Looking at Colour on post-Antique Sculpture. Review of: *Circumlitio. The Polychromy of Antique and Medieval Sculpture*," *Journal of Art Historiography* 5 (2011): 1-2.

was ultimately rooted in the Renaissance *paragone* debate over the relative merits of painting and sculpture. Artists and critics involved in the debate argued over which formal qualities and goals best suited each medium, often starting from the assumption that effects of color were the exclusive preserve of the painter while the presentation of actual three-dimensional form—without color—was the essential task of the sculptor. By the nineteenth century, Luca's earliest biographers thus associated the whiteness of his glazed figures with a monochrome ideal which seemed to reflect Renaissance values and the heritage of classical art.

The nineteenth-century interpretation was partly true, for a genuine monochrome ideal does appear to develop, to an extent, in fifteenth-century sculpture. Luca typically glazed the skin, clothing, and hair of his terracotta figures white, and Donatello had already white-washed earlier terracotta figures—his monumental Joshua for the cathedral of Florence (1410) and Annunciation figures for the Cavalcanti altarpiece at Santa Croce (late 1430s-early 1440s, figure 17)—using paint rather than glaze.[172] But, as Frank Fehrenbach has cautioned, the use of color on sculpture in this period can rarely be categorized into neat polarities of "monochrome" and "polychrome," for the works actually presented a whole range of mono-, duo-, and polychromed surfaces.[173] For example, Luca always colored the eyes of his white-glazed figures, and at times gilt their hair and garments; the Cavalcanti figures also bore gilding. While the survival of partial

[172] Although it is now accepted as likely that Donatello originally applied white paint to the monument (traces of which still survive today), the conservation report does not unequivocally state this, Roberto Manni, Andreina Andreoni, and Francesca Kumar, "Annunciazione Cavalcanti," *OPD restauro* 7 (1995/1996): 185-192; also see Diane Finiello Zervas and Brenda Preyer, "Donatello's 'Nunziata del Sasso': The Cavalcanti Chapel at S. Croce and Its Patrons," *The Burlington Magazine* 150, 1260 (2008): 152-165; and Cheryl Korte, "Polychromed Quattrocento Sculpture in Florence" (PhD Diss, Institute of Fine Arts, New York University, 2011), 132-162.

[173] Frank Fehrenbach, "Coming alive: some remarks on the rise of 'monochrome' sculpture in the Renaissance," *Source: notes in the history of art* 30, 3 (2011): 47.

polychromy and gold on sculptures of the period remains incompletely documented, studies like that of Helen Geddes confirm a more extensive use than is often assumed today.[174] Yet sculptors also left increasingly significant areas of their sculptures in bronze and marble unadorned by paint and gold, in contrast to the full polychromy of late medieval wooden sculptures.[175] The novelty and high material value recognized in media like marble and bronze during this period offer two reasons for leaving such surfaces partly or fully exposed.

Though absolute monochromy was not the rule for sculptures of this period, they were often depicted that way in paintings to distinguish them from flesh-and-blood figures.[176] In Fra Angelico's Cortona *Annunciation* (figure 18, ca. 1432-1434), a half-length prophet appears as if it were a roundel sculpture, while in Ambrogio Lorenzetti's earlier *Presentation at the Temple* (figure 19, 1342), white statues punctuate the temple architecture. In both images, the figures mimic marble architectural decorations.[177] Yet other cases are less clear cut, for the meaning of painted monochrome figures varies according to the circumstances of any particular commission. The famous Virtue and Vice figures painted in the dado level of Giotto's Arena Chapel, for example, are often thought to imitate relief sculpture. Ranging in tone from white to warm grey, the personifications, including for example the *Fortitude* (figure 20, ca. 1302-1305), appear

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[174] Helen Geddes, "The polychromy of early Italian sculpture: the marble altarpiece by Jacopo della Quercia in San Frediano, Lucca, 1412-1422." *The Sculpture Journal* 11 (2004): 32-48.
[175] Patrik Reuterswärd, "The Breakthrough of Monochrome Sculpture during the Renaissance," *Konsthistorisk tidskrift/Journal of Art History* 69:3-4 (2000): 125-149.
[176] Reuterswärd, "The Breakthrough of Monochrome," 128
[177] Monochrome representation of statues and sculpture in painting is so normative that the choice to represent a statue or sculpture in color merits comment and analysis. Filippino Lippi's decision to depict a statue of Mars in full color in his frescoes for the Strozzi family chapel at Santa Maria Novella, Florence, is the subject of analysis in Philine Helas and Gerhard Wolf, "The Shadow of the Wolf: the Survival of an Ancient God in the frescoes of the Strozzi Chapel (S. Maria Novella, Florence), or Filippino Lippi's Reflection on Image, Idol and Art, in *The Idol in the Age of Art*, edited by Michael W. Cole and Rebecca E. Zorach (Farnham: Ashgate, 2009), 133-157.

against a deep wine-red, speckled ground that simulates porphyry. Interpretation of the figures' whiteness centers on questions of ontology: it can mark them as belonging to a different plane of existence or, alternatively, reveal their lack of the "life" associated with color. They are often interpreted as sculpture, the lack of surface coloring giving visual emphasis to their modeling in three dimensions felt to be a defining quality of the medium.

The interpretations advanced to explain monochrome imagery in paintings have at times encouraged a tendency to see unpainted sculptures, particularly marble ones, as "colorless" and thus lacking life. This viewpoint is misleading, as Alexander Potts has eloquently pointed out: "All sculpture is colored, in a literal sense. Even traditional marble sculpture takes on different tonalities, from a slightly fleshy yellow to a brilliant, almost antiseptic white."[178] In agreement with the ideas expressed by Potts, recent scholarship has challenged ingrained misperceptions of white monochromy as a static, homogenous, or colorless category.[179] Fabio Barry provides a model for this work in his study of colored marbles in art and literature.[180] He examines the implications, for artworks, of the two terms used in antiquity to indicate whiteness, *candidus* and *albus*: the first implies a shining brilliance, while the second indicates a lack of color.[181] His

[178] Potts, "Colors of Sculpture," 78. Jim Harris opens with this quotation of Potts' in "Looking at Colour," 1.

[179] I have benefitted from the opportunity to participate in two sessions organized around this question at the 2015 and 2016 Annual Meetings of the Renaissance Society of America: "Plain White? Questioning Monochromy in early modern Sculpture and Plasterwork," March 2015, organized by Kirsten Lee Bierbaum and Claudia Lehmann, and "Impurities: The Status of Surface in Renaissance Sculpture," March-April 2016, organized by Frank Fehrenbach and Daniel Zolli.

[180] Fabio Barry, "Painting in Stone: The Symbolism of Colored Marbles in the Visual Arts and Literature from Antiquity until the Enlightenment" (PhD diss., Columbia University, 2007).

[181] The use of multiple terms to describe the color white reflects the flexibility of color symbolisms and cautions against too rigid an understanding of any hue. John Gage, 'Color in Western Art: An Issue?" *The Art Bulletin* 72, 4 (1990): 534, reminds his readers of this flexibility and the tendency of viewers to assign expected meanings to colors based on their context or a perceived need.

research offers a needed reminder that white media invoke a multiplicity of meanings, and have a long tradition of being valued for their luminosity.

In keeping with the principle that monochromy does not constitute a single homogenous category, Renaissance marble and glazed terracotta each present white colors of varied tones and surface qualities. Luca's white glaze appears consistently as a bright, cool white, though it can acquire impurities during firing. It was possible—though uncommon—for the white glaze to also take on other appearances. In a statue of John the Baptist (figure 21) modeled by Giovanni Francesco Rustici and glazed in the Della Robbia workshop circa 1505-1515, a small but significant amount of copper was added to the white glaze to visibly warm its color.[182] Marble typically showed a greater variation in color based on its source, quality, and the finish it received. Polished marble tends to take on a darker color, while unpolished marble can appear snowy white and crystalline. Because the Della Robbia white glaze is cooler and brighter in tone than marble, and more highly reflective, it has the potential to engage the ideals associated with whiteness, such as purity and brilliance in unique ways.

Beyond inherent qualities of its material and surface finish, the appearance of any sculpture is shaped by the fall of light and shadow. White monochrome surfaces are particularly sensitive registers of ambient light, as Section Four will now explore in detail. Light can fall on a sculpture sharply from a single direction, creating cast shadows from its highest points of relief, or light may be diffuse and distant, falling over the

[182] Marietta Cambareri, "Italian Renaissance Sculpture in Glazed Terracotta and Maiolica in the Museum of Fine Arts, Boston," in *La statua e la sua pelle. Artifici tecnici nella scultura dipinta tra Rinascimento e Barocco*, edited by Raffaele Casciaro (Galatina: Mario Congedo Editore, 2007), 64; Abigail Hykin, "The Conservation and Technical Analysis of a Glazed Terracotta Figure of St. John the Baptist Attributed to Giovanni Francesco Rustici," in *La statua e la sua pelle. Artifici tecnici nella scultura dipinta tra Rinascimento e Barocco*, edited by Raffaele Casciaro (Galatina: Mario Congedo Editore, 2007), 87.

sculpture in a gradation of light and shadow that reveals its form. In order to better understand how light affects the appearance of white sculpture, especially the white-glazed terracotta figures of Luca della Robbia, the next section turns to a perhaps unexpected source: Renaissance painters' treatises by Cennino Cennini and Leon Battista Alberti. These writings offer a valuable perspective because painters of this period had begun to carefully observe the behavior of light as it fell on real bodies, some of them sculptures, in order to replicate these effects in paint. By copying these effects, painters used light as a modeling tool that could lend an illusion of three-dimensional form to the figures and objects they depicted.

Section Four examines how painters carefully fixed and limited environmental light conditions in order to produce a compelling illusion of three-dimensionality or *rilievo*, as it was called in the fifteenth century, for their subjects. Painters took great care to isolate advantageous effects of light out of a wider range of phenomena, and this selectivity speaks to the essential artificiality of the process. The section then turns to the writings of the fifteenth-century sculptor and Luca's contemporary, Lorenzo Ghiberti. Ghiberti recognized and described the ways in which changeable lighting conditions can shape the perception that viewers have of the objects in their environment. He pointed out that light did not always make the quality of *rilievo* easily legible, and that it could also create effects of luster than emphasize surface rather than form. Ghiberti applied optical principles which he had read and copied from medieval treatises to his own first-hand experience of looking at sculpture, providing evidence that a fifteenth-century sculptor might indeed have thought of the relationship between light and sculpture in terms of optical principles.

Section Four: Artists' Treatises. Looking at Light in the Renaissance

Cennino Cennini and Leon Battista Alberti's Treatises on Painting: Fixing Light

The depiction of mass and volume was a paramount goal for Florentine painters of the fourteenth and fifteenth centuries. By carefully recording the fall of light and shadow over the figures, objects, and buildings that they represented, painters created a compelling illusion of their projection in three-dimensions, or *rilievo*, within a unified and consistently illuminated spatial setting. The term *rilievo* was used by painters rather than sculptors in the early fifteenth century and thus indicates a preoccupation with representing the *appearance* of relief rather than an engagement with the sculptural process of imposing physical elevation changes on materials like marble, wood, or bronze.[183] The fourteenth-century paintings of the famous Florentine artist Giotto di Bondone, later revered as the "grandfather" of Renaissance painting, exemplify these developments. He created a compelling impression of solidity and weight in his figures through the consistent distribution of light and dark which inspired generations of artists, perhaps most prominently the young Tuscan painter Masaccio, celebrated as Giotto's heir.[184]

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[183] For the meaning and use of the term "relief" ("rilievo") during the Renaissance, see Andrea Niehaus, *Florentiner Reliefkunst von Brunelleschi bis Michelangelo* (Munich: Deutscher Kunstverlag, 1998); and Luba Freedman, "'Rilievo' as an artistic term in Renaissance art theory" *Rinascimento* 29 (1989): 217-247. For a good general treatment of light in relation to sculpture, see L.R. Rogers, "Chapter 7: Light and Form," in *Relief Sculpture (Appreciation of the Arts)* (London: Oxford University Press, 1974), 147-168.

[184] The ideal of representing of three-dimensionality was, however, particular to Florentine art in the fourteenth and early fifteenth centuries. Italian painters in other urban centers conceived the relationship between light and bodies differently; see Paul Hills, *The Light of Early Italian Painting* (New Haven and London: Yale University Press, 1987). Even in Florence, painters varied in their approach to the task, see Luciano Bellosi, ed., *Pittura di Luce. Giovanni di Francesco e l'arte fiorentina di metà Quattrocento* (Milan: Electa, 1990).

This section examines treatises by the fifteenth-century painters Cennino Cennini and Leon Battista Alberti in order to consider how the painter's desire for consistent, directional light shaped viewers' expectations about the relationship between light and the sculpted arts. The *Libro dell'arte* of Cennino Cennini, dated circa 1400, has been widely regarded as a workshop manual, given its organization into more than one hundred and fifty sections focused on specific artistic tasks, although it has recently been reinterpreted as a vanity project meant to prove Cennini's own intellectual standing, begun but not finished during his time at the Carrara court in Padua.[185] The later *Della pittura* by Alberti, written in 1435/6, is a more literary treatise meant to establish the legitimacy of painting as a liberal art, and it engages with optics in order to theorize painterly concerns of light, color, and viewpoint. Despite the potentially divergent scope and aims of the two texts, both authors devote significant attention to how the painter ought to apply lights and shadows according to a fixed viewpoint and light source. Both men, decades apart, are progressive in promoting imitation from nature and, in fact, that is the implicit goal of modeling *rilievo* for Alberti, who lists "reception of light" as one of three aspects of painting that "we learn from Nature."[186] Both also make it clear that consistency—in fixing one's lighting and position relative to the subject—is necessary in order to create a compelling illusion.

Alberti invokes sculpture both as a point of comparison, in terms of difficulty and praiseworthiness, to painting (he champions the latter) and as a three-dimensional exemplum for pictorial modeling. The second point differs from the well-studied role of

[185] Lara Broecke, *Cennino Cennini's 'Il Libro dell'arte': A New English Translation and Commentary with Italian Transcription* (London: Archetype Publications, 2015): 5-9.
[186] Cennini, *Craftsman's Handbook*, 57, suggested that the painter represent mountains by copying from a real rock in his studio; Alberti, *On Painting*, 64-65. Also see Freedman, "'Rilievo,' as Artistic Term," 224.

classical sculpture as a source of classical subjects and motifs such as *putti* and the heroic nude. Painters and sculptors alike during the Renaissance looked to classical sculpture as a means to reclaim antiquity, since hardly any classical paintings survived. Yet what Alberti describes here is not the copying of subject matter but rather the imitation of a three-dimensional appearance, which could be derived from antique and modern sculptures alike.[187] For Alberti, a figure's relief (or *rilievo*) is revealed by the fall of light and dark over its surface,[188] a phenomenon which the painter must fix carefully lest it change and in so doing alter the appearance of his object. We turn to Alberti on the subject of imitation:

> If it is a help to imitate the work of others, because they have greater stability of appearance than living things, I prefer you to take as your model a mediocre sculpture rather than an excellent painting, for from painted objects we train our hand only to make a likeness, whereas from sculptures we learn to represent both likeness and correct incidence of light.[189]

The deliberate contrast between an "excellent" painting and a "mediocre" sculpture makes clear that it is the phenomenological quality of sculpture, as a real body responding to ambient light, that matters, not artistic quality. By virtue of its physicality sculpture can, like nature, teach the "correct" distribution of light and dark that gives a figure relief and, if done with great skill, earns its painter high praise (even comparison to Zeuxis!).[190]

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[187] A vast literature identifies the classical sculptures that served as models for the poses of individual figures and the subject matter of works of art in the Renaissance. Sculpture undoubtedly served this role for both painters and sculptors in the fourteenth and fifteenth centuries. Less well-developed, though no less present, in the literature is the claim that sculptures could also furnish a model for the quality of "plasticity" that painters sought to lend their figures. A more thorough development of that idea is one of the goals of this chapter.

[188] Leon Battista Alberti, *On Painting*, translated by Cecil Grayson, with an Introduction and Notes by Martin Kemp (London: Penguin Books, 2004), 82.

[189] Alberti, *On Painting*, 92.

[190] Alberti, *On Painting*, 82.

While the artist may look to existing artwork as a more stable model, Alberti clarifies that the appearance of sculpture is, in fact, more changeable than that of painting. He points this out in order to show the usefulness of his 'veil' strategy of pictorial circumscription, which creates a fixed relationship between painter and subject:

> You know how impossible it is to paint something which does not continually present the same aspect. This is why people can copy paintings more easily than sculptures, as they always look the same. You also know that, if the distance and the position of the centric ray are changed, the thing seen appears to be altered.[191]

Alberti implies that the constancy of a sculpture's appearance depends on viewing conditions; a fixed aspect is not intrinsic to three-dimensional media. His 'veil' (or 'intersection') resolves the matter by positioning the artist's body properly relative to his object. Disciplining the human body in this manner turns out to be essential, because its movement causes change in the appearance of things around it. Alberti's reference to the centric ray makes this point by invoking an earlier discussion of the two factors which alter an object's appearance: position and lighting.[192] The centric ray is the truest conduit of vision; at the center of the visual pyramid, it changes with any movement in the viewer's position.

Even with his body thus positioned, however, the artist must also regulate environmental light. Alberti discusses grading colors with black and white, but Cennini gives detailed instructions for overall compositional lighting. In general, light should come from the left unless contradicted by on-site conditions, in which case those conditions guide the artist.[193] Cennini explains the need to follow ambient lighting,

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[191] Alberti, *On Painting*, 65-66.
[192] Alberti, *On Painting*, 39ff. One might imagine this effect in terms of the popular cliché that the subject of a painting seems to be alive because its eyes follow one's movements around a space: the movement of the viewer causes the perceived change in the object.
[193] Cennini, *Craftsman's Handbook*, 5-6. "Ma fa' che, quando disengni, abbi la luce tenperata, e'l sol ti batta in sul lato manco," Cennini, *Libro dell'arte*, 5-6.

because it guides how the artist should place lights and darks: "And so, following the lighting, whichever side it comes from, apply your relief and shadow, according to this system."[194] Without agreement between real and painted light, the painting's *rilievo* will not succeed: "…because, if it failed in this respect, your work would be lacking in relief, and would come out a shallow thing, of little mastery."[195] The demonstration of artistic skill, a concept Michael Baxandall has shown to become a concern in contracts of the fifteenth century, thus depends of success in this endeavor.[196]

Alberti suggested that an artist might learn to depict the distribution of light and shadow by studying sculpture, but did not specify what type of sculpture should be used. However other sources reveal that monochrome gesso and marble objects were put to this end.[197] For instance, in the *Libro dell'Arte*, Cennino Cennini explained how to make gesso casts from life for use in the painter's studio; though he does not explicitly state

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Cennini, *Libro dell'arte*, 6: "Se per ventura t'avenisse, quando disegnassi orritraessi in chappelle, o coloressi innaltri luoghi chontrarii, che non potessi avere la luce dalla man tua o attuo modo, seguita di dare el rilievo alle tue figure, o veramente disengnio, secondo l'ordine delle finestre chettruovi ne'detti luoghi, che t'hanno addare la luce. E chosi, seguitando la luce da qual mano si sia, da' el tuo rilievo e lo schuro, secondo la ragion detta. E se havenisse che la lucie venisse o risprendesse per lo mezzo in faccia, o vero in maesta, per lo simile metti il tuo rilievo chiaro e schuro alla ragion detta. Esse la luce prosperasse cun fenestra che fusse magior d'altre, che fusse ne' detti luoghi, seguita sempre la piu excellente lucie; e voglia con debito ragionevole intenderla e seguitarla, perche, di cio manchando, non sarebbe tuo lavorio con nessuno rilievo, e verrebbe cosa semprice, e con pocho maestero." The light is tempered ("temperata") to avoid the extreme shadows cast by a strong light, a style of painting that won't become popular until Caravaggio.

[194] Cennini, *The Craftsman's Handbook*, 6.

[195] Cennini, *The Craftsman's Handbook*, 6.

[196] Michael Baxandall, *Painting and experience in fifteenth-century Italy: a primer in the social history of pictorial style* (Oxford: Clarendon Press, 1972).

[197] Particularly informative on this topic are Wolfram Prinz, "Dal vero o dal modello? Appunti e testimonianze sull'uso dei manichini nella pittura del Quattrocento," In *Scritti di storia dell'arte in onore di Ugo Procacci*, I, edited by Maria Grazia Ciardi Dupré Dal Poggetto and Paolo Dal Poggetto (Milan: Electa, 1977), 200-208; and Francis Ames-Lewis, *The Intellectual Life of the Early Renaissance Artist* (New Haven and London: Yale University Press, 2000), 46-57. For further bibliography, see Phyllis Pray Bober, "Introduction: Renaissance Artists and the Uses of Antiquity," in *Renaissance Artists & Antique Sculpture. A Handbook of Sources*, edited by Phyllis Pray Bober and Ruth Rubenstein (London: Harvey Miller Publishers, 1986), 31-42.

their purpose, scholars have identified them as models for drawing.[198] Casts of a foot appear to be the subject of a circa-1460 drawing (figure 22) by the workshop of the Florentine painter Benozzo Gozzoli.[199] Lit by a single source at the left as Cennini advised, the drawing is an exercise in recording three-dimensional form through careful notation of light and shadow. Vasari reports that the Paduan painter Andrea Mantegna (1431-1506) similarly studied from gesso casts after antique sculptures in the workshop of his master, Squarcione, while the will of the Sienese painter and sculptor Neroccio di Bartolomeo de' Landi (1447-1500) listed among numerous sculptures in various media many in gesso, including seven heads in *mezzo rilievo*, three *gessi* of Apollo, three heads and a foot.[200] Andrea del Verrocchio (1435-1488) also used gesso to cast hands, feet, knees, legs, arms, and torsos from life, as well as death masks, from which to copy.[201]

In the introduction to his *Lives of the Artists*, Vasari confirmed that one reason for using such sculptural models—which might be made of marble, stone, or clay in addition to gesso—was to copy the shadows and light that fall on them; a second benefit was that they did not move, unlike living models.[202] These are the same reasons suggested by Alberti for copying after a sculpture rather than a living being. Vasari moreover attests to the fact that sculpted models could be made of many media, not always or only gesso.[203] However, regardless of media it appears that a monochrome body was to be used in many

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[198] Eckart Marchand, "Material distinctions: plaster, terracotta, and wax in the Renaissance artist's workshop," in *The matter of art: materials, practices, cultural logics, c. 1250-1750*, edited by Christy Anderson, Anne Dunlop, and Pamela H. Smith (Manchester: Manchester University Press, 2015), 163-166.
[199] Bernhard Degenhart and Annegrit Schmitt, *Corpus der Italienischen Zeichnungen 1300-1450. Volume I Süd- und Mittelitalien. Part 2 Katalog 168-635* (Berlin: Mann, 1968), cat. no. 453, 485.
[200] Vasari *Le vite*, Vol. 3, 385-386; Gaetano Milanesi, *Documenti per la storia dell'arte senese*, Vol. 3 (Siena: Onorato Porri, 1856), 7-8.
[201] Vasari, *Le vite*, Vol. 3, 372-373.
[202] Prinz, "Dal vero," 206; Vasari, *Vite* I, 176.
[203] Antonio Averlino, detto il Filarete, in his *Trattato di Architettura*, also describes wooden models with moveable limbs that can be dressed with cloth; Prinz, "Dal vero," 204.

cases, and that body was white when made of plaster or marble. This fact thus firmly establishes a contemporary practice of painters looking to white sculpted bodies as a locus for the gradation of light that records three-dimensionality.

Luca himself recorded light cast from a fixed source, in the manner advised by Cennini and Alberti, in the *Twelve Months* glazed terracotta roundels at the Victoria and Albert Museum in London (figure 23).[204] He made these roundels as part of a larger ensemble of glazed ornament that covered the ceiling of Piero de' Medici's private study in the Palazzo Medici in Via Larga, and the commission, while undated, is believed to have been completed in the early 1450s, likely before 1456.[205] Notable within Luca's *oeuvre* for their painterly use of glaze on flat terracotta surfaces, the scenes are rendered with fine brushstrokes of white and dark blue glaze on a mid-tone blue ground. In the *January* scene (figure 24), for example, the clothing and body of a woodcutter rely on the blue ground as their middle tone, with highlights raised in white strokes, shadows noted in deep blue, and some gradation between the tones. As Gentilini and others have noted, the technique resembles blue-ground drawings popular during the period, and drawings of this type have been attributed to Luca della Robbia in the past.[206] At the upper left, a bright golden sun in the zodiac frame casts light into this and the other eleven roundel scenes, dictating the fall of light and shadow that the artist records over his subjects.

The use of pictorial modeling in the *Twelve Months* roundels thus confirms Luca della Robbia's familiarity with the procedures for depicting volume and mass described

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[204] Luca also records the fall of light on fruit, nuts, and leaves in the flat glazed terracotta garland for the Bishop Federighi tomb for San Pancrazio, Florence, which is discussed in Chapter Three.
[205] The glazed terracotta decorations that Luca made for Piero's *studiolo* were described by Filarete in his *Trattato*; they are assumed to predate Filarete's last documented visit to Florence in 1456; for a discussion of the proposed dating, see Pope-Hennessy, *Luca*, 241.
[206] Gentilini, *I Della Robbia. La scultura invetriata*, vol. 1, 111-112.

by Alberti and Cennini. Luca's own practical experience with the technique would have made him aware of its strengths and weaknesses as a means for conveying three-dimensionality from a single, fixed viewpoint. This approach to modeling with light was, moreover, widespread in paintings of the early fifteenth century, making it possible for both the artist and contemporary viewers to be aware of it without personally reading the treatises by Cennini and Alberti.

Lorenzo Ghiberti's Third Commentary: The Phenomenology of Light and Sculpture

Alberti and Cennini's detailed admonitions about the best way to regulate and copy ambient light ultimately underscore the artificiality of their task, for the appearance of the objects they sought to represent was, in reality, ever-changing. This point is made nowhere more clearly than in the third book of Lorenzo Ghiberti's *Commentarii*, begun circa 1447 and unfinished at his death in 1455. The *Commentarii* is divided into three books: the first covers the art of antiquity; the second gives a history of 'modern' Italian art, including that of the author and his contemporaries; the third examines the sciences of optics, anatomy, and proportion.[207] The Third Commentary is by far the lengthiest and most challenging to modern scholars, for its arguments are often fragmentary. In large part, the Third Commentary paraphrases and even directly transcribes, without attribution, writings by the medieval theoreticians Ibn al-Haythan (known as Alhazen),

[207] See Janice L. Hurd, "The Character and Purpose of Ghiberti's Treatise on Sculpture," in *Lorenzo Ghiberti nel suo tempo. Atti del convegno internazionale di studi (Firenze, 18-21 ottobre 1978)*, vol. 2 (Florence: Leo S. Olschki Editore, 1980), 193-315; *Lorenzo Ghiberti. I commentarii*, edited with an introduction by Lorenzo Bartoli (Florence: Giunti, 1998); and Klaus Bergdolt, *Der dritte Kommentar Lorenzo Ghibertis. Naturwissenschaften und Medizen in der Kunsttheorie der Frührenaissance* (Weinheim: VCH, 1988).

Ibd Rushd (known as Averroes), Ibn-Sīnā (known as Avicenna), Roger Bacon, John Peckham, and Witelo.

Ghiberti's extensive appropriation of earlier authors long discredited the Third Commentary, until scholars asserted the legitimacy of this literary strategy during his day.[208] Whether or not the words and ideas are his own, what is important for the argument of this chapter is that Ghiberti selected which passages to copy and supplemented them with some of his own direct observations of sculpture.[209] These anecdotes from his personal experience appear relatively early in the Third Commentary, in Section III.[210] A key point that emerges repeatedly in the book is the power of environmental light conditions to control the viewer's perception of sculpted detail; it is to this point that Ghiberti applies the stories from his own experience, which involve marble sculptures and incised gems. Ghiberti demonstrates the changeability of a sculpture's appearance under light for both marble and gems that is directly relevant to glazed terracotta sculpture. The marble and terracotta sculptures are comparable in terms of their size, subtlety of modeling, and—in the case of Luca's works—whiteness, while incised gems resemble glazed sculpture in the effects of luster both invite on their reflective surfaces.

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[208] For a positive assessment of Ghiberti's intellectual accomplishment, see Hurd, "The Character and Purpose," and John Gage *Color and Meaning: Art, Science, and Symbolism* (Berkley and Los Angeles: University of California Press, 1999), 98-104. This point is also made by McHam, *Pliny*, 109. Finally, see John Gage, "Ghiberti's Third Commentary and its Background" *Apollo* 95 (1972): 364-369, which argues that Ghiberti adapted and augmented his sources in accord with his own interests and training as a goldsmith and glassworker. Gage moreover applies Ghiberti's comments on semiprecious stones to his large-scale stained glass works.

[209] In the introduction to his edition of the Commentarii, Lorenzo Bartoli points out the intelligence Ghiberti used in compiling his text, made evident by his application of the ideas to his own experiences of sculpture; see *Lorenzo Ghiberti. I commentarii*, 33-34.

[210] *Lorenzo Ghiberti. I commentarii*, 107-110.

Ghiberti's personal examples develop two particular concerns related to looking at sculpture. The first is an extreme case: finely modeled detail which is difficult to assess by sight alone, even under good lighting conditions. Its power as an example relies on implied opposition to the assumption that light should reveal form as Alberti dictated. In sections III.1 and III.2, Ghiberti describes his observations of two antique sculptures unearthed during the fifteenth century and likely made of marble: first, a *statua* of a hermaphrodite found in Rome and second, a *statua* of an unidentified person with broken head and arms found in Florence, which Ghiberti saw in Padua.[211] Ghiberti declares his praise for both sculptures, specially noting their areas of subtly modeled detail.[212] In the case of the hermaphrodite, he says that the eye could not discover these subtleties, or *dolceze*, until the hand had found them by touch; in the second sculpture, they could not be seen at all in either strong or moderate light, but known only by touch.[213] Although the precise nature of the details is not stated, what emerges is a disrupted expectation that three-dimensional form can be appreciated in a purely optical manner.

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[211] *Lorenzo Ghiberti. I commentarii*, 107-108. Ghiberti does not identify the medium of either sculpture. However, because the works survived underground for many centuries, they would have to have been made of a durable material like bronze or stone. Most antique sculptures that survived in Ghiberti's lifetime were stone, specifically marble, as works in bronze were often melted down for reuse before the Renaissance.

[212] "moltissime dolceze"; *Lorenzo Ghiberti. I commentarii*, 108.

[213] Ghiberti opens his discussion of the Hermaphrodite sculpture in Section III.1 with these words: "<A>ncora ò veduto, in una temperata luce, cose scolpite molto perfette e fatte con grandissima arte e diligentia, fra ·lle quali vidi in Roma, nella olimpia quattrocento quaranta, una statua d'uno Ermofrodito...."; *Lorenzo Ghiberti. I commentarii*, 107. Later, he says of the sculpture: "In questa era moltissime dolceze; *nessuna cosa il viso scorgeva, se non col tatto la mano la trovava*" (emphasis mine); *Lorenzo Ghiberti. I commentarii*, 108. Of the statue which he saw in Padua, described in Section III.2, Ghiberti writes: "À moltissime dolceze, le quali el viso no ·lle comprende, né con forte luce, né con temperata, solo la mano a toccarla la truova"; *Lorenzo Ghiberti. I commentarii*, 108.

For a consideration of touch in relation to Renaissance sculpture, see Adrian W.B. Randolph, *Touching Objects: Intimate Experiences of Italian Fifteenth-Century Art* (New Haven: Yale University Press, 2014); Peter Dent, ed. *Sculpture and Touch* (Farnham: Ashgate, 2014), a reference for which I thank Marietta Cambareri; and Penelope Curtis, *Depth of Field: the Place of Relief in the Time of Donatello* (Leeds: Henry Moore Institute, 2004).

Ghiberti's account of the two statues he saw in Rome and Padua relates to his general comments in the early part of the Third Commentary (Sections II-IV) about how ambient light affects the visibility of sculptural details.[214] Early on (Section II.11), he described how subtle sculpting[215] is invisible in weak light and dark places, but visible in bright, luminous spaces and when seen by sunlight (or firelight, II.13). The hermaphrodite example bears out his point that subtle modeling can be difficult to see except under certain conditions. However, both it and his second example of the acephalic statue also introduce a new complication—that it might not be possible to discern by sight what has not already been confirmed by touch. In the case of the Hermaphrodite, Ghiberti is only able to see the detail once he has felt it with his hand, while in the second case of the headless statue he cannot see these details at all, only feel them.

The second concern related to looking at sculptures covered in Section III is the effect of luster created by light on the surface of a bright body,[216] specifically an incised gem. The point Ghiberti makes here concerns the surface reflectivity of the gem, a quality shared by Luca's medium, rather than its translucency. Copying Alhazen (Section II.13) Ghiberti makes the general declaration that a bright body shines with reflections which obliterate its engraved figures when seen under direct light. Those same figures only

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[214] Ghiberti also describes how lighting conditions also determine the viewer's apprehension of colored bodies (he mentions two types of blue and a wine red), for their colors show brilliantly under bright light and become turbid in dim light; see Section II.12, *Lorenzo Ghiberti. I commentarii,* 106, and Section IV.2, *Lorenzo Ghiberti. I commentarii*,110-111.

[215] "sottili sculture"; *Lorenzo Ghiberti. I commentarii,* 106ff

[216] "corpo terso"; the discussion of the difficulty of seeing images engraved into such bodies begins in Section II.13; *Lorenzo Ghiberti. I commentarii,* 106-107.

become visible under temperate light.[217] Then Ghiberti turns to his own experience (Section III.3) of examining a chalcedony, owned by the Florentine humanist Niccolò Niccoli, engraved with the image of a youth kneeling at an altar, holding a knife in one hand and a small idol in the other. Ghiberti described the experience of looking at this gem, recalling that when it was illuminated too strongly it shone with reflections, obliterating its figures: "the strong light and reflections obscure the understanding of the form."[218] Those figures became visible when seen in temperate light, or when the gem's incised side was held up against a strong light. The example therefore presents a larger and very important idea: the representational value of sculpture can at times be subsumed by perception of its material body. The determining factor is lighting, and Ghiberti's examples show the definition of proper lighting to depend on the medium and handling of the object involved.

Ghiberti therefore shows the appearance of a sculpture to be changeable, dependent on the light around it. Sculptural modeling is susceptible to disappearance when very fine or carried out on a highly reflective body. In a further point relevant to this discussion, Ghiberti notes that the color of an object likewise appears contingent on the light around it. He gives the example of a white body which can take on the cast of color of a more brightly lit, colored body adjacent to it.[219] Though the point of this example is about the ability of light to carry color, Ghiberti uses a white object as an example of a body susceptible to such effects. Therefore, while the anecdotes in Section

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[217] II.13; *Lorenzo Ghiberti. I commentarii*, 106-107. Gage, "Ghiberti's Third Commentary," 365, notes that Ghiberti adds a complication and thus new meaning to Alhazen's original discussion by choosing as his example a multicolored stone, chalcedony, would could also affect perception of the carved image.
[218] "La ragione è questa, che le pietre fini e lustrate, essendo in cavo, la forte luce e la reflexione d'esse occultano la conprensione"; *Lorenzo Ghiberti. I commentarii*, 109-110. Earlier on, in Section II.13, Ghiberti noted that, upon reflection on the object's surface, ambient light becomes "più forte e più scintillante," obscuring its sculpted details; *Lorenzo Ghiberti. I commentarii*, 107.
[219] *Lorenzo Ghiberti. I commentarii*, 107.

III showed the appearance of a three-dimensional body to rely on the conditions in which it is viewed, the example of the white body underscores just how receptive Luca's reflective white figures could be to the quality of light in their environment. In sum, the changeability that Ghiberti observed provides an instructive complement to Alberti's text, making sense of his need to fix the position of both viewer and ambient light in order to maintain a consistent appearance.

It is important to note that Ghiberti's rather different examples—modeled marble and lustrous gems—offer equally relevant comparisons to the glazed terracotta sculptures of Luca della Robbia. As Marco Collareta has observed, the medium joins the luminescence of small, precious objects and flat, reflective media like glass and mosaic with sensitive modeling on a large scale.[220] Prior to the 1430s, media like gold, silver, and previous stones that reflected light so strongly were rare and costly. Stained glass and mosaic were available on a much larger size but could not be modeled in three dimensions. The only medium that could match glazed terracotta in its potential for reflectivity and plasticity on a large scale was bronze, in particular gilt bronze.[221] It is for this reason that Donatello's famous *Saint Louis of Toulouse* (1423-25, figure 25) for the niche of the Guelf party at Orsanmichele should be considered the near kin of Luca's glazed figures.[222] The combination of fluid modeling and sparkling preciosity on a large scale that both Luca and Donatello achieved would have been truly remarkable to a fifteenth-century viewer.

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[220] Marco Collareta, "Un percorso coerente. Fortuna e sfortuna della scultura invetriata," in *I Della Robbia e* l'arte nuova *della scultura invetriata*, edited by Giancarlo Gentilini (Florence: Giunti, 1998): 1-8.
[221] Gold gilding was also applied to wood, stone, and terracotta sculptures, but only covered them partially, not completely as in the *Saint Louis of Toulouse*.
[222] For this statue see David Boffa, "Divine Illumination and the Portrayal of the Miraculous in Donatello's 'St. Louis of Toulouse,'" *Simiolus* 31, 4 (2004): 279-291.

Professional and Social Connections between Lorenzo Ghiberti and Luca della Robbia

Ghiberti's writings offer a legitimate approach to understanding Luca's glazed terracotta sculptures for two reasons. Firstly, significant professional and social relationships existed between the two artists. As one of the most important early practitioners of terracotta sculpture in the early fifteenth century, Ghiberti would have served as a natural model and reference point for Luca's later work in the medium. Additionally, a 1427 document seems to confirm that Luca (and Donatello) worked in some capacity on Ghiberti's second pair of doors for the Florentine baptistery, establishing a professional collaboration between the artists.[223] Luca and Ghiberti also worked extensively at the same site, the Cathedral of Florence, in the 1430s and 1440s. Ghiberti provided designs for thirty-six of its stained glass windows and created a bronze shrine for the Zenobius Chapel in the north tribune; Luca carved his marble organ loft, accepted work for the Chapels of Saints Peter and Paul which flanked the Zenobius Chapel, and also made relief sculptures for the Campanile and Sacristy doors (see Chapter Four).

Moreover, records attest to the social and cultural setting that Luca and Ghiberti shared within Florence. The humanist and librarian Vespasiano da Bisticci famously listed Luca and Ghiberti among members of the intimate circle of the Florentine humanist Niccolò Niccoli.[224] Niccoli's collection of antiquities has been adduced as a likely source

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[223] The 1427 Catasto of the goldsmith Antonio del Vagliente lists Luca di Simone della Robbia and Donatello alongside Ghiberti as debtors; the names of both Luca and Donatello were accompanied by the phrase "fa le porte." This document was published by Alessandro Guidotti in 1990, see Gentilini, *I Della Robbia. La scultura invetriata*, vol. 1, 20.

[224] "Non solo Nicolai prestò favori a uomini litterati, ma intendendosi di pitura, scoltua, architettura, con tutti ebbe grandissima notitia, et prestò loro grandissimo favore nel loro exercicio, Pipo di ser Brunellesco, Donatello, Luca della Robbia, Lorenzo di Bartoluccio, et di tutti fu amicissimo." As printed in John Pope-

of classical motifs for Florentine artists, and the chalcedony that Ghiberti discussed in Section III.3 of his Third Commentary in fact belonged to Niccoli. There is no reason to doubt that Ghiberti did examine the humanist's collection of engraved gems, and he may even have done so in the company of Niccoli and others; this would potentially have offered one occasion for Ghiberti to spread his ideas outside of his text. Though it is ultimately inconclusive to imagine what went on at the gatherings organized by Niccoli, it is reasonable to think that Ghiberti and Luca exchanged ideas in that setting. In his 1435/6 dedication to *Della pittura*, Alberti similarly associated Luca and Ghiberti together with an elite group of artists, including Brunelleschi, Donatello, and Masaccio, who were reviving Florentine art.

Ghiberti's writings gain relevance in a second regard, for they reveal the intellectual goals that a fifteenth-century sculptor might hold. The Third Commentary confirms that at least one of Luca's contemporaries turned to medieval texts on optics as a source for language about light and vision that could explain personal perceptions of sculpture. Though Ghiberti copied and cobbled together the language of earlier sources, he took the momentous step of *applying* their ideas to his own experience when discussing the marble statues and engraved gem. The incorporation of his personal experience confirms both that a sculptor of the day would be interested in optical questions in regard to art and that he would consider medieval sources an appropriate aid in addressing them. Particularly relevant to glazed terracotta sculpture is Ghiberti's concern with the effect of light on perception of a finished object. His is therefore a

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Hennessy, *Luca della Robbia*, 15 (footnote 32); he cites Vespasiano da Bisticci, ii, 237, Aulo Greco edition, 2 vols. (1970-6). For Luca's intellectual life, see Gentilini, *I Della Robbia. La scultura invetriata*, vol.1, 81-84.

phenomenological approach to art that can help to theorize the viewing experience of a broader fifteenth-century audience.

To be clear, the professional and social connections between the two men do not prove that Luca ever read Ghiberti's Third Commentary, which was likely begun in the late 1440s and remained an unfinished manuscript at Ghiberti's death in 1455. Even if he did read it, Luca had been making glazed sculptures for nearly two decades at that point. What is certain, however, is that Ghiberti's treatise raises questions about how processes of vision relate to sculpture and its materials; these questions could have concerned any fifteenth-century Florentine sculptor, and Ghiberti demonstrates one approach that might be taken to understanding them. Given the many connections that existed between Luca and Ghiberti, and the fact that these men worked in the vitreous media of ceramic and stained glass respectively, it is possible to imagine a direct exchange of ideas between them on topics of perception, sculpture, and light. Considering the larger intellectual circle to which Luca and Ghiberti belonged we can also treat these ideas about light as part of their cultural milieu, of which fellow artists and patrons would be aware.

Section Five: Application to Innocenti *Virgin and Child* with Ego Sum Lux Mundi Banner

The previous section has discussed two distinct ways in which Luca and contemporaries may have viewed the reflective white surfaces of a sculpture. The first focuses on the whiteness of the surfaces which is highly sensitive to the effects of ambient light. Painters of the period increasingly took advantage of this fact by carefully fixing the light on white plaster casts and sculptures, so that they could copy the resulting

distribution of light and shadow. In doing so, they were able to give an illusion of three dimensional mass to the figures that they painted. The second observes effects of luster which move over the surface of the sculpture independent of representational and modeling functions. Luster belongs to the fundamentally changeable nature of a sculpture's appearance within a real environment, a quality which painters worked hard to control. The previous section has argued that both types of light effects were understood and contextualized in relation to a growing desire in art of the fourteenth and fifteenth centuries to make the qualities of mass, weight, and modeling visible in painted and sculpted art.

This section considers how such effects of light might have shaped the understanding of Luca della Robbia's white-glazed terracotta figures of Christ and the saints. In particular, it focuses on his sculpture of the *Virgin and Child* (figure 16) at the Museo degli Innocenti in Florence, which explicitly evokes the theological role of Christ as the "Light of the World." This section identifies distinct lighting effects—gradations that model form and areas of luster that accentuate surface—on the glazed figures of the *Virgin and Child* and considers the tension they produce between corporeality and transcendence. It reviews existing interpretations of the figures' whiteness and reflectivity as alluding to purity, spiritual light, and transcendence with a new precision afforded by the preceding analysis of light as it was discussed in the texts by Cennini, Alberti, and Ghiberti. Finally, it pursues Geraldine Johnson's evocative suggestion that the play of light over the white-glazed figures could "dissolve" their solidity in favor of

attractive surface effects, serving a devotional function by prompting meditation that moves beyond the physical world.[225]

Luca's *Virgin and Child* at the Museo degli Innocenti in Florence is a sculpture in high relief.[226] It presents the Virgin frontally from the waist up, holding Christ effortlessly in the crook of her left arm. He stretches wide a little banner inscribed with the words "Ego sum lux mundi" (I am the light of the world), which he indicates with one finger. The brilliance evoked by these words resonates immediately with the reflective white skin, hair, and clothing of the holy infant and mother. The Virgin gestures toward a second band of text from the Magnificat, a hymn of praise found in the gospel of Luke, stretched along the beveled blue base of the work: "quia respexit Dominus humilitatem ancillae suae" (for he hath regarded the lowliness of his handmaiden). Though both figures point to lines of writing, their attention is fixed outward, perhaps on the viewer: they stare ahead with unsettlingly pale blue eyes (figures 26, 27). The demeanor of the Virgin is contemplative and reserved, while Christ smiles gently with a playful tilt of the head.

The Innocenti sculpture is a productive choice for examination here because it openly evokes the symbolism of Christ as the Light of the World through the words on his banner. It invites the viewer, therefore, to reflect on the resonances of light within a

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[225] Geraldine Johnson, *In the Eye of the Beholder: Donatello's sculpture in the life of Renaissance Italy* (PhD diss, Harvard University, 1994), 277-278.

[226] For the Innocenti Virgin and Child, see: Beatrice Paolozzi Strozzi and Marc Bormand, eds., *The Springtime of the Renaissance. Sculpture and the arts in Florence 1400-60* (Florence: Mandragora, 2013), 472-473; Francesca Petrucci, *Luca della Robbia* (Rome: Gruppo Editoriale L'Espresso, 2005), 132, no. 16; Francesca Petrucci in Giancarlo Gentilini, *I Della Robbia e l'*arte nuova *della scultura invetriata* (Florence: Giunti, 1998), 160-161, no. I.6; Luciano Berti and Antonio Paolucci, *L'età di Masaccio*, 246-247, no. 93; Giancarlo Gentilini, *I Della Robbia*, 97-98; John Pope-Hennessy, *Luca della Robbia*, 64, 253, pl. XXVI, no. 33; Luciano Bellosi, *Il museo dello spedale degli Innocenti* (Milan: Electa, 1977), 226, tav. 7, no. 4; Ugo Cherici, *Guida storico artistica del R. Spedale di S. Maria degli Innocenti di Firenze* (Florence: Bandettini, 1926), 65-66, n. 93; see Marquand, *Luca della Robbia*, 115-116, fig. 71, no. 28, for bibliography before 1914.

theological context as well as the physical presence of light as gauged by the white and reflective surfaces of the figures. Luca and his nephew Andrea represented the subject of the Virgin and Child with a Lux Mundi banner at least six other times. The only firmly dated example within this group is the overdoor lunette of the *Virgin and Child with Saints* (figure 13) that Luca made for the church of San Domenico in Urbino in 1450.[227] It serves as a benchmark for dating all of Luca's Virgin and Child reliefs, and its similarity in subject and style to the Innocenti sculpture is the reason for dating the latter work to circa 1450.[228] In addition to these two, the following works include Christ with the Lux Mundi banner: a half-length high relief *Virgin and Child* at the Metropolitan Museum of Art in New York, known as the Altman Madonna; an overdoor lunette of the *Virgin and Child with Angels* from the Via dell'Agnolo, today at the Bargello Museum in Florence; a full-length *Virgin and Child* at Santa Maria della Fraternità in Foiano della Chiana; a small devotional relief of the *Adoration of the Child* at the Museo Nazionale di San Matteo in Pisa; and a half-length relief of the *Virgin and Child* in the Bode Museum in Berlin.

In all of the Lux Mundi sculptures, the figures are glazed entirely in white, with blue, green, and yellow glazes reserved for their bases, the grounds behind them, and for floral decorations. The figures have carefully painted eyes: the pupil and outline of the iris are applied with a dark, saturated pigment, and a lighter color is used for the irises themselves. In some works, such as the Altman Madonna at the Metropolitan Museum, Luca also painted eyebrows and the lashes of the upper eyelids. He also sometimes gilt the hair and garment borders of his figures. A photograph taken before 1925 shows the

[227] Pope-Hennessy, *Luca*, 62-63.
[228] Pope-Hennessy, *Luca*, 62-64.

Innocenti *Virgin and Child* with such gold details which are clearly modern additions and have now been removed; it is not known if they replaced original gilding.[229] Though Luca's subjects received color in their eyes, gilding, and surroundings, the figures themselves remain predominantly white, invoking an abstract ideal and leaving wide expanses of the sculpture open to register the effects of ambient light.

The fall of light on these glazed expanses has a bewitching power, producing cheerfully pristine surfaces punctuated—and ruptured—by brilliant areas of luster. Luca's medium allows an unparalleled conflation of white color and shining reflections which bear out Christ's message about his role as the Light of the World. The words on his banner (figure 28) are quoted from John 8:12: "I am the light of the world. Whoever follows me will never walk in darkness, but will have the light of life." Christ truly shines, in confirmation of these words, thanks to the reflective material from which he is made, and the white color of the glaze also complements this meaning. In the fifteenth century, white could symbolize purity and also evoke the brightness of light. Both valences are bound up together in a 1425 sermon delivered in Florence by the popular Franciscan preacher Bernardino of Siena, who compared the color white to the virtuous believer's soul, saying "white is shining and resplendent: just as the virtuous soul is radiant and shines with the grace of God."[230] Bernardino's comparison relies on a twofold association of whiteness with purity, an idea expressed in later writings by Saint Antoninus, Bishop of Florence from 1446-1459, and of whiteness with the brilliance of

[229] Pope-Hennessy, *Luca*, 253.
[230] Saint Bernardino da Siena, *Le prediche volgari inedite. Firenze 1424, 1425 – Siena 1425*, edited by Dionisio Pacetti (Siena: Cantagalli, 1935), 168, "...el bianco luce e risplende: cosi l'anima giusta luce e risplende de la grazia de Dio." See Gentilini, *I Della Robbia. La scultura invetriata*, vol. 1, 103-104.

light.[231] Intended for a public audience, Bernardino's sermons presented easily understandable ideas, supporting the claim that this symbolism was accessible and familiar to a wide audience.

Giancarlo Gentilini cited Saints Bernardino of Siena and Antoninus of Florence to support and expand an earlier interpretation of Luca's white glaze advanced by Carlo Del Bravo.[232] Del Bravo was, as previously noted, the first to examine the concepts of light and purity in relation to Luca's white figures; he had used a treatise on light, *De lumine*, by the Florentine humanist Marsilio Ficino, to associate these qualities with the whiteness and reflectivity of Luca's glaze. In particular, Del Bravo stressed Ficino's idea that white was the color of light made opaque and his description of the transcendent, incorporeal nature of light. Del Bravo applied these ideas to what he saw as a "late" period in Luca's *oeuvre*, characterized by fluid modeling which favored incorporeal, optical values over the tactile appeal of Luca's earlier classicism.[233] In contradistinction to Del Bravo's thesis, Gentilini identified new sources that were earlier in date, which anchor the association between light and white in a popular religious context and apply to all of Luca's glazed works.

The tension between corporeality and immateriality that guided Del Bravo's division of Luca's *oeuvre* into two periods—early (1440-1475) and late (1475-1482)—can, however, be profitably realigned with the distinction between the light effects described by Cennini, Alberti, and Ghiberti. Made in one piece, the uniformly white surfaces of Luca's Innocenti *Virgin and Child* register gradations of light with an effect

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[231] For white as a symbol of purity see Gentilini, *I Della Robbia. La scultura invetriata*, vol.1, 38, who quotes the following association proposed by Antoninus of Florence: "albedinem puritatis: quia candidus"
[232] Gentilini, *I Della Robbia. La scultura invetriata*, vol.1, 38, 103-104.
[233] Del Bravo, "L'umanesimo," 14-28.

similar to that of marble and akin to painterly modeling. In contrast to Ghiberti's examples from the Third Commentary, all of the forms are clearly visible. Yet, as with the gems, luster shines on the sculpted surfaces even more brightly than highlights. The edges of these lustrous areas show sharply against the white, breaking the shape-revealing continuum of light (figures 29, 30). These clear boundaries underscore the distance between the white *color* and the actual brilliance of light, and Ghiberti's text supports the hypothesis that this difference would be legible. The white glaze thus offers three competing representations of light. White is firstly a color-symbol, conveying an association with light sanctioned by religious tradition. Next, the all-white surfaces present an open field for highlights and shadows that reveal light as a natural phenomenon. Finally, luster evokes the intense brightness of a direct light source.

This visible difference in types and intensities of light could profitably invoke discourse about the ontology of light, already present in Christ's declaration, "Ego sum lux mundi." These words refer to the role of Christ as God's emissary, sent in human form to show God to men. He comes as a "light" that men may see, veiling his own divinity. But the verse also summons up the splendor of that divinity, revealed with blinding brightness in the Transfiguration. The degrees of light on the glazed surfaces may therefore ultimately comment on the terms of reference inherent to the sculpture. It makes light visible as a symbol of holiness, but because it does so in steps of growing intensity—from color to highlight to luster—it may also suggest that true Light is even brighter and is reflected only partially in the sculpture. The levels of light evoked by Christ as the Lux Mundi and effects of light on white glaze resonate with the content of a laud by Jacopone da Todi, a late-dugento Franciscan friar. A book of his lauds was in fact

owned either by Luca himself or his great-nephew (also named Luca di Simone).[234] Jacopone remained popular in the fifteenth century and thus presents an interpretation of light that would have been well-known at the time. In the laud "O Amor, devino Amore," he writes:

> ... / Amor, che dài luce / ad omnia c'à luce //
> la luce non n'è luce, / lum'è 'ncorporeato. //
> Luce lumentiva, / luce demustrativa, //
> non vene all'amativa / chi no n'è en te lumenato / ...[235]

This laud assigns to God, represented as the embodiment of love, Amor, the role of bestowing light upon creation. The verses pun on two different words for light—*luce* and *lume*—saying that God gives light (*luce*) which is not just light (*luce*), but rather the embodiment of a superior light (*lume*): that is, Christ, the light of the world (the adjective *incorporeato* invokes the Incarnation). This play on words suggests an anagogical understanding of light which, this chapter argues, was also at play in the different effects of light on the surface of Luca's sculptures.

The tension between earthly and spiritual presence in the simultaneous light effects of modeling light and luster can reflect the duality of the Christ and the saints as intercessors who are approachable at the same time that their holiness removes them from humankind. It underscores the novel expressive qualities of Luca's glazed terracotta which allowed him to picture lifelike naturalism and transcendent glory together without sacrificing one to the other.[236] A similar duality between the earthly and heavenly resides

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[234] A copy of Jacopone da Todi's *Lauds* today in the Bibliothèque Nationale, Paris (ms.it. 1037) bears an inscription of possession which reads: "questo libro è di Lucha di Simone della Robbia"; see Gentilini, *I Della Robbia. La scultura invetriata*, 82, note 16. The same inscription of ownership marks a copy of Dante's *Vita Nova* and *convivio*, which survives today at the Biblioteca Marciana, Venice (ms.it. X, 26); see ibid., 82, note 17. However, Luca's great-nephew, also named Luca di Simone di Marco (1484-1519), was a humanist, philologist, and poet, and so this inscription may potentially refer to him.
[235] Jacopone da Todi, *Laude*, edited by Gianni Mussini (Casale Monferrato: Piemme, 1999), 90-91.
[236] See Collareta, "Un percorso coerente," 2-5.

in the words of the Virgin and Child. Christ's words reflect his supernatural glory and are located high in the composition, on a white banner that participates in the sculpture's brightness. The Virgin's words are instead on the blue base, nearer to the viewer and befitting their content: "for he hath regarded the lowliness of his handmaiden." The Virgin spoke thus to her cousin Elizabeth in the Magnificat at the *Visitation*; both women were pregnant, and Elizabeth's unborn child, John the Baptist, leaped in recognition of the Christ as the Virgin's unborn child. The Virgin thus praised God for the role he gave her in the world's salvation. Her humility serves as a model for the sculpture's audience, and her whiteness alongside Christ aligns with Bernardino of Siena's assertion that "the virtuous soul is radiant and shines with the grace of God."

The gilding that Luca used to decorate some of his sculptures also contributed to the juxtaposition of lifelike description and splendid abstraction in his white glazed figures. A *Virgin and Child* (called the Genoa Madonna, figure 31) at the Detroit Institute of Arts shows the effect such gold decoration could have. In the Genoa Madonna, gold is used as if to color the hair and haloes of the mother and infant, and to render the thread of embroidered patterns that line the edges of their garments. Yet, like white glaze, gold does not play a single consistent visual role in the sculpture. Its appearance changes depending on the angle it is viewed from, so that the gold is dark when seen from one directions and brilliant from another. Alberti recognized gold's fickle appearance when he advised against its use in *Della pittura*. He wrote, "…when done in gold on a flat panel, many surfaces that should have been presented as light and gleaming, appear dark to the viewer, while others that should be darker, probably look brighter."[237] Thus the

[237] Alberti, *On Painting*, 85. "E ancora veggiamo in una piana tavola alcune superficie ove sia l'oro, quando deono essere oscure risplendere, e quando deono essere chiare parere nere," Rocco Sinisgalli, *Il*

gold can read as the darkness of hair and embroidery, or it can cultivate the same surface sheen that the white glaze produces. Although arguing against its use, this passage reveals an awareness of the material properties of reflective media.[238]

Ultimately, to reflect on and take the balance between these qualities of gold and white glaze, oscillating between a naturalistic description of a volumetric body and the resplendence of shining surfaces and light, is to engage the anagogical model of devotional reflections suggested by Geraldine Johnson. In describing a viewer's possible response to a glazed terracotta relief by Luca della Robbia, she wrote:

> By the flickering light of candles, the figures of the Madonna and Child in Luca's Buffalo relief could begin to dissolve into a series of changing light effects dancing across the glazed surfaces of the composition thereby distracting the eye from the realities of body masses and the textures of clothes and skin.[239]

Johnson's description centers on the same tension between volume and surface examined in the writings of Cennini, Alberti, and Ghiberti. In the larger passage from which this quotation is drawn, she suggests that uncolored low reliefs in marble, bronze, or clay had an abstracting effect on their subject which was similar to that of Luca's white glazes. Objects like these could appeal to more sophisticated patrons who might view their abstraction as a prompt to meditate on truths beyond the material world; the effect on the viewer is, thus, quite different from that of naturalistically painted terracotta or wood sculptures which present their subject in realistic terms. The texts of Cennini, Alberti, and Ghiberti testify to the sensitivity to light conditions that a contemporary viewer might bring to Renaissance sculpture: conditioned to see gradations of light as descriptive of three-dimensional form in fifteenth-century painting, but equally cognizant of the appeal

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nuovo "De pictura" di Leon Battista Alberti = The new "De pictura" of Leon Battista Alberti (Rome: Edizioni Kappa, 2006), 240.

[238] For the period's declining use of gold in painting see Lois Heidmann Shelton, *Gold in Altarpieces of the Early Italian Renaissance: A Theological and Art Historical Analysis of its Meaning and of the Reasons for its Disappearance* (Yale diss., 1987).

[239] Johnson, *In the Eye of the Beholder*, 277-278.

of mobile lustrous areas which emphasized surface qualities and lent preciosity to the work.

Section Six: Lighting Glazed Terracotta at Saint Mark's in-the-Bowery, New York

Ghiberti's insistence that light shapes perception makes a reconstruction of the original lighting conditions for Luca's sculptures a crucial, if also challenging, task. The first decade of production of Luca's glazed terracottas were set in interior spaces, on the walls of private homes and in dim church spaces lit by candles. The Innocenti *Virgin and Child* is thought to have decorated an altar, though its history is undocumented before 1863.[240] Today instead the sculptures are usually lit artificially in museums and churches. In order to address this issue, this section presents the results of an experiment unprecedented in Della Robbia scholarship: taking photographs of a nineteenth-century imitation Della Robbia work by candlelight.[241] The experiment was carried out in March and May 2015 before a large glazed terracotta roundel of the *Annunciation* (figure 32), an imitation of Della Robbia sculpture made in the early twentieth century and installed the church of St. Mark's in-the-Bowery in New York by 1914.[242] The roundel, hereafter called the Bowery *Annunciation*, reproduces the Virgin and Gabriel figures from Andrea della Robbia's circa 1475 *Annunciation* altarpiece (figure 33) in the Niccolini Chapel at

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[240] Luciano Bellosi, *Il Museo dello Spedale degli Innocenti* (Milan: Electa, 1977), no. 4, 226; Pope-Hennessy, *Luca*, cat. no. 33, 253

[241] There is only one precedent of which I am aware: E.H. Gombrich, in his analysis of "Light and Highlights" in *The Heritage of Apelles: Studies in the Art of the Renaissance* (Ithaca, NY: Cornell University Press, 1976), examined the different effects that a single lighting source could have on objects of different textures. To make his point, he used two photographs of a single still life, taken from different angles, in which a hurricane lamp was used to light cloth, mirror, a glass, and a ceramic replica of the bust of a young man by Andrea della Robbia. Gombrich did not focus his analysis on the glazed sculpture, however.

[242] "The Lion of St Marks," December, 1914, p. 7. I thank Marietta Cambareri for making me aware of this sculpture and Roger Jack Walters, Archivist of St. Mark's in-the-Bowery, for his enthusiasm and accommodation in allowing me to photograph the work under candlelight on two occasions.

La Verna. The authorship of the Bowery *Annunciation* is unknown, but its glaze is of very high quality.[243] Consonant with Luca's work in color and technique, it is a good surrogate for an original Della Robbia.

The experiment took place at two different times of day, first in late morning on a sunny day, and then at nightfall, in order to simulate the variety of conditions imposed on Luca's glazed terracotta sculptures in a single day.[244] The Bowery *Annunciation* is immured opposite a bank of tall windows in a large ground floor room. The room is bright during the day without artificial illumination on account of the windows. The evening session thus captured the strength of the candlelight as daylight dwindled and, ultimately, disappeared. In the end, three factors emerged as crucial to the appearance of the *Annunciation*: the amount and quality of natural light present in the room, the proximity of the candles to the sculpture, and the number of candles used. The first factor was the most important because it dictated what placement and number of candles would produce the strongest effect. Bright daylight required several candles to be very close to the sculpture in order to significantly change the appearance of its white glaze. When daylight was limited or absent, however, even a single candle had a transformative effect.

The glazed surfaces of the Bowery Annunciation were sensitive to the color of the candles lit before them, causing an appreciable change to the cast of the white glaze in the day and at night. As to be expected, the effect was more dramatic at night when other

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[243] High quality glazed reproductions of original Della Robbia compositions were made by the Ginori and Cantagalli firms in Italy in the nineteenth-century; see Livia Frescobaldi Malenchini and Oliva Rucellai, eds., *Il Risorgimento della maiolica italiana: Ginori e Cantagalli/The Revival of Italian Maiolica: Ginori and Cantagalli* (Florence: Edizioni Polistampa, 2011). Ulisse Cantagalli made casts of the original altarpieces at La Verna in 1899, suggesting one possible source for the mold from which the Bowery sculpture was made, Marietta Cambareri, "Della Robbias in the New World," in *Della Robbia: Sculpting with Color in Renaissance Florence*, by Marietta Cambareri with Contributions by Abigail Hykin and Courtney Leigh Harris (Boston: MFA Publications, 2016), 126-127.

[244] During the experiment a group of two to seven candles was placed approximately one and a half feet in front of the sculpture, at varying heights. All of the room's artificial lights were extinguished.

sources of ambient light had been eliminated. However, in both cases the flame of the candles lent a warm, pinkish yellow glow to the white figures. The effect was both general, creating a warm, rosy cast throughout the vicinity of the candles, and particular and intensified in areas of luster which presented a concentration of golden pink. A similar difference in the white color of the glaze also occurred under natural light, when no candles were lit: the generally bright whites of the figures was punctuated by the intense light of the lustrous marks, but in both cases that light was cooler than candlelight, and it possessed a bluish tinge. This cooler blue cast is typical of Della Robbia white glazes when seen under the diffuse natural light of the sun.

When viewed in bright daylight, the golden light cast by the candles notably affected the glaze but within a somewhat limited range (figures 34, 35). The strongest warmth and glow was concentrated in the figures' lower bodies, near the candles, leaving the white glaze of their upper bodies to the influence of ambient sunlight and thus a much cooler tonality. Yet the candles did exercise a degree of influence even in these upper zones, for close examination reveals delicate golden pick luster configurations scattered across the upper body and faces of both the Virgin and Gabriel. Thus the flame reflected strongly in luster points, but not in a more general way, on the surfaces of the sculpture that are farthest from the flame. This phenomenon was also visible on the surfaces of the sculpture (figure 36) when the candles were moved forward several feet. The entire sculpture returned to a cooler tonality, which at first glance appeared identical to its condition under natural light. Yet here again, closer looking reveals small areas of golden luster across the surfaces of the Virgin and Gabriel, concentrated in the lower bodies but also present in the upper regions.

At night (figure 37) candlelight powerfully shaped the appearance of the entire sculpture. The golden cast of light was not limited to areas directly adjacent to the candles, but suffused the Virgin and Gabriel in their entirety. Yet a difference remained between the lower and upper parts of the figures when the room became very dark, with all ambient light eliminated. In those conditions, the lowest parts of the figures nearest to the light showed brightly and harbored almost no shadow, while dramatic contrasts between light and shadow played over the figures' upper bodies and faces. Thus the legs and lower torso of the figures did not show a gradation of light that revealed form, while the chest, shoulders, and heads of the figures were modeled by a strong contrast between deep shadow and highlight. When the room became completely dark, even one candle colored the entire sculpture with its warm light, though it also permitted more shadow and did not light the sculptures' lower regions as completely as the seven candles did.

This experiment demonstrates that the modeling shadows that Cennini and Alberti valued as a means to make three-dimensional form visible disappeared in the night setting. As the sole source of light for the sculpture, the candles cast strong contrasts of highlight and shadow onto the farther areas of the figures, resembling the directional lighting used to such dramatic effect in the later paintings of Caravaggio. This proves the significance of a moderate light source—here created by diffuse daylight or candlelight at dusk—for making three-dimensional modeling visible though the fall of light and shadow. Cennini had made this point in the *Libro dell'arte*, recommending a temperate light for the figures, while Alberti suggested that the artist squint his eyes in order to simplify the areas of light and shadow for copying. Yet, as Ghiberti pointed out and the experiment at Saint Mark's in-the-Bowery has confirmed such steady conditions are

available sometimes but not always, and the glazed surfaces of the sculptures are ever-ready to register changes in the lighting conditions around them.

Section Seven: Lighting Glazed Terracotta in Renaissance Italy

Lighting in Ecclesiastic Settings

The different appearances of the Bowery *Annunciation*'s white glaze under natural light and candlelight establish the potentially varied appearance Luca's sculptures would have had in indoor and outdoor locations in fifteenth-century Florence and its environs. Luca's earliest glazed terracotta works were placed indoors, as John Pope-Hennessy has pointed out in rebuke to the view, rooted in Vasari, that the material was invented to be suitable for outdoor locations.[245] The earliest use of the medium outdoors, Luca's 1450 glazed lunette for San Domenico in Urbino, only appeared after one decade of production. The interior spaces occupied by the glazed works before then were sometimes dim and lit, when necessary, by candles or oil lamps, similar to the conditions simulated in the experiment at St. Mark's in-the-Bowery. After 1450, the sculptures' potential relation to light changed to include an outdoor environment of cooler, more diffuse light. The following section focuses on how glazed sculptures would have been lit within an interior space, distinguishing between two types of locations for the objects: ecclesiastic and domestic. In both situations, the white glaze's change of color, from a cool to a warm white, under flame-light might be imagined as a visual means of activating the figures.

[245] John Pope-Hennessy, *Luca della Robbia*, 36-37 conclusively refuted Vasari on this point.

Lighting for sculptures associated with church altars was dictated by liturgical protocol. Candles on the altar were lit during the duration of all mass celebrations.[246] In 1448, Luca made a pair of *Candle-bearing angels* (figure 6, 7) to hold such altar candles; they were commissioned for the Saint Stephen Chapel at the Florentine cathedral, which was refitted during those years to house the Sacrament tabernacle.[247] The figures' change in appearance under candlelight would therefore have corresponded with the sacred rite of mass. This same change in lighting would have also affected other works by Luca originally displayed above an altar, as the Innocenti *Virgin and Child* may have been. For instance, Luca's glazed ceilings in the Crucifix Chapel (1447-49) and Cardinal of Portugal Chapel (1461-62), both at San Miniato al Monte in Florence, and the Chapels of the Crucifix and of the Virgin (c. 1466) at Santa Maria a Impruneta were set above altars in confined spaces and would have been affected by their light.

The appearance of Luca's glazed terracotta also fluctuated in relation to other light sources in their ecclesiastic environments. For example, the glazed terracotta coffers and scales with which Luca decorated the barrel vault of the Crucifix Tabernacle (figure 38) at San Miniato al Monte received bright lighting from a special effect, coordinated with the summer solstice. The medieval builders of the church placed its clerestory windows such that the natural light entering them on the summer solstice casts a procession of circular beams down the central nave aisle. The beams begin at the foot of

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[246] For the rise and liturgical function of altar candles, see Joseph Braun, *Das christliche Altergerät in seinem Sein und in seiner Entwicklung* (Munich: M. Hueber, 1932), 492-530; also see Marchand, "Material Distinctions," 167.

[247] Luca's nephew, Andrea, would later be employed in the 1480s to make a second pair of candle-bearing angels, now lost, for Santa Maria del Fiore. A number of candle-bearing angel pairs made by the Della Robbia shop survive and many are published in Jean-René Gaborit and Marc Bormand, eds., *Les Della Robbia. Sculptures en terre cuite émailée de la Renaissance italienne. Musée National Message Biblique Marc Chagall, Nice, 29 juin - 11 novembre 2002; Musée National de Céramique, Sèvres, 10 décembre 2002 - 10 mars 2003* (Paris: Réunion des Musées Nationaux, 2002).

the aisle, near an inlaid zodiac wheel, and move steadily toward its apex, where they brightly illuminate the multicolored glazed decorations of the tabernacle chapel.[248] Its position thus makes the tabernacle appear to be the destination of the moving light. In a second example, Luca's *Resurrection* and *Ascension* lunettes (1442-1451), placed over the sacristy doors in the Florentine cathedral, flanked the high altar and were at times lit by candles mounted atop the altar enclosure.[249]

Private individuals might also shape the type of lighting present within church settings. Wealthy patrons could endow continuously burning lamps to adorn sacred shrines and images. This occurred for Luca's glazed *Visitation* (c. 1445, figure 9), a figure group comprised of the Virgin and her cousin, Elizabeth, for the church of San Giovanni Fuorcivitas in Pistoia, where it was associated with the Compagnia of Santa Elisabetta. In 1445, the widow of Iacopo di Neri de' Fioravanti, named Monna Bice, endowed oil for a lamp to burn "day and night" in perpetuity before the Virgin and Elizabeth.[250] In a similar instance, the eminent Florentine patron Giovanni Rucellai (1403-1481) endowed two continuously-burning lamps for his Holy Sepulcher at San

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[248] The phenomenon continues to this day, and I have witnessed it in person. For a published record, see Simone Bartolini, *Sole e simboli: gli zodiaci della Basilica di San Miniato al Monte e del Battistero di San Giovanni a Firenze/Sun and symbols: the zodiacs in the Basilica of San Miniato al Monte and in the Baptistry of San Giovanni in Florence* (Florence: Polistampa, 2013).

[249] See discussion in Chapter Four.

[250] "voluit in perpetuum die noctuque ardere debeat unam lampadem ad onorem Dei et Virginis Marie coram figures Virginis Marie sancte Elisabet visitationis earum, in ecclesia S. Johanni forcivitas," Pope-Hennessy, *Luca*, 238.

The document from which these lines are cited stood at the center of a fierce debate about the sculpture's attribution in the early twentieth-century. It was first published by Pèleo Bacci in 1906, *Il gruppo pistojese della Visitazione, già attributo a Luca della Robbia; note d'archivio* (Florence: Tipografia Domenicana, 1906), but Bacci did not believe that the figures of the Virgin and Elizabeth referred to in it were those of the present glazed *Visitation* group, which he dated to the turn of the sixteenth century. Allan Marquand had already suggested that the *Visitation* be attributed to Luca della Robbia on the basis of style in 1894, "The Madonnas of Luca della Robbia," *The American Journal of Archaeology and of the History of the Fine Arts* Vol. 9, No. 1 (1894): 1-25. (The group had previously held various attributions, to the Della Robbia generally, to Andrea della Robbia specially, and also to a local Pistoiese painter, Fra Paolino.) Marquand reprised the attribution to Luca in light of Bacci's essay in 1907 and 1914, Allan Marquand, "The Visitation of Luca della Robbia at Pistoja," *American Journal of Archaeology* XI (1907): 36-41; Marquand, *Luca* (1914). It was widely accepted thereafter and still stands today.

Pancrazio.[251] The lamp endowed by Monna Bice is the only such object associated with Luca's glazed sculptures. Her donation ensured the white figures of the Virgin and Elizabeth were always lit by some degree of flame, lending a golden cast whose strength would vary in relation to other lighting conditions in the church. The original location of the *Visitation* still remains unclear; it has been universally assumed that it was made for the altar of the Compagnia di Santa Elisabetta at San Giovanni in fuorcivitas, but the early documents do not confirm this.[252] The statue group was certainly located on an altar by the early sixteenth century, when it would also have been lit by candles during mass.

Individuals with less capital could place a devotional candle, rather than an endowed lamp, before venerated shrines and images in a church. Richard Trexler has described the role of such donations as a "frame" for the religious image, a visual manifestation of its social power and prestige. According to this interpretation, placing candles before an image both generated and affirmed its potency.[253] Indeed, at the turn of the fifteenth century the Florentine preacher Giovanni Dominici lamented a popular preference for images made of precious materials like gold and silver over "old smoky" ones, proven by the greater number of candles lit before the former.[254] The same practice of leaving votive candles as a testament of veneration is evoked in the central panel of a later altarpiece (figure 39) by the Venetian painter Carlo Crivelli. It shows a slim taper

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[251] Richard C. Trexler, *Public Life in Renaissance Florence* (New York: Academic Press, 1980), 93, note 27.

[252] The 1445 document states only that the figures of the Virgin and Elizabeth were located "in ecclesia S. Johanni forcivitas," and does not say they stood on an altar. The first document (of those published by Bacci) to specifically name an altar in association with the Compagnia di Santa Elisabetta is from 1474, Bacci, *Il gruppo*, 5-6, while sixteenth-century records confirm an image of Elizabeth to be located on the altar, Bacci, *Il gruppo*, 7-8. More research is needed to determine the original location of Luca della Robbia's glazed Visitation group.

[253] Trexler, *Public Life*, 92-94.

[254] Giovanni Dominici, *Regola del Governo di Cura Familiare*, edited by Donato Salvi (Florence: Angiolo Garinei Libraio, 1860), 133.

hovering before the platform on which the saints are located, perhaps in order to solicit such an offering from the viewer. As with the oil lamp of Monna Bice, votive candles set before an altar act as physical deposits of private worship, rather than cult activity, within ecclesiastic spaces.

Lighting in Domestic Settings

Beyond the private worship carried out within a church setting, devotions also took place within the home in this period. Luca produced many glazed sculptures of the Virgin and Child to aid domestic devotions, though few of them have a secure provenance.[255] They are of relatively small size and depict the Virgin and Child, a favorite theme for devotional works in all media.[256] A representative example of this sculpture type is the *Madonna of the Apple* at the Bargello Museum in Florence (figure 40).[257] Records from the fifteenth and sixteenth centuries confirm that such glazed terracotta reliefs did hang in private homes of the period. For example, the inventory of the Medici family palace on the Via Larga of 1492 lists two glazed sculptures of the Virgin "di mezzo rilievo invetriata."[258] A year later, in 1493, the memoirs of Andrea Minerbetti record his possession of a glazed sculpture of the Virgin, "i nostra donna della

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[255] See Gentilini, *I Della Robbia. La scultura invetriata*, vol.1, 101-104, for the devotional use of glazed terracotta sculptures of the Virgin and Child, and ibid., 32-39, for a compelling discussion of the devotional use of such images in a variety of media; for the devotional significance of glazed sculptures in Le Marche, see the forthcoming dissertation by Zuzanna Sarnecka, "The Della Robbia and Domestic Maiolica: Glazed Devotional Sculpture in the Marche," (University of Cambridge).

[256] The size and subject of these reliefs would also have suited them for use above a small church altar. We must therefore recognize both uses as possibilities for the Virgin and Child sculptures of uncertain provenance.

[257] This is the only glazed sculpture known today with a secure provenance from the Medici collections, Pope-Hennessy, *Luca*, 254. As such, it is possible that it is one of the two glazed reliefs mentioned in the 1492 Medici inventory; see below.

[258] The two relevant inventory entries, cited in Attilio Schiaparelli, *La Casa fiorentina e i suoi arredi nei secoli XIV e XV* (Florence: G. C. Sansoni, 1908), 181-182, read: "Una Nostra Donna di mezzo rilievo invetriata in su una ghocciola fitta nel muro — f.3," and "uno colmo di tabernacolo di legname con piú ornamenti d'oro, alto braccia 4½, largo braccia 2 2/3, dentrovi una Nostra Donna a sedere col bambino in collo, di mezzo rilievo et invetriato — f.30."

robia murata."[259] In 1524, the podestà Alessandro de Segni was informed by his agent of the availability of two glazed sculptures of the Virgin from the Della Robbia shop, from which he could choose in order to decorate the main chamber of his castle in Lari.[260] Earlier, in 1464, the *Ricordanze* of Neri di Bicci also included a record for a "Nostra Donna invetriata," property of the merchant Giovanni Benci, to be given a tabernacle frame under the direction of Giuliano da Maiano.[261]

No representation of a Della Robbia devotional work in a domestic interior exists until the nineteenth century. However other sources offer insight into their use and appearance in that context. Vittore Carpaccio's 1495 painting of the *Dream of Saint Ursula* (figure 41) shows a bed chamber with an image—presumably religious given its tabernacle frame—hanging on the wall with a candle holder extended before it. A woodcut illustration of "The Young Lover at his Writing Table" (figure 42) from the *Hypnerotomachia Poliphili*, printed at the turn of the sixteenth century, also shows a devotional image hung on the wall of a private home with a sconce mounted below it to hold a candle. Both the woodcut and painting suggest that devotional images were indeed illuminated by candles in the home. Wax was not inexpensive during this period and most homes, and even courts, used tallow lamps that burned animal fat for ordinary illumination, while the trade and use of beeswax was the special province of the church.[262] Perhaps, then, the use of wax candles themselves within the home also signified the importance of the image.

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[259] Schiaparelli, *La Casa Fiorentina*, 184.
[260] The agent promised to have drawings of both made and sent to facilitate the decision; see F.W. Kent, "Gleanings from the Florentine Archives," *Australian Journal of Art History* 2 (1980): 47-49.
[261] Gentilini, *I Della Robbia. La scultura invetriata*, vol. 1, 170.
[262] Marchand, "Material distinctions," 167.

Domestic devotions in front of images could also mimic the public rites performed before an altar. An evocative description of the domestic use of images of the Virgin and Child appears in the writings of the early-fifteenth-century Florentine preacher Giovanni Dominici. It occurs in his *Rule of Family Governance* (*Regola del governo di cura familiare*, c. 1402), a letter of advice written to a Florentine mother, Bartolomea degli Albizzi.[263] In a section concerned with children's upbringing, he proposes they "play" before an altar—furnished with an image—set up at home, in order to learn the proper rituals and use of such objects. The children should light candles and burn incense before the image, ring bells, keep the altar swept clean, as well as make a garland to crown Christ.[264] All of these activities partake in Trexler's notion of the frame, for such displays of honor acknowledge and simultaneously renew the power of the image. By proposing such actions as a form of "play," Dominici's text suggests that Florentines learned the significance of these acts, including the lighting of candles, from an early age.

Section Eight: Conclusion

This chapter has considered the white surfaces of Luca della Robbia's glazed terracotta figures as the site of manifold shifting light effects. In this characterization it draws on a growing body of recent literature on white monochromy which has discarded old misconceptions of such a visual strategy as homogenous and static. Although few fifteenth-century sculptures were "purely" white, most having at least small decorations

[263] For the importance of Dominici's text in relation to art for a domestic context, see Jacqueline Marie Musacchio, *Art, Marriage, & Family in the Florentine Renaissance Palace* (New Haven and London: Yale University Press, 2008), 208-210.
[264] Dominici, *Regola*, 145-146.

added in gold or paint, a monochrome ideal did develop during this period. It is evidenced by figures, like Luca's, which read as predominantly white despite those decorative details. This dissertation argues that such all-white bodies were intimately associated with changing artistic attitudes toward light in the period, a claim supported by a review of fifteenth-century artists' treatises. Because of their sensitivity to light, white bodies offered painters a site for studying the effects of light and dark which lent *rilievo*, or the impression of three dimensions, to their figures. Yet this very quality of sensitivity also led white figures—especially those by Luca della Robbia with their reflective ceramic glaze—to respond with continually shifting appearances to the multiplicity of lighting conditions available within their environments, even over the course of a single day.

Chapter Three: Color

Section One: Introduction

The decision to paint a statue with colors is often understood to reflect the desire for a lifelike appearance. When Luca della Robbia painted green the stalks and leaves of the plants in his *Madonna and Child* at the National Gallery in Washington, DC (figure 43), or gave yellow hair to the figures in his *Virgin and Child* at the oratory church of San Tommaso d'Aquino in Florence (figure 44), he used colors that generally reflect the appearance of those objects in the natural world. The manner of their coloring therefore reveals—to a certain degree—a naturalistic impulse. However, even in cases when an artist uses hue to reflect reality (e.g., the hair is yellow, the leaves are green), his use of tone and saturation (e.g., what *kinds* of yellow and green are used?) may productively and simultaneously engage other, less naturalistic, ideals. The colored glazes used by Luca and subsequent members of the Della Robbia family workshop have long been recognized to be extremely bright, their brilliance seemingly intensified by the fall of light on the sculptures' surfaces. In the nineteenth century this chromatic intensity was largely thought unsophisticated, catering to a popular taste. Scholars in the last half-century have approached the question in a much more nuanced fashion, however, agreeing that the glazed colors do not submit easily to illusionistic aims and proposing that they are to be valued instead for their splendid brilliance, evocative of precious and semi-precious materials like gems, glass, enamel, mosaic, and porcelain.[265]

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[265] Carlo Del Bravo pioneered this line of interpretation in "L'umanesimo di Luca della Robbia," *Paragone* 24, 285 (1973): 3-34. It has been followed by Giancarlo Gentilini in his authoritative monograph on the Della Robbia family, *I Della Robbia. La scultura invetriata nel Rinascimento* (Milan: Cantini, 1992); and by the scholars who contributed to his two subsequent exhibition catalogs: Giancarlo Gentilini, ed., *I Della Robbia e l'*arte nuova *della scultura invetriata* (Florence: Giunti, 1998) and Giancarlo Gentilini, ed., with

This chapter agrees with that assessment but calls for an even more precise vocabulary of hue, tone, and saturation that can be applied systematically to Luca della Robbia's sculptures in glazed terracotta. In proposing this vocabulary, it creates a tool for nuanced examination of the manner in which Luca encouraged a sense of splendid brilliance in his work, evoking the precious materials listed above, but that simultaneously allows for the aesthetic concerns that moved him to sometimes create a more naturalistic effect in his figures and settings. Further, this chapter identifies traditions of color-use that guided Luca's approach to the subject, drawing from treatises written by fourteenth and fifteenth century artists including Cennino Cennini, Antonio da Pisa, and Leon Battista Alberti, as well as the longstanding and largely anonymous written tradition of *ricettari* (recipe books). The colored glazes available to Luca were, ultimately, based on the same handful of mineral colorants that had been used for centuries, and even millennia, in the so-called arts of fire like glassmaking and ceramics. While those minerals had little overlap with the colorants favored by painters, painters' treatises are an indispensable resource in this chapter; in fact, a comparison of those sources with writings on glass art reveals similar guiding concerns about color distribution and juxtaposition. But the painters' treatises, and the modern literature on them, still offer the fullest exploration of color issues in the fifteenth century.

Guided by the concerns raised in the artists' treatises, this chapter begins with the "raw materials" of color in Section Two, reviewing the quality and geographic sources of the colorants used by Luca della Robbia. By their nature the raw materials dictate the

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Liletta Fornasari, *I Della Robbia. Il dialogo tra le Arti nel Rinascimento* (Milan: Skira, 2009). Carlo Del Bravo has continued to provide valuable and thought-provoking contributions to the subject in"Andrea Della Robbia, da giovane e da vecchio," *Artista* (1995): 58-71 and "Luca, Andrea, e Giovanni," *Artista* (2012): 158-169.

qualities and choices available to Luca in terms of the properties of hue, tone, and saturation that will be considered in Section Three. Where that section considers these formal qualities on an individual basis in relation to each of Luca's major glaze colors—blue, purple, yellow, green, and black—Section Four takes a broader look at how these colors are combined together in larger compositions. That section, and the chapter as a whole, concludes with four case studies of major works by Luca in which the alternation and brilliance of his color serve as focal points.

One final note about this chapter's sources: it incorporates new technical knowledge, made available by recent study, alongside its consideration of treatises and contemporary color theory in order to suggest what sort of choices Luca made about the pigment saturation and tin content of his glazes. Technical analysis has allowed study of the colored glazes used by Luca della Robbia and his heirs in the Della Robbia workshop to proceed far in the last twenty years. However, many of Luca's most interesting works from a coloristic perspective have not been subject to extensive lab-based study or to the mobile analysis made possible by new portable X-ray fluorescence technology. This is because they are large and remain in situ in original locations which are often hard to access; such works include the *Ascension* lunette at Santa Maria del Fiore, Florence; the ceiling of the Cardinal of Portugal chapel at San Miniato al Monte, Florence; and the vegetal frame of the Bishop Federighi tomb at Santa Trinita, Florence. In anticipation of their future technical study this chapter therefore suggests questions to be considered for Luca's works, in light of recent findings pertaining to later glazed works by Andrea della Robbia and his sons.

Section Two: Colorants

Colorants in Treatises and *ricettari* for Artists

Writings directed toward artists provide special insight into how color was evaluated and appreciated in the early- to mid-fifteenth century. They address a range of concerns, from the selection and preparation of pigments and materials, to the color composition of a finished work. Cennino Cennini's *Libro dell'arte* (c. 1395), Leon Battista Alberti's *Della pittura* (c. 1435), and to a lesser extent Lorenzo Ghiberti's *Commentarii* (c. 1450) will serve as valuable sources on the topic here as they did in Chapter Two. In addition, this chapter will draw on another important body of writings, which deal in particular with color: the *ricettari*, or recipe books. The primary form of written artistic knowledge prior to the fifteenth century, these books consist entirely of recipes, many but not all of which are for making colors. They can be regarded as compilations of chemical knowledge and therefore also include directions to treat health, beauty, and even moral concerns ("if you want to know whether a woman is loyal to you").[266] *Ricettari* color recipes can cover ambitious ground: painting, glass, mosaics, imitation gems, ceramics, and dyeing.[267] A group of fourteenth- and fifteenth-century recipe books for stained glass production fall within this category.[268] One of these in particular, a treatise written by Antonio da Pisa in the late fourteenth century, is

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[266] For guarantees of fidelity, see Gaetano Milanesi, *Dell'arte del vetro per musaico. Tre trattatelli dei secoli XIV e XV* (Bologna: Gaetano Romagnoli, 1864; Bologna: Commissione per i testi di lingua, 1968), 54.

[267] The classic source on this material is Mrs. Mary P. Merrifield, *Original Treatises on the Arts of Painting*, 2 vols. (London: John Murray, 1849; New York: Dover Publications, Inc., 1967). For a good recent survey of this manuscript type see Mark Clarke, *The art of all colours. Mediaeval recipe books for painters and illuminators* (London: Archetype Publications, 2001), which gives an inventory of four hundred treatises and calls for further research to expand the number of known manuscripts. That call was taken up in the searchable online database, "Colour Context. A Database on Colour Practice and Knowledge," maintained by the Max Planck Institute for the History of Science publishes dozens of new manuscripts. As of the site's last update, 600 manuscripts have been studied and 6,500 recipes transcribed.

[268] Milanesi, *Dell'arte del vetro*.

exceptional for addressing the aesthetics of color composition in addition to providing recipes for the glass itself.[269] The author of this manuscript, Antonio da Pisa, is likely the same artist documented at work at Santa Maria del Fiore in the late fourteenth century.[270] The detailed technical directions he offered thus stemmed from his direct experience as a practitioner of the art of stained glass. Though his treatise is remarkable in its precepts for color composition, very similar to those later offered by Alberti,[271] Antonio da Pisa's writings have not been widely incorporated in studies of fifteenth-century painting and sculpture.

Taken together, these surviving writings address color in terms of a consistent set of primary concerns: first, its derivation, as a pigment, from mineral or organic substances; second, its tonal modulation, typically by the addition of white and black, used to give a sense of relief; and third, its placement within a composition in order to create an overall effect of variety and contrast. The *ricettari* tend to focus on the first concern, the origin and preparation of a pigment, and also provide information about colors used to make light and dark marks that symbolize areas of light and shadow.[272] The writings of Cennini, Antonio da Pisa, and Alberti take up the three concerns to varying extents: Cennini focuses on the first and second concerns, Antonio da Pisa on the first and third, and Alberti on the second and third. Together these treatises provide a

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[269] Antonio da Pisa, *Il trattato di Antonio da Pisa sulla fabbricazione delle vetrate artistiche (secolo XIV)*, edited by Salvatore Pezzella (Perugia: Umbria Editrice, 1976). Only one copy of the treatise survives today; it is believed to be a later copy and not Antonio's original manuscript.

[270] Takuma Itō, *La vetrata nella Toscana del Quattrocento* (Florence: Leo S. Olschki Editore, 2011); Itō says that another individual with the same name has also been identified working in Pisa, but the treatise is usually associated with the *vetraio* Antonio da Pisa who worked at Santa Maria del Fiore.

[271] As noted by Itō, *La vetrata nella Toscana del Quattrocento*.

[272] The process of making these marks was called *matizare* (for light marks) and *incidere* (for dark marks). These took the form of opaque, linear brushstrokes over the base color, and their placement was dictated by a set formula rather than direct observation of light in nature. See Paul Hills, *The Light of Early Italian Painting* (New Haven and London: Yale University Press, 1987), 19-24.

basis of starting guidelines for an examination of Luca's use of color in his glazes that may have been familiar to or undertaken by his contemporaries. Few early writings directly discuss the application of color to sculpture, likely because the recipes intended for painters would have served for coloring three-dimensional objects as well. Some helpful information on this subject will however be provided, as in Chapter Two, by Ghiberti's *I Commentarii*.

Glaze Colorants used by Luca della Robbia

Minerals and sources

Pigment recipes formed the backbone of writing on color directed toward artists prior to the fifteenth century. The preeminent function of *ricettari* over the course of hundreds of years was to compile color recipes to be used in painting and in the arts of fire: glass, mosaic, enamel, even pottery. Cennini likewise gives instruction for the selection and preparation of pigment materials in Section II of the *Libro dell'arte*,[273] but departs from the *ricettari* tradition in his systematic organization of these and many other recipes within a larger set of skills and tasks that comprise the painter's livelihood. He is also more consistent in discussing how the lights and darks should be applied in order to model the figures and objects at hand. Less than half a century later, in his treatise *Della pittura*, Alberti deliberately chooses not to engage this recipe tradition, explicitly stating that his discussion of color was "not after the manner of the architect Vitruvius as to

[273] Cennino Cennini's *Libro dell'arte* is organized into more than one hundred and fifty chapters which typically record a recipe or describe a technique. Cennini's treatise is of such importance precisely because its scope extends much further than that of previous texts. It is organized in recipe format (relatively short sections often titled "how to" and directed toward a specific "step" in the process), but it organizes these recipes into a larger, mostly coherent system. That system progresses from drawing (and its attendant materials) to painting on panel and wall (and the attendant materials and preparation), and finally to a variety of decorative concerns—modeling in gesso on panel, gilding, certain representational challenges (painting a dead man, painting water), and a number of 'other' techniques: painting on cloth, working with glass and mosaic, casting from life.

where excellent red ochre and the best colours are to be found," but rather would deal with color composition, a subject taken up in Section Four of this chapter.[274] Yet Alberti's sense of a need to clarify that he will not discuss raw materials confirms his awareness that such an approach was expected on the subject of color. This section therefore reviews the nature and geographic sources of the colorants used in Luca della Robbia's glazes; it does so on the basis that knowledge of the raw materials and processing techniques used to make pigments appears repeatedly in period treatises as a fundamental concern of color use.

The most important mineral for Luca's work is cassiterite, or tin dioxide, which gives his glaze its white color and opacity as discussed in Chapter One. The best quality tin in this period was obtained from Cornwall, England, and Italian merchants were in fact its foremost traders in the fourteenth and fifteenth centuries.[275] In his treatise on the arts of fire, the *Pirotechnia* printed in Venice in 1540, the Sienese metallurgist Vannoccio Biringuccio testified to the continued importance of this source for Italian ceramic production in the sixteenth century. He reports: "the best and most abundant [tin] that is found in the provinces of Europe is that which is mined in England," but adds that "I have also heard that it is found in certain places in Flanders, in Bohemia, and in the Duchy of Bavaria."[276] In his c. 1559 treatise *The Three Books on the Potter's Art*, Cipriano Piccolpasso declared the finest tin to be Flemish: "this, for the best result,

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[274] Leon Battista Alberti, *On Painting*, translated by Cecil Grayson, with an Introduction and Notes by Martin Kemp (London: Penguin Books, 2004), 84. Earlier, in Book I of the treatise, he had considered color in relation to optics, discussing the effect of light and dark on a color's brilliance.

[275] For tin production and trade during this period see John Hatcher, *English Tin Production and Trade before 1550* (Oxford: Claredon Press, 1973), especially pp. 92-103 for the role of Italian traders. For the use of English tin in Florentine maiolica of the fourteenth and fifteenth centuries, see Galeazzo Cora, *Storia della maiolica di Firenze e del contado* (Florence: Sansoni, 1973), 212.

[276] Vannoccio Biringuccio, *The Pirotechnia of Vannoccio Biringuccio. The Classic Sixteenth-Century Treatise on Metals and Metallurgy*, translated and introduction by Cyril Stanley Smith and Martha Teach Gnudi (New York: Dover Publications, Inc., 1990), 60.

should be Flanders tin," most likely referring to Flanders as the port through which much English tin moved during that period.[277] Tin was in demand for use by other artisans beside potters, acting as a coloring agent in glass and as alloy in bronze-making. Tin was, moreover, an essential ingredient in Luca's colored glazes as well as his white ones, because it served as a glaze opacifier.

Beyond tin, the primary mineral colorants used in Luca's other glazes are well-known and standard for ceramic and glass of the period: antimony for yellow, cobalt for blue, copper for green, iron for yellow, and manganese for purple and a range of brown to blackish colors.[278] These ingredients were used widely by Italian artisans and could be procured easily through trade if they were not locally available. For example, both Biringuccio and Piccolpasso confirm that manganese and antimony were mined in Italy in the sixteenth century. Manganese was found in Tuscany and the writers note its use as a purple colorant in glass- and ceramic-making activity.[279] Antimony was also found "in various places" in Italy, but in particular in two cities in the region of Siena and a third in the region of Santa Fiore; it could also be imported from Germany.[280] The island of Elba

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[277] Cipriano Piccolpasso, *The Three Books of the Potter's Art. A facsimile of the manuscript in the Victoria and Albert Museum, London,* vol.2, translated and introduced by Ronald Lightbown and Alan Caiger-Smith (London: Scolar Press, 1980), 54.

[278] For the glaze colorants of Renaissance maiolica, see William David Kingery and Meredith Aronson, "On the Technology of Renaissance Maiolica Glazes" *Faenza* 76 (1990): 226-235.

[279] Biringuccio, *Pirotechnia*, 113 reports that manganese could come from Germany but "it is also found in Tuscany in the mountains of Viterbo. Some of a dark rusty color is found on the shore of Salo at Montecastello near Cara." According to Piccolpasso, "Il manganese se ne trova abondantemente per questo felicissimo Stato et in diversi luoghi per la Toscana. Questo è notissimo per tutto Italia, et operasi per tutto ove si lavora di vetro"; see Cipriano Piccolpasso, *Li tre libri dell'arte del vasaio,* edited by Giovanni Conti (Florence: All'Insegna del Giglio, 1976), 109. Manganese also played an important role in glass-making because a small dose of it helped to neutralize the slightly greenish cast of most clear glass.

[280] "Ène, di questo, la miniera in quell di Siena et se ne trova in la Marema in quel di Massa, ma il migliore per quest'uso è quello che vien di Vinegia," Piccolpasso, *Li tre* libri, 107; and also see Biringuccio, *Pirotechnia,* 92. Biringuccio further clarifies that antimony is found in many other places besides the ones he pointed out, as it was not a precious like gold or other metals and "it is considered of little value." He also notes its use in ceramic and glass.

was famed for its fine iron, soliciting a long encomium from Biringuccio, though "various kinds" of iron ore could be found in "abundance" in Italy.[281]

Cobalt oxide, the primary blue colorant used by the Della Robbia workshop, was an import. It is a very powerful colorant: less than 1% cobalt within a glaze gives a strong, deep blue.[282] The cobalt used by Luca and the Della Robbia workshop would have been mined in the Erzgebirge mountain range in southern Germany[283] and had been used to color Florentine glazes since the fourteenth century. At the end of the fourteenth century it was widely used in a popular type of blue glaze decoration, called *zaffera a rilievo*, so called because the blue designs were raised in relief on the tin-glazed surface. Although cobalt had been used to color glass and ceramics since antiquity, it was not used as a painting pigment before the late fifteenth century.[284] Instead the main blue colorants used in painting during the fourteenth and fifteenth centuries were ultramarine, azurite, and indigo.[285] It was only later that cobalt was finally adopted as a colorant for painting in the form of smalt, a pounded glass frit.

Indeed the materials used by Luca and other ceramic and glass artists have limited overlap with those used by painters. As stated above, the use of cobalt appears to have been peculiar to the arts of glass and fire during the early fifteenth century and only later adopted by Italian painters.[286] The painter's whites were made of lime (for fresco) and

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[281] Biringuccio, *Pirotechnia*, 61-67.
[282] Frank and Janet Hamer, *The Potter's Dictionary of Materials and Techniques*, 4th ed. (London: A & C Black; Philadelphia: University of Pennsylvania Press, 1997), 64-65.
[283] A. Zucchiatti, A. Bouquillon, I. Katona, and A. D'Alessandro. "The 'Della Robbia blue': a case study for the use of cobalt pigments in ceramics during the Italian Renaissance." *Archaeometry* 48, 1 (2006): 133-135, 142.
[284] Zucchiatti et al., "Della Robbia Blue," 132; Ashok Roy, ed., *Artists' Pigments. A Handbook of their History and Characteristics*, vol. 2 (Washington, D.C.: National Gallery of Art, 1986-1993), 113-130.
[285] These are listed in Cennini's *Libro dell'arte*.
[286] Smalt is a cobalt frit which is pounded into powder and suspended in a binding medium. See Roy, *Artists' Pigments*, 113-130. However, its earliest instances in the fifteenth century are in Northern

lead (for panel), but not from tin. Powdered glass containing manganese has recently been identified in paintings by Perugino, Pontormo, and Bronzino, but it apparently served as a drying agent in the paint with manganese as the active ingredient rather than as a colorant.[287] The pigments that Luca used to make his yellow and green glazes have a closer relation to painting. Luca's yellow colorant lead antimonate went by the name of Naples yellow in the seventeenth century when it served as an important paint pigment, but had already been used much earlier in glass arts. It seems that some fourteenth- and fifteenth-century yellow pigments called *giallorino* may have in fact been lead-antimonate pigment; however *giallorino* seems to have most often referred to lead-tin yellow, and so that it cannot be stated with confidence that Luca's yellow colorant was identical to that commonly used amongst painters. [288] Finally, the painter's *verdigris*, a green pigment, was made from copper as was Luca's green glaze, but more research is need to determine their chemical relation to one another.

Preparation and mixture

Renaissance painters prepared most of their own colors in their workshop. Surviving records suggest the artist himself carried out this physical grinding in at least

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European art, making it unclear whether smalt was used extensively for this purpose in late fifteenth-century Italy.

[287] See Barbara H. Berrie and Louisa C. Matthew, "New materials on the Renaissance artists' palette," *Materials Research Society Symposium Proceedings* 852 (2005): 131-140; Marika Spring, "Perugino's painting materials: analysis and context within sixteenth-century easel painting," in *The Painting Technique of Pietro Vannucci, called Il Perugino*, edited by Brunetto Giovanni Brunetti, Claudio Seccaroni, and Antonio Sgamellotti (Florence: Nardini Editore, 2004),21-24 ; Mark S., Tucker, Irma Passeri, Ken Sutherland, and Beth A. Price, "Technique and Pontormo's Portrait of Alessandro de' Medici," in *Pontormo, Bronzino, and the Medici. The Transformation of the Renaissance Portrait in Florence*, edited by Carl Brandon Strehlke (Philadelphia: Philadelphia Museum of Art, 2004), 46; and Merrifield, *Original Treatises*, ccxxxix-ccxlii.

[288] Ian N. M. Wainwright, John M. Taylor and Rosamond D. Harley, "Lead Antimonate Yellow," in *Artistis' Pigments. A Handbook of their History and Characteristics* vol. 1, edited by Robert Feller (Washington, D.C.: National Gallery of Art, 1986), 219-254. "Naples yellow" is a difficult pigment name to deal with, because it has been used to describe many related colors (based on their appearance) rather that a mineral source. However, it is clear that lead antimonate was used in both glass-based arts and painting, and had its origins as a colorant in the former.

some instances, though at other times this was the task of a workshop assistant.[289] Such in-house production gave artists control over the quality and composition of the materials they used. They decided what grade of certain raw materials to buy, and how much to grind the pigments—some pigments like terre-verte improved the more grinding they received, while others like malachite should only be ground lightly[290]—or how to combine the pigment yields from washing lapis lazuli into different grades of blue.[291] These decisions, as noted by Cennini, directly affected the quality of the pigment and therefore had importance for the overall aesthetic force of the artist's products; the author provided instructions for what type of stones to use for grinding, and specified the degree to which certain pigments should be ground, or "worked up."[292]

Like the painters, ceramicists during this period also typically prepared their own colors in their workshops.[293] Piccolpasso's sixteenth-century treatise gives instruction for grinding, mixing, and firing pigment ingredients in preparation for their use in the glaze, and some colored glaze recipes in the so-called Bolognese manuscript of the fifteenth-century also make reference to grinding and the use of a mortar.[294] A fifteenth-century Florentine document testifies to the equipment and raw materials that potters kept in their workshops for just this purpose. On July 16, 1423 the *orciolaio* Giunta di Tugio inventoried goods belonging to the brothers and *orciolai* Miniato and Maso di Domenico. The inventoried objects were to serve as collateral against their debt (unpaid rent) owed to the convent of San Miniato al Monte, for lodging rented in Ricorboli. Alongside other

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[289] Anabel Thomas, *The Painter's Practice in Renaissance Tuscany* (Cambridge: Cambridge University Press, 1995), 151-152.
[290] Cennini, *Libro dell'arte*, 30-31.
[291] Cennini, *Libro dell'arte*, 38.
[292] Cennini, *Libro dell'arte*, 20-22.
[293] Galeazzo Cora, *Storia della maiolica di Firenze e del contado* (Florence: Sansoni, 1973), 178
[294] Mrs. Merrifield, *Original Treatises*, 537-545.

items like a wheel for turning vessels we find several entries related to color: a mortar for grinding colors, six *conche* for colors, a stone mortar for grinding *azurro*, another mortar for grinding colors, and other stones for making color.[295] The record of these objects thus serves as a testament to the sort of equipment and raw color materials typically kept on hand by ceramic artists, and which one could expect Luca to have owned.

No such inventory list is currently known for the contents of the Della Robbia workshop in the Via Guelfa during the middle of the fifteenth century. However the will of Andrea della Robbia, made on September 4, 1522, does obliquely reference the family workshop's equipment for glazing, and it is therefore our most valuable document in this regard. The will divides Andrea's belongings between his sons, chief among them the family house and workshop on the Via Guelfa (discussed in Chapter One). It contains a particularly tantalizing bit of information for the study of Della Robbia art, describing the *anticucina* which Andrea left to his son, Girolamo, in the following way: "jn qua anticucina est furnus et truogolj reservato tamen arti victreriarie." These troughs are identified as "mixing troughs" by Marquand, and are understood to refer to troughs containing materials specifically relating to the workshop's glazing activities.[296] This is the most explicit description we have to the contents and arrangement of the family *bottega* as pertains to the colored glazes.

That Luca, or members of his workshop, would have prepared their own glazes from raw materials is important, as it means the artists had control over the qualities of saturation and tone which subsequent sections of this chapter will explore. Luca would

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[295] Cora, *Storia della maiolica*, 212, 431-432. The items related to color are: "VI chonche da cholori, una pila di sasso da macinare azurro, una pila da macinare cholori … di più ragion pietre da far cholori."
[296] Cited in Allan Marquand, *Andrea della Robbia and his Atelier*, 2 vols. (Princeton: Princeton University Press, 1922), xiii-xiv, lvi. The arrangements in the will provoked discontent and further legal action both before and after Andrea's death on August 4, 1525.

have chosen how much white to add to his colored glazes, and when to retain a highly concentrated color. He would have chosen when to mix glaze colorants and, as we will see, his choices in this regard mostly followed set functions assigned to different colors. For example white was used to lighten any hue, but yellow was used to lighten only green. Although the raw materials discussed above are standard across media of fire like stained glass, enamel, and ceramic, each medium posed certain requirements and conditions that shaped the treatment and handling of its colored materials. While the colorants for Luca's ceramics would be treated in one way, those used in medieval and Renaissance glass decoration for windows in another. For example, while Luca sought opacity in his glazes in order to ensure the strength and uniformity of their color, makers of stained glass windows generally avoided it, as an opaque glass restricted the already-limited amount of light that could pass through the glass to make their colorful compositions visible.

Section Three: Hue, Tone, and Saturation

Painters' Precepts for Color in the *ricettari* and Treatises

As discussed in the previous section, the *ricettari* and Cennini's *Libro dell'arte* offer practical workshop directions for obtaining and preparing the mineral or organic sources used in any given pigment. This endeavor is, at its heart, concerned with hue. Careful selection of the raw materials and proper protocol in their production ensures a high quality end product, the pigment, which in itself reflected the artist's skill. It has been pointed out by Michael Baxandall that the relative value accorded to using fine materials like gold and expensive pigments like ultramarine changed over the course of

the fifteenth century.[297] A survey of artists' contracts over this period reveals that visible evidence of the artist's skill, his "hand," gained increasing value relative to the materials used. Despite this gradual change in attitude, clauses specifying the use of high quality materials continued to feature in contracts throughout the fifteenth century, attesting to the continued relevance of such material values during the period when Luca was working. Beyond the visual appeal of fine colors, described in greater detail below in relation to the concept of color saturation, the quality of the pigments used also affected the longevity of an artwork. For example, Cennini warned of unwanted changes in the appearance of pigments that could occur if the artist did not prepare them carefully.

A second concern related to color, it tone, became increasingly important in artistic practice and writings during the early Renaissance. As discussed in Chapter Two, fourteenth- and fifteenth-century painters strove to imitate the appearance of objects and living things in the natural world, and color tone was their primary tool for registering the fall of light and shadow over colorful surfaces in order to reveal shape in three dimensions. Their interest in observing and imitating real light effects stands in direct contrast to common practice in late medieval painting as recorded in the *ricettari*. The *ricettari* had offered a fixed, schematic formula for making light and dark marks over the base hue, with no direct observation of natural phenomena.[298] The tonal gradation revived by Giotto and his contemporaries in the fourteenth century instead cultivated a subtle transition between light and dark areas to give a sense of the shifting spatial relationship between surfaces and the fixed light source of the image. They achieved this tonal gradation by adding increasing amounts of white to the base hue. The base hue thus

[297] Michael Baxandall, *Painting and experience in fifteenth-century Italy: a primer in the social history of pictorial style* (Oxford: Clarendon Press, 1972).
[298] Hills, *Light of Early Italian Painting*, 19-24.

remained pure and highly saturated only in the areas of darkest shadow, becoming increasingly lighter and less saturated as more white was added for the most brightly-lit areas. In the fifteenth century, artists began to realize that this fourteenth-century practice had the rather unnaturalistic effect of creating a color palette of extremely high tonality, with the most saturated and visually attractive colors in the shadows. Alberti therefore advised that areas of shadow be dimmed with an increasing mixture of black; few artists took up his suggestion before the second half of the century, although Filippo Lippi did work to neutralize color in the areas of shadow within his paintings.

Such lower tones posed a challenge to visual qualities that many artists still valued: namely, the brightness of colors that dominated Trecento painting and was associated with supernatural splendor. Adding black or white to a base color reduced the purity of its primary pigment, which is to say it decreased the color's saturation, our third term of evaluation. *Ricettari* and treatises do not discuss saturation as explicitly as tone and hue, yet the quality was recognized and valued in specific situations. The best example of such a case is ultramarine blue. Ultramarine was made by grinding and decanting lapis lazuli, an imported stone so valued and costly that artists did not want to mix it with other pigments like white or black. The saturation of ultramarine blue attested to its quality, a value reflected in the process of its production: the pigment's first yield was its most saturated and therefore of the best quality; those that followed became increasingly less saturated and were correspondingly less costly. The mineral vermilion offers a second example, for Cennini advised the artist to only buy it unbroken; if

already-ground the artist ran the (high) risk that the pigment had been adulterated by substances like red lead and pounded brick.[299]

Not all of the advice recorded in the written sources directly reflects actual practice of the period. However the admonitions whether carried out literally or not do generally reflect the changing ideals and preoccupations of the fourteenth- and fifteenth-century artist. It cannot be contested that the technical knowledge needed to ensure a high quality of the color remained indispensable to the artist's success in this, as in any, period. As artists strove more and more to imitate the natural world, understanding the interaction between light and color became of prime importance to their work. This involved understanding qualities of hue, tone, and saturation, if not always referred to directly in those terms. The following section therefore examines the role these contemporary concerns played in Luca's choices about the opacity and pigment saturation of his colored glazes, by which he sought to maintain a relatively bright overall color palette.

Application to Luca della Robbia

The basic hues in Luca della Robbia's glazed terracotta sculpture can, in the simplest terms, be associated with his pigments: blue (cobalt), green (copper), yellow (antimony), black (iron), purple and brown (manganese), and white (tin). The yellow and green glazes were especially closely related because antimony was often added to copper to make the green glazes and, as will be described below, color theory dating back to antiquity often positioned yellow as a lighter species of green. White and black will be considered as hues in Luca's works in this chapter, although in color theory like Alberti's they were also presented as extremes of light—its full presence or absence,

[299] Cennini, *Libro dell'arte*, 24.

respectively—used to modulate other colors to create tonal modeling. As discussed above, the colorants Luca used were common to glass, mosaic, and enamel arts, and largely differed from those used in contemporary painting.

Unlike contemporary painters, Luca did not use his glazes to create an effect of tonal modeling in his sculpted figures: because they are three-dimensional, real light effects within the sculptures' context created areas of light and shadow. Yet tonality remains relevant to Luca's works in relief because he added a significant amount of tin to his colored glazes in order to ensure their opacity which, as a result, also lightened the tone of the colors in question. This effect is especially notable in Luca's blue and purple glazes. The amount of tin oxide added to the glaze depended on the final color desired; for example, a wide study of blue glazes of the entire Della Robbia workshop showed the blue glazes to could contain anywhere from 4-20% tin oxide.[300] By contrast, Luca's antimony-based yellow glazes, and the green glazes to which they were added, were an exception in regard to the use of tin as an opacifier: sufficiently opaque on their own, they contain very low amounts of tin oxide, if any. They consequently remain stronger and more saturated in color unless tempered as according to aesthetic choice. In general, therefore, we are looking at a uniformly *heightened* tonal palette for Luca's works similarly, as will be described below, to Trecento painting palettes.

Blue

The relatively lightened tone of Luca's blue glazes, created by opacification with tin oxide, can be seen by comparing their appearance to that of glazes used in contemporary ceramic wares. In particular, the *zaffera a rilievo* style, popular in Florence

[300] A. Zucchiatti, A. Bouquillon, I. Katona, and A. D'Alessandro. "The 'Della Robbia blue': a case study for the use of cobalt pigments in ceramics during the Italian Renaissance." *Archaeometry* 48, 1 (2006): 131-152.

in the early fifteenth century offers an instructive contrast.[301] "Zaffera" was the name used for the cobalt oxide product used by glassmakers and ceramicists[302], so the term *zaffera a rilievo* literally translates as "blue in relief." This is because the jars featured blue-glazed decorations applied so thickly that they stand in relief above the white tin-glazed surfaces of the vessel. A two-handled pharmacy jar made for the hospital of Santa Maria Nuova in Florence and today in the Fitzwilliam Museum in Cambridge (figure 45) offers a representative example of the type.[303] It is presents two fields for decoration, each of which shows a hare surrounded by oak leaves, dots, and dashes, all raised in blue relief and with thin purplish brown lines, colored with manganese, outlining each shape. The decorations in blue relief often feature an oak leaf motif (as here), such that vessels with that pattern are sometimes referred to as "oak leaf jars" in Anglophone scholarship.

In the *zaffera a rilievo* style, as in other ceramic decoration, the vessel was first dipped with an opaque tin glaze in order to create a white ground on which to paint the artist's designs. The highly saturated cobalt glaze used to make those designs and the manganese glaze used to outline them could be quite dark in color, as we see in the Fitzwilliam example. Their dark color, particularly that of the blue, is the result of the method used to apply the colorants. They were loaded up thickly on the artist's brush as pure pigment suspended in colorless lead glaze, then applied on top of the white base glaze; no other colorant or opacifier was added to the cobalt and manganese. Since the

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[301] See Giovanni Conti, *Zaffera et similia nella maiolica italiana* (Viterbo: FAVL Edizioni artistiche, 1991).
[302] Roy, *Artists' pigments*, vol. 2, 113.
[303] See Julia E. Poole, *Italian maiolica and incised slipware in the Fitzwilliam Museum, Cambridge* (Cambridge: Cambridge University Press, 1995), 96-99; color plate 4. This jar is known to have belonged to the hospital because it bears the crutch emblem of Santa Maria Nuova on its handle, as do at least twenty others existing jars. The authorship of this group of jars is disputed: it has been suggested that they could belong to a large order for jars the hospital made from Giunta di Tugio in 1431, or to a smaller order of jars from Maso and Miniato di Domenico in 1427.

blue and purplish-brown glazes are, in themselves, translucent, the saturation of their color varies depending on their application. In areas where the glaze is thickest its pigment density hides the white ground below, giving a fully saturated deep blue, while in thinner areas the white shows through producing a moderately lighter shade of blue. This is quite different from the method of application used for Luca's colored glazes, in which the colorant—cobalt or manganese—and tin were mixed together in the glaze and then applied in a single, opaque layer of uniform color.

The deep colors that appear in *zaffera a rilievo* decoration show how intensely dark cobalt blue can look at a high saturation point. By including tin in his blue glazes Luca produced a more moderate blue tone, although it is still rich in color owing to the strength of cobalt as a colorant. He did, furthermore, use highly saturated dark blues in certain instances which are discussed later in this section. The end result is that Luca's typical blue glazes are both brighter in color and less saturated than glazes made up of undiluted cobalt. The cobalt glaze used for *zaffera* decoration was, as already noted, translucent, making it necessary for Luca to add tin since his glaze would be applied directly on the terracotta surface rather than on an underlying layer of *bianco*. However, opacity could be achieved at a relatively deep hue, meaning the amount of white that Luca added after that point reflected an aesthetic rather than functional choice. One commission in particular displays the variety of blues Luca commanded at an early date: the apostle roundels in the Pazzi Chapel by Filippo Brunelleschi at Santa Croce, Florence (1440s-1450s, figure 10). In particular the four sculpted roundels of Peter, John the Evangelist, Matthew, and James the Great that are relevant to an examination of blue tones.

Those four saints belong to a larger ensemble of the twelve apostles, arranged around the four main walls of Brunelleschi's centrally planned chapel. In each roundel an apostle glazed in white sits on a cloud bench raised in low relief, painted with brushstrokes of white and dark blue against the blue background of the roundel. The roundels of Peter, John the Evangelist, Matthew, and James the Great differ from the other eight because they show the figures against concentric blue rings, which become increasingly lighter in tone as they approach the saint at center. Seven rings span from border to center of the James the Great roundel (figure 46), but are reduced to four in the other examples. They appear to show the gradation of a single blue hue and might be envisioned as a spectrum of blues Luca could choose from in any given commission, depending on the effect he sought. A similar gradation of blues is also found in the scale-decoration of the glazed terracotta ceiling Luca made for the Cardinal of Portugal Chapel at San Miniato al Monte (1461, figure 14), discussed later in this chapter. At both sites the gradation of blues is presented as if responding to light emanating from the white figure at the roundel's center, creating a connection between Luca's use of tonality and its use in contemporary painting as a descriptor of light and space.

The ability to vary blues seems to have been important to the artist as he often made a point of including more than one shade in even small objects. For instance, we might observe the light blue base that he juxtaposed against a dark blue ground in both the Madonna of the Apple at the Museo Nazionale del Bargello, Florence (figure 40) and the Virgin and Child at the Statens Museum for Kunst, Copenhagen. Like the concentric rings in the Pazzi chapel works, the light blue color of the bases provides spatial information within the composition, an idea that will be explored further in a later

section. The bases are significantly lighter in color than the blue backgrounds of the two works, with the result that the bases advance visually together with the white figure. The bases therefore loosely form a unit with the figure but avoid too close a conflation with the white substance of the figure as in some of Luca's earlier works, for example the *Visitation* statue group for San Giovanni fuorcivitas in Pistoia (c. 1445, figure 9) and the *Candle-bearing angels* for Santa Maria del Fiore in Florence (1448, figures 6, 7), where the figures and their bases are both glazed white. The change in color positions the base as an intermediary between the blue field 'space' around the figure and the white figure itself.

Purple

Luca also added tin oxide to manganese to opacify his purple glazes, giving a higher and more consistent tone than that of the manganese glazes used in the *zaffera a rilievo* style. There the pigment was mixed only with colorless lead and, as a result, it is very dark where the brush was most loaded up and becomes lighter as the brush traveled over the white ground, losing pigment. By contrast Luca's purple is uniform over large areas and—while ultimately a deeper hue relative to his yellow, white, and some blue and green glazes—its tonality is significantly lighter than that of manganese at full saturation. As with cobalt, Luca could choose how much tin to mix with the manganese in his glazes. In the San Tommaso Virgin and Child (figure 44), for example, he uses two purple tones: a rich and slightly reddish purple for the Virgin's robe, and a light pastel purple for her throne and the sculpture's base. Multiple shades of purple do not feature as frequently in Luca's works, however, as the multiple shades of blue do. The artist seems

to have generally preferred a relatively deeper tone of purple, similar to that used for the Virgin's dress, over the lighter lilac used for the base.

In sum, the ultimate effect of adding tin dioxide to opacify the blue and purple glazes is to create a relatively lighter tonality for both colors compared to their original form as unmixed pigment.[304] While this change has, as noted, a primary function of opacifying the glaze, it can also be manipulated to serve aesthetic ends. One beneficial effect of the tin opacifier was to bring the blue and purple into closer agreement with the brightness of Luca's white, yellow, and green glazes. There were, furthermore, a variety of tones that Luca might produce for either color: while he tended to employ a fairly consistent tone of purple throughout his works, he made use of a much wider tonal range of light and dark blues, a fact which underscores the prominent role that color played in his glaze palette. However, it should be emphasized in conclusion that the manganese and cobalt glazes, while lightened compared to their own darkness at high saturation, often remained deep in color relative to Luca's lightest-toned glazes.

Yellow and Green

Indeed, the yellow glazes used by the Della Robbia workshop do stand apart from the other, non-white colors for their inherent brightness and opacity. Recent technical study has shown yellow glazes used by Andrea, Giovanni, Girolamo, and Luca the Younger to contain very low levels of tin relative to other Della Robbia glazes. This is because the lead antimonate that made the glaze yellow also acted as a glaze opacifier.[305]

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[304] Also noted in Giovanni Agosti et al., "Una pala in terracotta invetriata di produzione robbiana: metodi integrati di indagine e restauro" *OPD restauro: quaderni dell'Opificio delle pietre dure e laboratori di restauro di Firenze* 9 (1997): 73-90

[305] Most recently Adrian Duran, Jacques Castaing, Patrice Lehuédé and Anne Bouquillon, "Les pigments jaunes des glaçures de l'atelier des Della Robbia," in *Della Robbia: dieci anni di studi – dix ans d'études*, edited by Anne Bouquillon, Marc Bormand, and Alessandro Zucchiatti (Genoa: Sagep Editori, 2011), 44-49. Also see earlier results in Giovanni Agosti et al., "Una pala in terracotta invetriata," 73-90; and Anne

Since tin was not needed to opacify the glaze, the yellow remains highly saturated. Saturated colors draw the eye, and the strong yellow, if left unmitigated, would carry great visual weight within a color composition. In fact such bold yellows features more prominently in the work of Luca's successors, particularly in works by Giovanni, and play a less dominant role in Luca's color choices. In at least one case, the Virgin and Child at the Oratorio di San Tommaso d'Aquino (figure 44), Luca tempered yellow with white to make a much lighter, less saturated color. It should be noted, however, that the technical analysis of yellow glazes has so far been made in relation to the yellows of Andrea, Giovanni, Girolamo, and Luca the Younger, and awaits confirmation by testing works from Luca's *oeuvre*.

The powerful yellow also had an impact on the green glazes used by the Della Robbia. Those green glazes varied in hue: by mixing antimony and copper they achieved a bright yellow-green, whereas mixing cobalt with copper produced a deep blue-green. In the first case (antimony and copper) the glazes contain little to no tin; in the second case (cobalt and copper) the tin content is much higher, typical of the amount used in other Della Robbia colored glazes. Antimony and tin perform analogous functions in the two green glazes, simultaneously opacifying and lightening them. The green made by adding antimony is, predictably, warmer and brighter, while that produced by the addition of cobalt and tin is cooler and deeper. Adding tin to the deep green glaze has a similar effect to its inclusion (discussed above) in the blue and purple glazes: it somewhat decreases the pigment saturation but the result is to create a brighter tonality color rather than to denature the resultant hue. This makes sense if one considers that the deep green glaze

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Bouquillon, Alessandro Zucchiatti, Jacques Castaing and Ildiko Katona, "Les Della Robbia: matière et transfiguration" *Technè* 20 (2004): 13-18.

contains a mixture of copper and cobalt, the latter pigment being (as discussed above) extremely dark when fully saturated.

The use of yellow and greens, sometimes in combination with blue, in Luca's *oeuvre* moreover differs from that of other colors, as they are sometimes used in a manner similar to the *cangiante* modeling employed by painters. In addition to being fully mixed together to make a lighter hue, the colors are also used alongside one another in areas of vegetation where they have an ambivalent representative function. The best example of this is in the sculpted lily plants that appear in a number of Luca's scenes, for example the Stemma of the Medici e Speziali for the exterior of Orsanmichele, Florence (figure 47). There, the stalks and leaves of the plants (figure 48) are glazed a green hue, but yellow glaze is added on areas of higher salience to color the tips and upper sides of some of the leaves. This color change can be read in two ways. First, it acts as modeling, marking the areas of salience on the leaves where light would shine most strongly. Yet such a record of illumination by means of coloring on a three-dimensional object is unusual, as three-dimensional objects are typically painted in areas of straight hue, without modeling effects. The application of yellow works, however, because it can also be read in a second way, as a subtle change in the color of the plant, to a more yellow hue, since the green already contains yellow.

Yellow and green have indeed been closely allied in color theory since antiquity and were seen as two species of the same color genre as early as the fifth century BC.[306] The sympathy between these colors is also reflected at several moments in Cennini's *Libro dell'arte*. Three of the seven recipes he provides for green pigment are made by

[306] John Gage, *Color and Culture. Practice and Meaning from Antiquity to Abstraction* (Boston: Little, Brown and Company, 1993), 12. He proposes that this same view was held in fifteenth century Italy, ibid., 119.

mixing yellow and blue, while the recipe for malachite green (Chapter LII) instructs the artist to put lights on the drapery using *giallorino*, a yellow, rather than white. [307] In Chapter LV Cennini describes mixing ultramarine and orpiment to make green, and says "if you want it to incline toward light, let the orpiment predominate." Taken with the direction for putting lights on malachite with *giallorino*, the instruction for lightening green with yellow can be seen as positioning the colors together on a shared spectrum from light to dark. That attitude is given practical application in Cennini's instructions in Chapter LXXXCI for how to paint trees, plants, and foliage. The artist should make the leaves with dark green, using malachite, then mix a lighter green with *giallorino* to make a smaller number of leaves and to shape up some of the ridges of the malachite leaves; then the highlights of the leaves should be touched in with straight *giallorino*, so that "you will see the reliefs of the trees and of the foliage."[308] Consequently, we see Luca adopting the advice Cennini gives to painters for showing the reliefs of trees and foliage in his sculptures. This is the only place in Luca's *oeuvre* where he uses color to model objects that already possess three-dimensionality by virtue of their representation in relief. It should be noted that these vegetal areas are usually in a rather low relief, especially in relation to the figures in Madonna of Humility compositions like the National Gallery example (figure 43), which is perhaps one reason that it works to use a coloring scheme typically used for suggesting three-dimensionality on a two-dimensional plane.

The final result of using yellow to 'lighten' areas of green foliage is the preservation of a high level of color saturation. It is in fact closely related to *cangiante*

[307] See Chapters LIII, LIIII, and LV for mixtures of blue and yellow to make green; and Chapter LII for putting lights on malachite with *giallorino*. Cennini, *Libro dell'arte*, 31-33.
[308] Chapter LXXXVI, Cennini, *Libro dell'arte*, 56.

modeling, which Cennini describes in Chapters LXXVII-LXXX of the *Libro dell'arte*. *Cangiante* modeling uses a different hue, rather than white, in order to up-model a color. Its advantage is consequently to maintain a high level of color saturation, avoiding the denaturation of the base hue that occurs when significant amounts of white are added to it to lighten its tone. Cennini describes its use at length for draperies, and though he does not identify it as such, using yellow in order to put the lights on green does constitute a *cangiante*-like strategy, although given the attitude that yellow and green be seen as members of a continuum of a single color it is perhaps not correct to describe this as a "change." Instead it may be more correct to view yellow is the natural 'light' of green, especially in cases where the green is a mix of yellow and blue to begin with.

"Black"

In contrast to the brighter tonalities favored for the glazes prominently used to cover large portions of the sculptures' surfaces, Luca used dark glazes saturated with pigment and lacking tin for details like the eyebrows, pupils, eyelashes, and inscriptions. It is instructive to look at the colorants used in these glazes. Although these dark glazes initially appear to be black in color, they actually present dense concentrations of cobalt and manganese, with or without the addition of iron. This composition has been confirmed, for example, in recent chemical analyses of two sculptures by Luca's nephew, Andrea, in the Metropolitan Museum of Art, New York: the *St. Michael the Archangel* lunette (c. 1475, figure 49) and the *Prudence* roundel (figure 50). In the *St. Michael* lunette, Andrea renders the eyebrows, outline of the irises, and coloring of the pupils of the angel in a deeply colored glaze made from a mixture of cobalt, manganese, iron, and

nickel which produces a purplish-blue so dark as to read like black.[309] In the second work, the *Prudence* roundel, the glaze used for the concord-like grapes in the vegetal garland is also made of a highly concentrated color: it contains twice the amount of cobalt as found in the blue-glazed ground behind the figure of Prudence.[310] These results align with a typical practice in Renaissance enamel-work, where what appears to be a 'black' enamel color is actually a very dark blue or purple, suggesting further ties between Luca's medium and that of enamel workers.[311]

The eyebrows, iris outlines, and pupil colors in Luca's earliest figures do not tend to be as dark as in the *St. Michael* work by Andrea. However they do represent a precursor to that later practice in their use of a highly saturated cobalt glaze. This choice can be seen already in Luca's first dated work in glazed terracotta, the colored ornaments made for his Host Tabernacle today at Santa Maria a Peretola (figure 8). Looking at the eyes of the three blue and purple cherub heads in the upper frieze, and at the lines used to outline the feathers in their wings, we see the use of a dark cobalt glaze. This same color is used again for the expressive eyes and eyebrows of Christ, the Virgin, and the apostles (figure 51) in the lunette of the *Ascension* (1446-1451) that Luca made for the south sacristy door of the cathedral, Santa Maria del Fiore in Florence. The colors used for the eyes and brows of many of Luca's other figures appear even darker, as for example the eyes in the San Tommaso Virgin and Child. While they may give the impression of

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[309] Wendy Walker and Peter Bell, Conference talk: "Recent conservation of Andrea della Robbia's St. Michael lunette," at May 29, 2015 Walters Research Forum: The Walters' *Adam and Eve*, by Giovanni della Robbia and Workshop, ca. 1515, and the Della Robbia School in Current Museum Research.
[310] Michael Morris, Wendy Walker, and Peter Bell, Conference talk: "Current condition of Andrea della Robbia's Prudence tondo and conservation goals," at May 29, 2015 Walters Research Forum.
[311] Mark T. Wypyski, "Chemical Analyses of Renaissance Enamelled Jewellery," in *Glass and ceramics conservation 2007: interim meeting of the ICOM-CC Working Group*, edited by Lisa Pilosi.(Nova Gorica: Goriški muzej Kromberk, 2007), 47-59.

having a blackish hue, more research about their chemical composition is needed in light of the recent findings about later, seemingly 'black' Della Robbia glazes.

Furthermore, given that high saturation of cobalt found in the grapes of the Metropolitan Museum of Art's *Prudence* roundel, we might wonder if similar larger passages of dark color in Luca's *oeuvre* are produced in the same way. This is, as with the eyes discussed in the previous paragraph, a question for further analysis. The examples to be considered from among Luca's works include the grapes in the garland for the Stemma of the Mercanzia at Orsanmichele (1463, figure 52); the grapes in the garland for the Stemma of Rene d'Anjou made for the Loggia de' Pazzi at Montughi and now in the Victoria and Albert Museum, London (post-1466, figure 53); and the dark parallelograms in the flat tiled ground of the Cardinal of Portugal Chapel at San Miniato al Monte, Florence (1461, figure 14), which have been identified as 'dark purple' in color by both John Pope-Hennessy and Allan Marquand (see further consideration of this point below). In conclusion, we see that a highly saturated version of the darker cobalt and manganese pigments at Luca's disposal—while avoided in the larger fields of color like robes and the blue ground—plays an important role in creating a dark glaze for fine details. Beginning with Luca, the change in tone created by a greater saturation would continue to be recognized and exploited by the Della Robbia artists for its expressive power on a smaller scale.

Conclusions

The conclusion to be drawn from the initial examination of Luca della Robbia's color use in this section is that the artist clearly recognized the properties of hue, tone, and saturation, and a division of uses to which they might be put. A brighter overall

tonality is maintained in the works by use of tin oxide as an opacifying agent in blue, purple, and some green glazes and by the use of an opaque and brilliant yellow glaze which is also used to produce bright greens. The cumulative effect is to draw the colors into a high-toned harmony. This high toned harmony is in part a result of the need to opacify the blue and purple glazes which would otherwise be translucent; but it also serves the equally important role of lightening those colors, which would be incredibly dark in a highly saturated state. Luca also occasionally tempered the saturation of his yellow glazes, depending on the use to which they were put in a given context. The issues being examined by color theory of the fifteenth century can help to bring into focus how the overall tonal palette of Luca della Robbia's sculptures might be viewed.

Section Four: Color Composition and Color Palette

Color Composition and Color Palettes in Fifteenth-Century Sources

The preceding section considered the properties of individual colors in relation to their hue, tone, and saturation. However in fourteenth- and fifteenth-century painting colors were seen in concert rather than in isolation, juxtaposed within a larger visual field. There are two ways that the use of colors within this field can be understood. The first is the longstanding concern of composition: the location, juxtaposition, and balance of colors across the available space in order to create attractive or meaningful patterns. Both Antonio da Pisa and Leon Battista Alberti address these issues pertaining to the arrangement of colors in their writings. The second concern, newly developing in the fifteenth century, is the agreement of color tone across a composition as a unifying tool; similar to linear perspective or the consistent modeling of form based on a single light

source, a tonal use of color served the period's new goal of closely imitating the natural world. The question of tonal agreement was not identified explicitly in the texts this chapter reviews. A tonal use of color does, however, emerge as a concern inherent to the advice Alberti offers about modeling and depicting space; the concern was reflected in the work of progressive artists like Filippo Lippi and would be articulated more clearly in later writings by Leonardo da Vinci.[312]

Color composition is as an ever-present concern in the history of art, but the ideals and goals that guide it can and do change from one period to another. John Shearman has shown isochromatic color composition—which balances areas of color symmetrically or rhythmically around a central axis—to be a significant strategy in Italian art through the fourteenth and early fifteenth centuries.[313] This approach is particularly useful in paintings that repeat a limited group of basic hues across the composition, especially in multi-figure scenes (e.g. groups of saints) with many outer robes and dresses underneath to be colored.[314] Its effect is, in essence, to create a coherent structure for the entire image by means of color patterns. Two key formal concerns that stand behind the isochromatic approach are the overall balance and variety of colors, and we will see that these criteria are also present in the specific compositional advice given by Antonio da Pisa and Alberti. Over time the isochromatic approach to color in painting was replaced with a tonal approach, which better evoked a sense of a shared

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[312] For Leonardo's exploration of the question of color tone see in particular John Shearman, "Leonardo's Color and Chiaroscuro," in *Sixteenth-Century Italian Art*, edited by Michael W. Cole (Malden, MA: Blackwell Publishing, 2006), 408-440.

[313] John Shearman, "Isochromatic Color Compositions in the Italian Renaissance," in *Color and technique in Renaissance painting. Italy and the North*, edited by Marcia B. Hall (Locust Valley, NY: J.J. Augustin, Publisher, 1987), 151-160.

[314] The use of an isochromatic strategy was not limited to clothing, however. One of the most famous fifteenth-century examples is Masaccio's *Trinity* fresco for Santa Maria Novella, in which the rhythmic balance of blue and red extends to the architecture as well as the figures' clothing.

environmental and light source; however, at their essence both the isochromatic and tonal methods sought to give the sense of a unified whole. The examination of Luca della Robbia's compositional color choices should therefore keep the ideal of "unity" in mind as a guiding principle.

While the isochromatic approach has a long history in medieval art, advice about the color composition of images—even of a more general sort—does not occupy any significant portion of the early *ricettari* or even of Cennini's *Libro dell'arte*. Such advice finally does appear in Antonio da Pisa's glass treatise and in Alberti's painting treatise. Both sources identify certain shared values for emphasis, those being an overall balance and a preference for certain agreeable combinations. Antonio da Pisa's glass treatise begins right away with a consideration of color composition before proceeding to outline practical points and technical procedures relating to the production and acquisition of colored glasses, the design and operation of a kiln, and the relation of glass windows to their architectural environments.[315] Alberti's painting treatise, by contrast, treats color composition in a later section on the reception of lights; his discussion there supports earlier admonitions for cultivating an appealing while still dignified sense of variety in the 'historia,' the greatest subject that the painter can take on.[316] Both authors in fact value a sense of balanced variety in the distribution combination of colors they suggest, and they give advice for how to accomplish this on both a large and small scale.

To begin on the small scale, the two writers recommend certain color combinations as particularly attractive or successful. Alberti's advice about color combinations is made in general terms. For example, he remarks that the placement of

[315] Although the only manuscript of Antonio da Pisa's treatise that survives today is a copy and not the original (see footnote 8), it is believed to present the sections in the same order that the author intended.
[316] Alberti, *On Painting*, 71.

red between blue and green gives ‘onore e vista’ (honor and prominence) to all three colors[317], and he identifies white as a color that gives ‘letizia’ (gaiety) in particular next to yellow and grey, but also next to almost any color.[318] Antonio da Pisa identifies more specific locations within the image that provide an opportunity for fortuitous color-combinations. These include: the coloring of a figure’s mantle, mantle lining, and underlying dress; the juxtaposition of figures and vegetation against a ground; and the alternation of color between the robes of one figure and the other(s) adjacent to it. In nearly every case he provides potential variations to the general color scheme being proposed, for example a figure wearing a green dress can have a red or lac mantle with a yellow or white lining.[319] The fact that Antonio da Pisa emphasizes these moments of the composition for his recommendations suggests that they were both common and significant opportunities for an artist to display his discernment in the use of color.

Antonio da Pisa’s advice about varying the robe colors of figures standing next to one another also reflects a larger, composition-wide concern which was shared by Alberti. In *Della pittura,* Alberti poses the example of a hypothetical subject, Diana leading her band of nymphs, as an opportunity for creating a delightful play of colors. The painter should alternate the clothes of the nymphs to include green, white, red, yellow, and a variety of other hues such that light ones always alternate with dark ones; by doing so he will “enhance the attractiveness of the painting by its variety, and its beauty by its comparisons.”[320] Antonio da Pisa also provides further advice on this subject of color distribution (although no illustrative subject like Alberti). He

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[317] Red, blue, and green had formed a standard color triad since the medieval period.
[318] Alberti, *On Painting*, 85.
[319] Antonio da Pisa, *Il trattato di Antonio da Pisa sulla fabbricazione delle vetrate artistiche (secolo XIV)*, edited by Salvatore Pezzella (Perugia: Umbria Editrice, 1976), 23.
[320] Alberti, *On Painting*, 85.

recommends the glass artist to distribute green throughout the window and, in a reflection on the fact that his art is literally assembled from colored shapes, he uses percentages to make a point about color choice: one-third of the pieces that make up a window should be white in order to produce a result that is "allegro e comparescente" (bright and attractive).[321] In each of these cases the writers' advice is driven by an artistic, compositional ideal rather than a concern with reality: it is assumed that the artist will exercise *choice* in coloring these various areas and should do so to the best advantage of the overall effect of the work.

The following four subsections of this chapter function as case studies, examining the wide range of uses to which Luca put his colored glazes in relation to the preceding discussions of hue, tone, and saturation, and of Alberti and Antonio da Pisa's compositional principles. The case studies represent a wide range of object types and painting methods, giving a good overview of Luca's work with color. The first case study in Section Four considers two vividly polychromed sculptures of the Virgin and Child, thought to date to the 1440s, the first of which is a small devotional relief likely used in a home, while the second is a larger statue that would have be a suitable decoration for a church. The next subsection takes up the topic of Luca's blue tones once more and considers their use in order to give spatial information in both small and large glazed objects. After that, the third subsection considers the glazed decorations of the tomb of Bishop Benozzo Federighi (1454-57); they are exemplary in Luca's *oeuvre* because here he paints with colored glazes on flat glazed terracotta. The fourth, and final, subsection examines the glazed terracotta ceiling Luca made for the Cardinal of Portugal Chapel at

[321] By way of example, he clarifies that a window with 700 pieces of glass should contain 235 white pieces.

San Miniato al Monte in Florence (1461), which combines flat and sculpted decorations all painted in bright color.

Color composition and Color Palette in Luca della Robbia's Glazed Sculptures

Polychromy as All-Over Strategy

Two sculptures of the Virgin and Child offer a good starting point for considering the coordination of many colored glazes within a single composition in Luca della Robbia's work. The first is a small relief roundel of the Virgin and Child (figure 54) in the Corsini Collection, Florence.[322] The second is a much larger full-length statue of the seated Virgin and Child located at the oratory church of San Tommaso d'Aquino in Florence (figure 44).[323] Both sculptures are without early provenance but are now believed to be early works by the artist, dated to the 1440s, and both present brightly colored glazes alternating freely in the hair, robes, and accessories of the figures, with white used only for their skin. What is ultimately most unusual in these works is not the presence of more than two colors, as may of Luca's works technically contain more than two discrete hues when one considers the use of varied blue tones blue or the darker glazes used for eyes of his figures. Instead, it is the significant portion of the available field that the different colors, which are not tonal variations, are permitted to occupy that distinguishes these works. It therefore makes sense to consider them exercises if not experiments in color, for they certainly reveal an enthusiasm for the effects of color and color-combination that can be had in Luca's media that is not common to his other figural works.

[322] See Francesca Petrucci in I Della Robbia (2009), 324-325 and Monica Bietti, in I Della Robbia (1998), 164-166 which also lists the early bibliography.
[323] See Magnolia Scudieri in I Della Robbia (1998), 163-164 which also lists the early bibliography.

Beginning with the Corsini sculpture, it shows the half-length Virgin holding the Child in the Glykophilousa pose stressing the intimate, human relationship between mother and child.[324] The alternation of vivid colors within the small circular field—just thirteen inches across—strikes the viewer immediately. At least three hues of blue are present: deep blue in the ground and the Virgin's robe; intense turquoise for the robe's lining along the Virgin's head and right side; and periwinkle for the her head covering (pulled out of its concealment under her robe by the Child), Christ's shirt, and the irises of both figures. Amid these blues the eye is drawn to the brightness of Luca's white and yellow glazes. He uses white to color the figures' flesh, as well as the neck and belt of the Virgin's dress, and yellow for the haloes. Christ has a cruciform halo, the cross indicated in purple against the yellow. The same purple is repeated, in what seems a subtly lighter tone, in the Virgin's dress, while Christ wears a tunic of apple green. A very dark tone, appearing black but potentially dark blue or purple, is used for the pupils and to outline the iris. A brown pigment appears to act as priming under a pale, milky brown glaze in the hair of the figures. Altogether, at least eight distinct colored glazes appear in the work.

The work's palette is predominately bright, though the strength of the individual colors varies. Two of the boldest, most attractive glazes are the deep blue and turquoise, found in the ground and the robe of the Virgin. The purple, periwinkle, and green glazes used for the rest of the clothing are relatively high in tone but less saturated, and do not draw the eye as strongly. The dominant color chord of red, green, and blues in the clothing recalls Alberti's advice that red complements blue and green when placed between them, while the sharp hue changes between the blue, red, green, and yellow

[324] Marcel Reymond, "La Madone Corsini de Luca Della Robbia," *Rivista d'arte* 2 (1904): 1-8.

areas creates distinct shapes of color within the composition. The perception of separation between those colors is not carried into the skin and hair of the figures, which the artist has made an effort to assimilate through color. It appears that an extremely light-colored brown glaze extends over a darker brown pigment applied directly to the glazed terracotta in the hair, perhaps in the form of a pigment rub.[325] That generously-applied milky brown acts as an intermediary between the underlying dark color of the hair and the white of the figures' flesh, especially along the hairline. The similarity of these glazes lessens the contrast between the two elements, such that the bodies of the saints appear unified in substance and distinct from the brightly garments that surround them.

The color distribution in the Corsini roundel reflects further elements from Antonio da Pisa and Alberti's advice. The balance between blue, red, and green has already been noted (and of course also reflects conventions for coloring the Virgin's clothing). Within the bounds of the figures themselves, the pleasing alternation of light and dark hues recommended by Alberti is created by the light-colored haloes and flesh; the figures' gestures and positioning particularly contributes to this effect. Yet the same sense of variety and beauty cultivated by color contrast is not found between the figures and the blue background. Antonio da Pisa's treatise on glass art recommends using blue for the ground unless the figure wears blue; then the ground may be red.[326] This advice is not followed in the Corsini work, where the Virgin's robe and the ground are the same

[325] This observation is based on my own photographs and short experience of seeing the sculpture in person; the sculpture belongs to the private collection of Prince Filippo Corsini and is visible only by special request. The suggestion of a brown glaze 'rub' made here arises by nature of analogy with the glazed pinecones on the garland of the *Prudence* roundel at the Metropolitan Museum of Art in New York, where the technique of a dark pigment rub under a lighter glaze has recently been identified.
[326] Antonio da Pisa, *Il trattato*, 24.

dark blue color, eliminating a strong sense of distinction between them along her right side. Such repetition is avoided in Luca's other known works, and it is exactly along this unclear border that one finds an unusual feature: a brushwork 'halo' in light blue glaze, which reappears in a wide daub behind Christ's back. The meaning of those marks has remained unclear, and we may wonder if it reflects a desire for color-differentiation between the figure and ground. A final opinion on this question rests on the question of whether the glaze colors were visible to the artist, and in what way, upon application but before firing.[327]

An appealing balance of many colors, recognized by both Alberti and Antonio da Pisa as a criterion for successful color application, also appears in the sculpture of the Virgin and Child at San Tommaso d'Aquino in Florence. The colors are slightly fewer here than in the previous work, for at least six difference glazes can be distinguished. As in the Corsini work, the San Tommaso Virgin's purple dress and blue mantel are separated by a lining of a contrasting color, here a bright green. That green lining is carefully revealed at several points across her body, flashing into sight above her left foot and knee, as well as just behind her right foot. The skin and hair of the Virgin and Child stand out again as bright colors against the richness of the clothing, and while the hair is a more vibrant sweetcorn yellow it is still restrained in relation to the brilliant golden yellow displayed in the Corsini haloes. Moreover, as attractive ("comparescente") colors the yellow and white draw attention to the faces of both figures—with their darkly drawn

[327] Steve Wharton has reopened this old question by proposing that ceramic artists' glazes were indeed visible to them during application and before the second firing: "What you see is what you get: colour in Italian Renaissance *istoriato* ware," in *The Biography of the Object in Late Medieval and Renaissance Italy*, edited by Roberta J.M. Olson, Patricia L. Reilly and Rupert Shepherd (Malden, MA: Blackwell Publishing, 2006). He bases this argument on his own test-preparation of the colored glaze recipes recorded in Cipriano Piccolpasso's mid-sixteenth-century treatise on ceramic art. This opinion does not seem to have been widely adopted in the literature, however.

eyes and brows—and to the body of the Christ Child. Finally, this work uses two purple tones, contrasting the rich reddish purple of the Virgin's dress to the light powder purple of her throne.

In conclusion, we can see the admonitions of both Alberti and Antonio da Pisa at play in these works by virtue of their thoughtful color selection and alternation. Both works employ the tripartite scheme of robe-lining-dress coloring that must have been an act of instinctual color balance in art of all media during the fifteenth century. They furthermore present variations on a single hue, blue in the case of the Corsini sculpture and purple in the San Tommaso work. In both situations bright white and yellow glazes are used for the skin and hair of the figures and stand in contrast with the darker colors used for the clothing. This unites the Virgin and Child's bodies and also giving an air of cheerful brightness to the overall composition as Antonio da Pisa saw it. Such a reading allows us to understand the function of white glaze as potentially different—at least as relative to the meanings explored in Chapter Two—within a more powerfully polychromatic composition like these examples.

Della Robbia Blues

As discussed above, a tonal range of blues features prominently in Luca's glaze palette. Luca uses blue tones in particular as indices of light and markers of space, whether to suggest a space that takes on three dimensions or to emphasize the extension of a flat surface through pattern. Often times the final result creates ambiguity between these two spatial options of pattern and physical presence. We find that Luca viewed his blue tones as a means to engage concepts of light and space right away, from his earliest dated use of the new glazed terracotta medium. That earliest work is the 1441-43 host

tabernacle for the Chapel of Saint Luke at the hospital of Santa Maria Nuova in Florence (figure 8, located today at Santa Maria a Peretola in the suburbs of Florence).[328] The following analysis focuses on the nine circular glazed insets in the marble base of the tabernacle, eight of which depict blue rosettes while the ninth bears the crutch emblem of Santa Maria Nuova, the same emblem on the *zaffera a rilievo* jar examined above. In all nine insets Luca manipulates blue tones, ranging from deep cobalt to pale blue, to give the appearance of light falling from directly above the tabernacle.

The relationship between tonal gradation and light is frequently observed in the eight blue rosettes that flank the crutch emblem, four to either side (figure 55).[329] Each flower presents a double set of petals, six wide primary ones and six narrow ones between them. They are subject to a rather complex pattern of coloring which uses three tones of blue, ranging from dark to light, organized around an imaginary horizontal line that bisects each roundel. Above the line, dark blue is used for the ground while below it light blue is substituted. The petals above the line start with the darkest blue color at their center, radiating toward light blue at the edges against the dark ground, while the order is reversed below with petals graded light center to dark tips against a light ground. The result is to imply light cast from above onto forms that curve outward, with light catching the tips of the upper petals and the fleshy body of the lower petals. At the same time, the organization of these blue tones into concentric circles without blending between them

[328] For the tabernacle see Beatrice Paolozzi Strozzi in *The Springtime of the Renaissance. Sculpture and the Arts in Florence 1400-60*, edited by Beatrice Paolozzi Strozzi and Marc Bormand (Florence: Mandragora, 2013), 468-469, who reports earlier bibliography. Particularly important is Anna Padoa Rizzo, "Luca della Robbia e Verrocchio. Un nuovo documento e una nuova interpretazione iconografica del tabernacolo di Peretola," *Mitteilungen des Kunsthistorischen Institutes in Florenz* 38, 1 (1994): 48-68, which argues that the chapel of St. Luke where the tabernacle was originally displayed was part of the hospital rather than the church of Sant'Egidio (which nonetheless belonged to the hospital complex).
[329] See Carlo del Bravo, "L'umanesimo," 18.

renders the light effect schematic and less compellingly modeled than that we will now examine in the quatrefoil frame in the middle roundel.

The subtler—and less noted—lighting effect in the central roundel concerns a simplified blue quatrefoil frame, which opens onto a white field with the crutch emblem of the hospital (figure 56). Upon closer inspection it appears that the quatrefoil is actually conceived in three dimensions rather than forming a simple, flat field of color. This is achieved by the inclusion of a narrow beveled edge around the internal border of the frame, which appears to recede into space behind its 'front' blue plane. The bevel registers, through changes in its tone, (notional) ambient light that falls from outside and above the frame. Beginning at the bottom lobe of the quatrefoil, the bevel is pale blue and continues—becoming slightly darker—up to the mid-point of the side lobes. At that point it transitions to a deeper blue relative to the front 'face' of the quatrefoil, which continues up into the underside of the top lobe. Though achieved with simple means the result is a compellingly three-dimensional framing device. The suggestion of a spatial effect was certainly not necessary for the success of the emblem and is, therefore, a mark of artistic care and curiosity.

The schematic presentation of light on the petals of the eight rosettes—and the ambiguity between flatness and space that it produces—reappears in Luca's roundels for the Pazzi chapel, perhaps also begun in the 1440s and already briefly discussed in the preceding section on blue glazes. Only four of the twelve apostle roundels display the concentric circles of tonally graded blue which appear to register an emanation of light outward from their white bodies, so that the lightest colors of blue are used toward the center close to the figure, with the darkest blue in the outermost ring. The reason for

abandoning this scheme of blue rings in the remaining eight roundels is not clear; it does not seem to me, as it did to Carlo del Bravo, to be a deliberate choice meant to "respond to" the natural lighting situation in the chapel. There does not seem to be good reason that the concentric circles, themselves registering light coming from the figure at the center of each roundel, should somehow also be registers of the light traveling across the chapel from the tall windows in the entry wall.

Bishop Benozzo Federighi Tomb

The third case study, the tomb of Bishop Benozzo Federighi of Fiesole, was completed by late 1456 or early 1457 and has a fair amount of surviving documentation due to disputes over its payment.[330] It, even more than the Corsini and San Tommaso sculptures or the Peretola tabernacle, serves to show the wide range of coloristic effects possible in the second decade of the medium's production. The tomb combines decoration in marble and glazed terracotta; originally installed on the north transept wall of the church of San Pancrazio in Florence, adjacent to the Federighi family chapel, it underwent two relocations during the nineteenth century before ending up at Santa Trinita where it remains today.[331] The tomb's glazed terracotta ornament takes the form of painting on flat tiles rather than sculptural relief. Executed as opus sectile, the glazed tiles form a rectangular frame for the marble effigy of the Bishop, recumbent on a sarcophagus, overseen by low-relief figures of Christ, the Virgin, and St. John (figure 12). Originally the whole ensemble was raised by an architectural substructure consisting

[330] These documents are published and thoroughly discussed in Hannelore Glasser and Gino Corti, "The Litigation concerning Luca Della Robbia's Federighi Tomb," *Mitteilungen des Kunsthistorisches Institutes in Florenz* 14, 1 (1969):1-32.
[331] Pope- Hennessy, *Luca*, 46-48, 242-244.

of two pairs of pilasters and a bottom platform, which were likely lost at the time of its removal from San Pancrazio in 1809.[332]

The glazed frame features vegetal decoration—leaves, flowers, fruits, and nuts—against a golden ground. A motif of two crossed and knotted white ropes organizes the available surface into a total of twenty-four oval and four circular fields. Vegetation fills twenty-six of the fields, while the final two circular fields in the upper corners of the frame contain the Federighi arms, seven white balls on a blue field. The frame as a whole showcases Luca's ability to work in a pictorial manner, as the flatness of the tiles required him to make form, color, and light visible all by the use of painted glazes. In response to this need Luca employed a much wider variety of effects of hue, tone, and saturation in this work than in any other single preceding work.

Beginning with the green glazes, it can be observed that Luca modulated their hue in order to create a sense of depth and of light within each bunch of foliage. Examination of the oval containing the olive and palm branches (figure 57) reveals two distinct coloring schemes exist. The first is based on the addition of blue and white to yield a steely silver-teal for the olive leaves, while the second uses yellow to obtain a warmer, grassy green in the palm branches. As discussed in a preceding section, green could be made by mixing yellow and blue, and so the mixtures created here are sensible solutions for altering the color of vegetation in order to distinguish between species. The yellow-green is repeated most frequently throughout the rest of the ovals. In particular a somewhat less saturated yellow-green, quite light in tonality, is used to put the lights to pick out the leaves of a branch that are best lighted. The leaves thus appear closer to the viewer, an effect corroborated by the darker color of leaves meant to read as further

[332] Ibid.

away, creating layers of depth. The darkest spaces are colored in one of two techniques, either by using a more strongly saturated green, or by filling a deeper color with appears to be black in the interstices between the rearmost leaves.

A second noteworthy feature of the tomb's glazed painting is its repetition of desaturated and lower-tone colors in six ovals for the yellow pomegranates (figure 58) and the grey pine and cypress cones. In the pine cones the mid-range color is a warm grey with a slight orange cast, lightened by the addition of white and darkened by the addition of black; in the cypress cones above them a mid-tone grey serves as shadow, and they are whitened to a silvery grey to produce the lights. A similar light grey color appeared previously in the Peretola host tabernacle, where it represented metallic garland wreath-ends. The body of the yellow pomegranates, depicted in four fields, is laid in with a pale grey-ochre, perhaps obtained by combining yellow, white, and manganese. Hints of highly saturated orange give warmth to the shadows, while a bright, pale lemon yellow is laid only in the lights. Few of the yellow hues used in the border, whether in the pomegranates or flowers, matches the golden intensity of the yellow glazes that Luca would use subsequently in the Cardinal of Portugal chapel, the Pazzi cupola, or the Stemma of the Medici e Speziali.

Cardinal of Portugal Chapel

Less than five years after the disputes over the Federighi tomb, Luca agreed to participate in the decoration of an even more prominent tomb monument: the funerary chapel of James of Lusitania, a Portuguese prince and cardinal, who died at the age of twenty-five while traveling through Florence on his way to Mantua. His tomb, located in the Monteolivetan church of San Miniato al Monte, Florence, is celebrated as a

Renaissance gem for its coordination of major artistic talent in a variety of media.[333] Antonio di Manetto Ciaccheri designed the centrally-planned Greek-cross chapel, which housed an ensemble of tomb sculpture by Antonio and Bernardo Rossellino, an altarpiece and fresco by Piero and Antonio Pollaiuolo, a *cosmati* pavement by Stefano di Bartolommeo, panel and fresco paintings by Alesso Baldovinetti, and a glazed terracotta ceiling by Luca della Robbia. The contract for Luca's participation survives only in transcription and dates to 1461; it records his obligation for "i lavori da farsi di terra cotta della cupola" and his compensation at 150 florins.[334] The glazed ceiling presents five sculptural roundels against a flat tile background covered with a brightly colored illusionistic cube pattern. Arranged in an x-shape, the four corner roundels contain personifications of the cardinal virtues while the fifth, central, roundel presents the dove of the Holy Spirit circled by seven candlesticks (figure 14).

The ceiling's glazed ornament features two distinct color schemes. The first color scheme is a triad of yellow, green, and black, used to color parallelograms that are painted on large flat tiles with visible joins.[335] The identical parallelograms are transformed optically into a field of cubes by the systematic application of color: bright yellow for the cube faces that appear to receive direct light, apple green for the indirectly lit sides, and black for the dark sides opposite the light source. The green and yellow glazes are bright in color, and their presentation here as part of gradation of light exploits the perception of these two hues as different species of the same genre during this period,

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[333] For the chapel see Frederick Hartt, Gino Corti, and Clarence Kennedy, *The Chapel of the Cardinal of Portugal, 1434-1459* (Philadelphia: University of Pennsylvania Press, 1964).
[334] Hartt, *Chapel of the Cardinal*.
[335] Pope-Hennessy, *Luca*, 48-49, identifies the dark parallelograms as *purple* in color and relates the use of purple (for *gules*) and yellow (for *or*) to the arms of Aragon; Francesca Petrucci, *Luca della Robbia* (Rome: Gruppo Editoriale L'Espresso, 2005) calls them "viola scuro." In this, they follow Marquand, *Luca*, 176, who also observed them to be "dark violet." In his classic study of the chapel Hartt, *Chapel of the Cardinal*, 75, identifies the color as black.

as discussed previously. Yet the light source they respond to cannot be fixed, forming the basis of their trick: each yellow parallelogram abuts two pairs of black and green parallelograms with which it can form a cube. This means that the light can, depending on the combination of parallelograms identified as a unit, appear to come from opposite directions.

The second color scheme is a gradation of blues tones in combination with white, which dominates the five roundels. Each roundel has a wide frame that resembles an entablature curved into a circle. It is composed first of a white outer band with a leaf and dart pattern, followed by a wider middle band, or frieze, of blue scales, and ends with an inner triple-molded band bearing acanthus leaves and an egg and dart motif. The figures are isolated against a circular blue ground inside the frame, except for the dove of the Holy Spirit who is encircled by seven yellow candlesticks. The blue of the center field appears to be the same middle tone found in the second ring of blue scales. Those scales seem to respond to light emanating from the central white figures by virtue of their gradation of blue tones: the lightest blue is found closest to the figure and the tones deepen progressively in each layer until they end against an extremely dark field that appears to be painted with a highly saturated cobalt glaze.[336] Gradations of blue also appear behind the dove in the background of the central roundel, identical to the concentric scheme used in four of the apostle roundels for the Pazzi Chapel.

The result of these two color schemes is to create alternative means of measuring light with color. The first method is by tonal gradation, in which white has been added to a single hue, blue, in order to suggest the increasing presence of light. That blue becomes

[336] Pope-Hennessy, *Luca*, 245, identifies the dark ground color behind the third row of scales as "a manganese purple ground." The view expressed by Hartt, *Chapel of the Cardinal*, 75, that this is "a background of extremely deep blue" seems more accurate.

brighter, and also less saturated, as more white is added to it. The second approach exploits the same inherent tonal differences between hues as in *cangiante* painting, relying on the fact that yellow appears lighter than green, which in turn appears lighter than black. All three colors can therefore remain highly saturated, unlike the blue used in the first scheme. Furthermore, if the dark parallelograms are indeed purple as John Pope-Hennessy and Allan Marquand have suggested, then they are so saturated in color as to become fully opaque and appear black. Confirmation of the nature of this glaze awaits new examination from a close range, and it would provide a compelling subject for technical analysis. Even more likely, however, is the use of a highly saturated cobalt glaze for the dark ground behind the rows of scales in each roundel, and this presents the same principle of using pigment density in order to create a dark color that suggests the absence of light.

Section Five: Conclusion

This chapter has focused on the colors that Luca della Robbia produced in his glazes through the inclusion of cobalt, copper, antimony, manganese, iron, and tin oxides. It has drawn on fourteenth- and fifteenth-century written sources, in particular treatises written by and for painters, in order to examine the choices Luca made about his color palette. In doing so the chapter argues he was aware of properties of hue, tone, and saturation, and their implications for depicting and suggesting ambient light, when mixing and applying those colors. It remains true that the distinctive blue-and-white aesthetic—with which Luca's glazes sculpture are best associated—often remains significant even in works involving many different colored glazes. However the works

discussed in this chapter clearly demonstrate that polychromy played a crucial role in Luca's glazed work and engaged contemporary ideals of variety and contrast that were valued in other media.

In terms of an overall aesthetic effect, in most cases Luca created relatively bright colors by using tin and antimony to lighten the cobalt-, manganese-, and copper-based glazes. The glazed sculptures created by and under Luca della Robbia do not make extensive use of the non-spectral hues that found a prominent place in works by later Della Robbia sculptors, especially those by Giovanni della Robbia and the Buglioni workshop, including a wide range of rich browns and strong flesh tones, and a deep gold. In this regard, the higher key of Luca's colors is—as Alfredo Bellandi has pointed out—in line with the so-called practice of "pittura di luce" by painters such as Giovanni di Francesco who chose not to neutralize their colors with extensive use of black or grey in shadowed areas. Although by mid-century concerns for the imitation of nature had lead artists to carefully modulate the tone of individual colors within a composition according to the fall of light, it had not yet lead to a widespread use of the 'tonal composition' that Leonardo da Vinci in particular would explore from the 1470s onward.

The question of tonal unity will be explored further in Chapter Four, which examines the depiction of space in Luca's relief sculptures through the choices he made about composition, relief level, and color use. That chapter's analysis of these issues begins with a key early work, the *Ascension* lunette that Luca made for the cathedral of Santa Maria del Fiore in 1446-1451, in which he does appear to have considered issues of a naturalistic tonal agreement not observed in the more brilliantly patterned polychrome works considered in this chapter, like the Prince of Portugal Chapel. Therefore while the

exploration of color composition in this chapter has focused more on pattern and variety, Chapter Four will examine the relationship between color and the optical illusion of a fictive space opening behind the relief plane.

Chapter Four: Space

Section One: Introduction

Chapter Four investigates Luca della Robbia's approach to the representation of space in his glazed terracotta relief sculptures. After a brief introduction, Section Two of this chapter examines Luca's first major narrative works in glazed terracotta, the *Resurrection* and *Ascension* lunettes made for the Cathedral of Florence, Santa Maria del Fiore, in 1442-1444 and 1446-1451 respectively. The reliefs present notably different representations of space, shaped by Luca's choices about the composition of his subject and the treatment of relief level and color. The *Resurrection* and *Ascension* commissions appear early in Luca's glazed terracotta production; in fact, the *Resurrection* is the second earliest firmly dated glazed sculpture that Luca made. These sculptures therefore offer a valuable opportunity to examine how the artist explored the formal possibilities inherent in his medium and the ways they might be directed toward the representation of space. Although they represent one of Luca's most important commissions, the most thorough examination of the reliefs was published by John Pope-Hennessy in 1980. His conclusions about the relative value of the reliefs differed from those advanced here, and this chapter therefore examines the lunettes and their context in the church in detail.

Although the aesthetic of placing white figures against a blue ground is today closely associated with the output of Luca della Robbia and his heirs in the Della Robbia workshop, Luca drew this color combination from a well-established tradition of Florentine sculpture. While he may have popularized the aesthetic, he did not invent it. Moreover, the fourteenth-century precedents for placing marble figures against a

reflective blue ground to which Luca undoubtedly looked were themselves part of a larger practice, popular since the late-thirteenth century, of positioning marble sculpture against or within multicolored and reflective fields. Those fields were composed of a variety of media, ranging from decorated glass to colored stones. Section Three therefore examines the history of this decorative practice in order to determine what role color and reflectivity played in the figures' spatial environment, as conceived by various artists, and how these earlier works set the stage for Luca's own treatment of space.

Section Four considers the technical process of making relief sculpture in glazed terracotta, which relies on a clay slab that forms the support for sculpted figures. It argues that this clay slab became an important factor in shaping Luca's approach to representing space, and that Luca, and later Andrea, developed strategies for representing space that preserved a sense of the planarity of the clay slab. Although the artists often approached the qualities of color, relief, composition, and symmetry in quite different ways, both men made formal choices that were limited by—and reflect—the support plane.

Finally, Section Five of this chapter draws upon the preceding arguments in order to point toward directions for further examination of space in relation to Luca's glazed terracotta. Rather than focusing on the role that color and reflectivity play in the representation of space, it considers the relation of the glazed terracotta sculptures to the real physical spaces of their environments. Sculptures made for architectural settings dominate the first three decades of Luca's production in his new medium, and they tend to present a schematic, rather than illusionistic, representation of the space inhabited by their subjects. Using the twelve roundels of the *Apostles* that Luca made for the Pazzi Chapel at Santa Croce from 1442 onward as an example, the section identifies numerous

factors that shaped the approach Luca took to representing space in the individual roundels. These include a need for coordination and replicability that create a sense of unity, as well as a desire to mark the borders of the space which underscored a potential iconographic reference embodied in the site. These concerns further relate Luca's glazed sculptures to the fourteenth-century Florentine precedents discussed in the third section of this chapter, many of which also delineate the boundaries of the monuments they adorn.

Section Two: Cathedral Lunettes

The Commission

Patron and Contract

In July 1442, Luca agreed to a contract with the Operai of Santa Maria del Fiore, to provide a lunette relief depicting the *Resurrection* (figure 4) for the arch over the north sacristy door (figure 15). A copy of the contract survives in the Archivio dell'Opera del Duomo and preserves the details of the commission.[337] Most notably, it bound Luca to follow a model, to work in the medium of glazed terracotta "as can be seen in other works" ("prout videntur alia laboreria fieri"), and to complete the relief within one year. The "other works" in question are not specified but confirm the artist had already established a successful production in glazed terracotta, presumably on a smaller scale. The price of the work in this new medium was not fixed beforehand, but was to be

[337] Giovanni Poggi and Margaret Haines, *Il Duomo di Firenze: documenti sulla decorazione della chiesa e del campanile tratti dall'archivio dell'opera*, vol. 1(Florence: Medicea, 1988), Doc. 1533; see related entries in Docs. 1542, 1546, and 1548. Payments to a Venture Mori for painting and gilding the arch above the *Resurrection* lunette are recorded in Docs. 1547 and 1548. I thank Margaret Haines for discussing the contract records for the *Resurrection* and *Ascension* with me and Giuseppe Giari for his help on my visits to the Archivio dell'Opera di Santa Maria del Fiore.

decided upon later by a group of men chosen by the consuls and Operai. Luca completed the work by February 1444 and was paid, in total, 440 lire, roughly equivalent to 107 florins.[338]

Four years later, in October 1446, Luca accepted a second contract with the Operai to provide a pendant lunette of the *Ascension* (figure 5) for the arch over the cathedral's south sacristy door. The contract for this commission also survives in a copy.[339] It referred to the earlier *Resurrection* as an example of the glazed terracotta material to be used in the second work and also bound the artist to the design established by a model ("secundum designum factum in quodam modello parvo"). It specified that the scene should include the twelve apostles and Virgin Mary and that the mountain and trees of the setting be glazed "according to their colors" ("quod mons sit sui coloris arbores etiam sui coloris"). This request was evidently calculated to avoid the limited palette of blue and white glazes Luca had used in the *Resurrection*, the spatial implications of which are examined in detail later in this chapter. For his second lunette Luca received 500 lire, or roughly 122 florins.[340]

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[338] Poggi and Haines, *Il Duomo di Firenze*, Doc. 1548.

Peter Spufford, *Handbook of Medieval Exchange* (London: Offices of the Royal Historical Society, 1986) provides an overview of European currency from the twelfth to fifteenth centuries; for an explanation of Florentine currency, see especially pp. xix-xxiv. Florence had a bimetallic money system during this period, with various silver-based coins including the *denaro* and a single gold coin, the *florin*. The *denaro* was associated with two moneys of account, which did not exist in coin form: the *soldo*, equal to 12 *denari*, and the *lira*, equal to 20 *soldi* or 240 *denari*. The *Handbook*, 23, lists five exchange rates between the Florentine *florin* and *soldo* for the years 1440-1445, which average at 82.3 *soldi* per *florin*; I have preferred to calculate the exchange for the *Resurrection* at the whole number of 82 *soldi* per *florin*. Given the limited data used to produce this average, it is important to treat the calculation as a rough approximation.

[339] Poggi and Haines, *Il Duomo di Firenze*, Doc. 1563; see related entries in Doc.s 1569, 1570, 1571, 1573, and 1574.

[340] See explanation of the calculation for the *Resurrection* above. Spufford, *Handbook*, 24, lists five exchange rates between the Florentine *florin* and *soldo* for the years 1449-1451, which average at 82.18 *soldi* per *florin*; I have again preferred to calculate the exchange at the whole number of 82 *soldi* per *florin*.

The lunette commissions belong to a busy period of decoration in the cathedral's history. The octagonal crossing area under Filippo Brunelleschi's dome opened in 1436 and needed liturgical furnishings. During the next few years, a large octagonal wooden altar enclosure was built under the dome, to a design by Brunelleschi that had been approved in 1435.[341] Though meant as a temporary solution until final construction could be financed in marble, the wooden structure stood for a century as the cathedral's choir screen and chancel barrier.[342] It was finally replaced by a marble enclosure designed by Baccio Bandinelli in the mid-sixteenth century, but surviving written and visual evidence provide a fairly good sense of the fifteenth-century structure. It had a low parapet with trabeation carrying an architrave, seemingly outfitted to hold candles.[343] When seen head-on, Luca's lunettes flanked the altar enclosure and may have risen just above the level of the candle-bearing architrave, the exact original height of which is unknown. When lit, the candles would have illuminated the altar and nearby lunettes, creating flickering reflections that distinguished Luca's medium from sculptures in marble or polychrome wood and terracotta.

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[341] For the history of choir enclosures at Santa Maria del Fiore, see Poggi and Haines, *Il Duomo di Firenze*, CXX-CXXV; Timothy Verdon, *Sotto il cielo della cupola: il coro di Santa Maria del Fiore dal Rinascimento al 2000. Progetti di Brunelleschi, Bandinelli, Botta, Brenner, Gabetti e Isola, Graves, Hollein, Isozaki, Nouvel, Rossi* (Milan: Electa, 1997), especially the contribution by Louis Alexander Waldman, "Dal Medioevo alla Controriforma: i cori di Santa Maria del Fiore / From the Middle Ages to the Counter-Reformation: The Choirs of S. Maria del Fiore," 37-68.

[342] Waldman, "Dal Medioevo/From the Middle Ages," 37-68 provides the best account of the many changes and planning steps involved in this process.

[343] Visual evidence of the candles in the fifteenth-century is possibly offered by the 1478 medal made by Bertoldo di Giovanni to commemorate the Pazzi conspiracy, which shows indeterminate forms (candles, angels, or candle-bearing angels?) are depicted atop the choir enclosure in the 1478; see Waldman, "Dal Medioevo," 44-45. A new choir commissioned in 1519 and functional in 1520 was provisioned with eighty painted wooden candelabra, giving ten for each of its sides; Waldman, "Dal Medioevo," 51. An early sixteenth-century miniature by Monte di Giovanni shows a large number of candles are clearly located atop the enclosure during a pontifical mass in the choir, but it is not clear if this is before or after the 1519-1520 choir rebuilding; Waldman, "Dal Medioevo," 48, 52-53. An engraving from 1733 of Bandinelli's subsequent sixteenth-century choir, imagined as it would have appeared at its completion in 1572, shows numerous lit candlesticks atop its trabeation; Waldman, "Dal Medioevo," 52.

Within the surrounding crossing and tribune spaces, areas essential to the liturgy took priority for decoration. In addition to the altar enclosure, work began in 1435 on intarsia paneling for the north sacristy, or Sacrestia delle Messe, which hosted a variety of activities including the clergy's preparation for mass.[344] In 1438, Luca completed his marble loft (figure 3) for the main organ, set above the north sacristy door; it was joined in 1439 by a second loft, by Donatello, over the south sacristy.[345] Decoration of the chapel dedicated to Florence's patron, Saint Zenobius, had been renewed in 1428, and in 1439 Luca agreed to make marble altars for two flanking chapels dedicated to Saints Peter and Paul.[346] Early in the 1440s, work resumed on the stained glass oculi for the drum of the dome, in recognition of the fact that the crossing would now serve as the liturgical center of the cathedral.[347] In 1445, Luca signed a joint contract to make bronze doors for the north sacristy, while in 1448 he also made a pair of glazed terracotta angels for the altar of the Chapel of Saint Stephen, newly appointed to house the cathedral's sacrament tabernacle in 1446.[348] Luca's lunettes were therefore made in the midst of the

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[344] For the authoritative account of the sacristy, see Margaret Haines, *The "Sacrestia delle messe" of the Florentine Cathedral* (Florence: Cassa di Risparmio di Firenze, 1983), especially 28-30 for the use of the space and 51ff for its decoration.

[345] For the liturgical function of the lofts as bearers of the cathedral's organs, see Gary M. Radke, *Make a Joyful Noise: Renaissance art and music at Florence Cathedral* (Atlanta, GA: High Museum of Art, 2014).

[346] For the Chapel of Saint Zenobius see Amy R. Bloch, "The Sculpture of Lorenzo Ghiberti and Ritual Performance in Renaissance Florence" (PhD diss., Rutgers University, 2004); and Poggi and Haines, *Il Duomo di Firenze*, XCIV-CV.

For Luca's commission to make marble altars for the Chapels of Saints Peter and Paul, see Poggi and Haines, *Il Duomo di Firenze*, CXIII-CXIV; and the recent catalogue entry by Beatrice Paolozzi Strozzi, "Luca della Robbia. San Pietro liberato dal carcere," in *The Springtime of the Renaissance. Sculpture and the Arts in Florence 1400-60*, edited by Beatrice Paolozzi Strozzi and Marc Bormand (Florence: Mandragora, 2013), cat. no. VII.5, 408-409.

[347] For the chronology of the stained glass windows at the cathedral, and its relation to building progress at the site, see Itō, *La vetrata nella Toscana*, 43-47, 89-100.

[348] For the Sacrament tabernacle and the Chapel of Saint Stephen, see Poggi and Haines, *Il Duomo di Firenze*, CXV-CXIXI; and Haines, *Sacrestia delle Messe*, 121-123. The relocation of the tabernacle was motivated by the pastoral visit of Archbishop Antonio Pierozzi (St. Antoninus) to the cathedral between March and August 1446; at that time he complained that the host was not properly housed. The subsequent decision to move the tabernacle is recorded on December 20, 1446 (Doc. 1094 in Poggi and Haines, *Il Duomo di Firenze*).

early liturgical furnishings for the crossing area, suggesting that they too were considered essential to the sacral use of that space.

Significance within oeuvre *of Luca della Robbia*

The 1442 *Resurrection* remains Luca's earliest documented work entirely in glazed terracotta, and his first work in that medium on a large, public scale. It was doubtless preceded by smaller glazed works, likely devotional sculptures of the Virgin and Child, which testify to the viability and appeal of the medium. Luca had used small glazed terracotta insets to decorate the slightly earlier marble Host Tabernacle (figure 8) for Santa Maria Nuova, made in 1441-1442. In that work he used yellow, turquoise, purple, gray, white, green, and a range of cobalt glazes. The *Resurrection*'s palette is therefore purposefully limited to blue and white, and the success of its glaze on a large scale attests to Luca's mastery of his art. From this point forward Luca carried out a brisk production in the new medium, though he continued to work in other media in the marble and glazed terracotta tomb of Bishop Benozzo Federighi for San Pancrazio (see Chapter Three) and the bronze doors for the north sacristy of Santa Maria del Fiore.

Looking back to the written sources before Vasari, the cathedral lunettes are the most frequently mentioned of all Luca's glazed works. As discussed in Chapter One, Antonio Manetti, the *Libro di Antonio Billi* and the Anonimo Magliabecchiano focus their analysis of Luca della Robbia around his commissions for Santa Maria del Fiore.[349] Manetti, the earliest author, set the literary pattern by using the marble cantoria, bronze doors, and glazed lunettes—conveniently made for a single site—to illustrate Luca's

[349] For the relevant documentation, see Appendix A. Two earlier other authors did not include the glazed lunettes in their discussion of Luca's works at the cathedral site, however: in 1469, Fra Domenico Corella mentioned only the bronze sacristy doors, while in 1510, Francesco Albertini described the marble organ loft and bronze doors but not the glazed lunettes.

facility in varied media. For him and the later authors, the *Resurrection* and *Ascension* exemplify Luca's new medium in which, they note, he made many other works. Ultimately, Vasari incorporated the triad as the launching-point of his 1550 *Vita* of Luca della Robbia and reworded it in 1568 to support his argument that Luca abandoned the difficulty of marble and bronze work for the more amenable medium of glazed terracotta. Vasari, moreover, emphasized the concept of novelty in relation to the *Resurrection*: he noted it was "admired as a truly unique work when it was installed there" and suggested that this public approval moved the Operai to commission the *Ascension*.[350]

Nineteenth- and twentieth-century writers widely recognized the lunettes as Luca's earliest known commissions made entirely in glazed terracotta, but hastened to point out that the artist must have perfected his technique in earlier works. As major early works, the lunettes offered scholars an opportunity to suggest a theory about Luca della Robbia's approach toward color and relief style. Writers took a stand on the wider color palette in the *Ascension*: for example, Charles Callahan Perkins saw it as a telltale marker for a "later" dating, while Leo Planiscig refuted that idea and saw it as the aesthetic choice of an artist who commanded a range of colored glazes from the start.[351] The lunettes also provided a chance to assess Luca's style of sculpting in relief, an exercise in which Lorenzo Ghiberti served as a recurrent point of comparison. The authors do not always agree as to which figures adhere to or diverge from a "Ghibertian" style, but they do share the opinion that Ghiberti represented an outmoded International Gothic style

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[350] Giorgio Vasari, *The Lives of the Artists*, translated with an Introduction and Notes by Julia Conaway Bondanella and Peter Bondanella (Oxford: Oxford University Press, 1991), 70.

[351] Perkins' theory does not make much sense, as he was aware that both works were early. He seems to treat the difference in color between the lunettes as a convenient opportunity to point out a larger trend in the Della Robbia workshop toward the use of color "unsparingly." His comments are cited and apparently endorsed, however, in 1900 by the Marchesa Burlamacchi, *Luca della Robbia* (London: George Bell & Sons, 1900), 26.

which Luca had outpaced. For example, the *Ascension* also received consistent praise, not always echoed in recent literature, for the dignified forms and expressivity of the kneeling apostles. Though their conclusions varied, writers from the nineteenth century forward saw the lunettes as an opportunity to analyze Luca's attitude as a sculptor in regard to his choices about color and relief.

Iconographic program

The lunettes belong to a larger iconographic program for the choir area.[352] Above them, in the drum of the crossing, scenes from the life of Christ fill eight stained glass oculi. The oculus windows include the *Resurrection* (figure 59) designed by Paolo Uccello and the *Ascension* (figure 60) designed by Lorenzo Ghiberti, carried out from circa 1443 to 1445 and each aligned with the glazed lunette of corresponding subject below.[353] The Resurrection and Ascension are therefore presented twice, in different media, on a vertical axis within the crossing and constitute a significant emphasis within the program. It is less easy to state confidently what image decorated the high altar between and below the glazed lunettes (figure 61) in the 1440s, although the reliefs were certainly meant to be viewed in combination with the altar. The earliest image recorded there, a gilded and painted wooden crucifix, dates to the 1460s.[354] It and subsequent decorations made for the same location, which included another wooden crucifix and a

[352] I thank Monsignor Timothy Verdon for discussing with me the decorative program of Santa Maria del Fiore in relation to Luca's lunettes of the *Resurrection* and *Ascension*.
[353] See Poggi and Haines, *Il Duomo di Firenze*, LXXXVII-LXXXIX.
[354] The crucifix was made of gilded wood; Waldman, "Dal Medioevo," 47. Waldman argues that Brunelleschi was responsible for the choice to not use an altarpiece on the high altar, "Dal Medievo," 63 (note 66).

sculpture of the dead Christ, emphasized the sacrificial body of Christ and would therefore resonate with the prominence of Christ's body in Luca's lunettes.[355]

In 1990, Kōichi Tōyama identified a strong connection between the imagery of the *Resurrection* and *Ascension* in the cathedral crossing and the text of Psalm 150, inscribed on the organ loft (figure 3) by Luca della Robbia for the same space. The loft was installed in 1438 over the north sacristy door, above the arch where the *Resurrection* lunette would be placed six years later.[356] Tōyama pointed out that within the Roman breviary, in use until 1911, Psalm 150 was the last psalm to be recited during the daily morning lauds, and it symbolized the daily celebration of Christ's Resurrection. As evidence he cited St. Augustine's interpretation of Psalm 150 as praising the power of God and its superlative demonstration in the Resurrection of Christ. The celebrating children on Luca's loft thus respond to the event of the Resurrection represented below them in glazed terracotta and above them in glass. Tōyama suggests the symbolism may also be extended to Donatello's cantoria with its paired Ascension scenes over the south sacristy portal.

Approach to the lunettes

Having now sketched in the context for the commission and iconography of Luca's *Resurrection* and *Ascension* reliefs, the following sections examine the artist's conception of space with the lunettes in relation to three categories: their subject, relief style, and use of color. These factors have been discussed previously in relation to the

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[355] A new wooden crucifix for the high altar was finished in 1508-1510 by Benedetto and Giovanni da Maiano; Waldman also suggests that the Operai attempted to install a sacrament tabernacle on the high altar on several occasions during the years between 1485 and 1504, "Dal Medioevo," 48-50. Ultimately an enormous marble statue of the Dead Christ would be installed on the high altar in 1552 as part of Baccio Bandinelli's scheme; Waldman, "Dal Medioevo," 56.

[356] Kōichi Tōyama, "La Cantoria di Luca della Robbia: una prova di interpretazione," *Bijutsu-shi / Bijutsu Shigakkai* 39, 1, 1-2 (1990): 14-28.

works, but not in so systematic a fashion as they will be here. The most detailed discussion of the *Resurrection* and *Ascension* is still that by Pope-Hennessy in his 1980 monograph on Luca della Robbia, in which he views the *Ascension* as a less progressive artwork because of its more colorful palette and looser, rhythmic modeling in the body of Christ.[357] This viewpoint has been countered by Giancarlo Gentilini in 1992, who explained the formal differences between the lunettes more convincingly as evidence of experimentation with the possibilities of Luca's medium.[358] Yet the specific details of this creative investigation, and the extent to which Luca selected and combined aspects of both the *Resurrection* and *Ascension* in later works, have not been analyzed.

Each of the three factors—subject, relief, and style—that are considered in the following sections contributes in an essential way to the distinct spatial organizations of the two images. Although these factors ultimately work together they will be addressed in separate subsections to create an ordered comparison. The subsections moreover reflect the order in which Luca would have worked. His first step would have been to design the composition for each scene in line with the contemporary iconography for his subject, before deciding what colors and relief style were to be used. In the case of the *Ascension*, it actually appears that the requirement that Luca use naturalistic colors, recorded in the 1446 contract, affected the style of relief he choose to use in the scene. However, Luca ultimately modeled and fired the terracotta before applying his colored glazes, so relief style will be analyzed before color choice. A section examining the lunettes in relation to Leon Battista Alberti's concept of the *istoria* and its inherent spatial requirements will then follow.

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[357] Pope-Hennessy, *Luca*, 38.
[358] Gentilini, *I Della Robbia. La scultura invetriata*, vol.1, 96.

The *Resurrection*, 1442-1444

Subject

The *Resurrection* (figure 4) is centered on the risen body of Christ, standing on a cloud that floats from the open sarcophagus below. As Pope-Hennessy pointed out, the body of Christ and the tomb serve as strong vertical and horizontal anchors which impart a classical sense of order to the composition.[359] Five soldiers sprawl on the ground, lost in sleep and blind to the miracle above them; the soldier lying prone alongside the sarcophagus offers a simile for the state of death that Christ defeated with his Resurrection. A classicizing aesthetic is further cultivated by their clothing—the armor of the soldiers and the toga that reveals Christ's muscular upper body—and the citation of an Endymion figure from a Roman sarcophagus used for the reclining soldier.[360] Trees frame the scene, rising up to the four flying angels who flank Christ with their arms crossed and hands pressed together adoringly. Christ himself is quietly dynamic in a contrapposto pose, his left hand loosely holding the victory banner while his slightly turned head and right hand direct a blessing toward his left.

The Resurrection event as shown here is not actually described in scripture. Rather, it is left implicit between two other incidents that are recorded, the Entombment of Christ and the three Marys' visit to the empty tomb.[361] For this reason, the Resurrection was not shown in art until sometime around the eleventh century, whereas imagery of the Three Marys at the Tomb had already appeared in early Christian images. Medieval representations of the Resurrection might show Christ standing in, on, or in

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[359] Pope-Hennessy, *Luca*, 37,

[360] See Pope-Hennessy, *Luca*, 37-38, for this and other classical references.

[361] The situation is summed up clearly in Michael Baxandall, *Words for Pictures: Seven Papers on Renaissance Art and Criticism* (New Haven and London: Yale University Press, 2003), 120-122, 125-126. I thank Marietta Cambareri for this reference.

front of his tomb, or climbing out of it, but not until the fourteenth century did the Risen Christ begin to appear *floating* above the tomb. This new iconography developed out of late Dugento and early Trecento illuminated manuscript decoration and resembled scenes of the Ascension, which had long shown Christ rising into the sky with the apostles and Virgin Mary below as witnesses.[362]

Luca's *Resurrection* subtly combines the floating and standing types: his Christ takes a solid, stable stance on the rock-like cloud that floats only inches above the tomb. In 1442, Luca could have examined a number of iconographic precedents for its design in Florence. Lorenzo Ghiberti had sculpted the scene in relief in his first set of Baptistery doors in (1403-24, figure 62). Painted precedents for both Resurrection and Ascension imagery appear in Taddeo Gaddi's panel paintings (ca. 1330-35) for the Armadio of Santa Croce, Andrea di Bonaiuto da Firenze's vault frescoes (figures 63, 64, from 1366-67) in the Spanish Chapel at Santa Maria Novella, frescoes by Niccolò di Pietro Gerini and Spinello Aretino in the sacristy at Santa Croce (figure 65, 1390s), and, finally, Jacopo di Cione's altarpiece (figures 66, 67, from 1370-71) for the church of San Pier Maggiore, Luca's family church and the site of his burial in 1482.[363] While the Spanish chapel and San Pier Maggiore images show Christ high in the sky, Luca's relief most closely resembles the representations by Ghiberti and Niccolò di Pietro Gerini in which Christ

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[362] For the development of the floating Christ iconography, see Elly Cassee and Kees Berserik, "The Iconography of the Resurrection: a Reexamination of the Risen Christ Hovering above the Tomb," *The Burlington Magazine* 126, 970 (1984): 20-24. The development is connected to the initial letters "R" and "A" in the Easter Mass, which present a bisected interior field for decoration. Illuminators therefore began to place the empty tomb below and the Risen Christ above. For earlier sources on Resurrection iconography, see: Hubert Schrade, *Ikonographie der Christlichen Kunst. Die Sinngehalte und Gestaltungsformen. Vol. I Die Auferstehung Christi* (Berlin: Walter de Gruyter & Co., 1932), Millard Meiss, *Painting in Florence and Siena after the Black Death* (Princeton, NJ: Princeton University Press, 1951); Louis Réau, *Iconographie de l'art chrétien*, 3 vols. (Paris: Presses Universitaires de France, 1955-59); Gertrud Schiller, *Ikonographie der christlichen Kunst* (Mohn: Gütersloh, 1966-1991).

For Ascension iconography: Ernest T. Dewald, "The Iconography of the Ascension," *American Journal of Archaeology* 19, 3 (1915): 277-319.

[363] Pope-Hennessy, *Luca*, 14.

floats low, just above the sarcophagus. Luca's relief particularly resembles Niccolò di Pietro Gerini's for its inclusion of the victory banner and the adoring angels to either side of Christ.

The predetermined lunette shape and general assimilation of Resurrection and Ascension imagery during this period thus led Luca's lunettes to share essential compositional elements with one another. A full-length Christ floats against a blue field and above a group of earthbound figures at the center of the reliefs. Both isolate a narrative moment involving many figures: ten in the *Resurrection* and thirteen in the *Ascension*. Each uses loose bilateral symmetry to create a sense of balance without becoming rigidly deterministic, as in the pairs of angels flanking the resurrected Christ or the semicircles of six apostles to either side of the ascending Christ. In both lunettes the hair, skin, and garments of the figures are glazed white, but their approach to the use of other colors varies significantly. While the scenes present what are recognized to be significant differences in their approach to relief, color, and general spatial composition, it is their basic compositional similarity that lends the variations particular visibility and significance.

Relief

Luca balances the levels of relief in the *Resurrection* along the vertical and horizontal axes of its composition. Christ and the three foremost soldiers rise in high relief before the blue surface (figure 68), as if they were fully modeled figures attached to the plane. The shape of Christ's limbs is clearly visible through his robes, the heavy folds of which augment the volume of his torso and legs. The three soldiers shown in full length below Christ occupy real space above the narrow ledge which slopes down from

the sarcophagus face to the doorway lintel. A sense of planarity is established across the surface by the symmetrical relief height of the remaining figures. The two rearmost sleeping soldiers are rendered in low relief and above them the trees and pairs of angels rise to a mid-relief. The horizon line falls nearly at the bottom of the scene, seeming to compress all of the action onto the narrow ledge below the soldiers; the wide, flat face of the sarcophagus enforces this boundary.

The symmetrical disposition of figures over the *Resurrection*'s surface plane offers limited information about their position in depth, despite their varying levels of relief. Christ floats above his tomb, situated just behind the three foremost soldiers who, like him, are in high relief; positioned against the flat ground, they evoke the classical relief tradition known to Tuscan artists from sarcophagi. The two remaining soldiers are tucked in low relief to either side just behind their companions and do not create a great sense of depth. Angels in mid-relief flank Christ and appear directly above the soldiers. While they emerge from behind the trees that the rearmost soldiers lean on, the angels rise in higher relief than those rear soldiers, reinforcing the sense of planarity in the relief treatment. Taken together, the figures form three interlocking relief planes: high for Christ and three soldiers, middle for the angels, and low for the rear soldiers. The close superimposition of these relief levels provides a limited sense of spatial information, situating the figures relative to one another but not within a coherent shared space.

Color

The *Resurrection* is glazed primarily in two colors, with tin-opacified white figures, trees, plants and tomb set against a uniformly deep cobalt field. Blue and white are separate throughout the lunette, mixed only in the clouds at Christ's feet and the tails

of the angels' robes, where blue glaze appears to be brushed on top of the white to create an intermediary tone. A third darker glaze, likely a concentrated cobalt or manganese, renders the pupils and iris outlines of Christ and the angels, whose irises appear to be pale blue;[364] these distinctions are impossible to make out at a distance, however. Finally, like many of Luca's other works, the *Resurrection* seems to have been originally enhanced with gilding, also hard to discern today. In 1914, Allan Marquand recorded gold traces on the hair and wings of the angels, the cross on Christ's halo, his stigmata, the rays shining from his body, and details of the soldiers' armor.[365] There is, however, no record of when this gilding was applied and the traces left today may also include later programs of re-gilding.

The dominant color contrast of white on blue underscores the three-dimensionality of the bodies and objects in the *Resurrection*. Every raised relief element of the scene is colored white, reserving cobalt for the flat ground surfaces and creating a clear disjuncture between objects and the plane before which they are pressed. The location of the five soldiers, sarcophagus, and trees in the lower third of the scene leads to a concentration of white in that zone. Small bands of blue to the far right and left are the only indication of how low the horizon line falls. Blue appears in larger areas around the angels and particularly around Christ, whose body is surrounded by a wide flat margin where gilded glory rays once appeared. The reflective blue margin accents the mass and shape of Christ's risen body, the central focus of the work. Giving more space over to blue in the upper regions of the lunette distinguishes it as an airy and, by extension

[364] Marquand, *Luca*, 74, says the pupils are yellow. This may be true, and would be accomplished with a dilute iron glaze into which the dark iris outline has bled, but is difficult to discern without closer access to the figure.
[365] Marquand, *Luca*, 74; Pope-Hennessy, *Luca*, 37.

heavenly, realm in comparison to the earthbound location of the soldiers. The density of overlapping white figures in that area is less immediately legible from a distance than Christ and the angels above.

The *Ascension*, 1446-1451

In 1446, Luca accepted a contract to make the *Ascension* relief (figure 5) to be set over the south sacristy portal. In a notable and still incompletely understood turn of events, the contract for this work explicitly bound Luca to color the mountain and trees—that is, the landscape elements—of the scene naturalistically. The obvious goal was to avoid glazing them white as the artist had done with the plants, trees, and sarcophagus of the setting in the *Resurrection*. Yet we still understand little about this change. Who devised it: the patron or Luca himself? And for what reason? No explicit motive is given. Pope-Hennessy has suggested the change may reflect the loss of Brunelleschi's guiding vision, following his death in 1446; he saw the architect as a promoter and perhaps even active collaborator of Luca's, and assumed Brunelleschi would have preferred the planar composition and restrained bichromy of the *Resurrection* to the pictorial effect of the *Ascension*'s polychromy.[366] Gentilini instead attributed the choice to the artist himself and saw in it a reflection of Luca's growing sophistication in using the new medium.[367] The implications and potential advantages to this change will be explored in detail in this section.

Subject

The 1446 contract for the second lunette specifies both that it will show the Ascension of Christ with the twelve apostles and Virgin Mary and that the mountain and

[366] Pope-Hennessy, *Luca*, 38.
[367] Gentilini, *I Della Robbia. La scultura invetriata*, vol.1, 96.

trees in the scene will be presented "according to their colors," that is, colored naturalistically. It makes reference to a design model which presumably reflected those features. In the end, the scene included eleven apostles rather than twelve, but uses many more glaze colors than the *Resurrection* and therefore fulfills the terms of the surviving contract record. Christ floats at the top and center of the composition, although his body curves in an S-shape so that it veers to the left of the true central axis. The apostles and Mary are arranged into a receding circle below, split into separate halves in order to reveal the mountain top from which Christ's feet have just lifted. Olive trees flank the space, their trunks incorporated into the circle of apostles below.

The *Ascension* presents what Howard Davis called a gravitational composition, in which the pose, support, and spatial placement of figures within a picture field correspond to the demands of gravity.[368] Davis showed how Giotto di Bondone had explored these issues more than a century earlier by overlapping figures, grouping them low in the composition, and leaving an open field of sky above them. In the *Ascension*, the kneeling mass of apostles indeed obeys gravity. Arranged in a circle which extends backward into the pictorial space, the bodies of the apostles overlap, leaving only the heads of the rearmost six individuals visible. This arrangement establishes their location relative to one another and proves that they kneel on a shared ground plane. The group opens at the center to provide an unobstructed view of the body of Christ and the groundswell, encircled by apostles and Mary, from which he ascends. Leafy branches extend above the group to either side of Christ, but their green and blue coloring

[368] Howard Davis, "Gravity in the paintings of Giotto," in *Giotto e il suo tempo: Atti del Congresso internazionale per la celebrazione del VII centenario della nascità di Giotto*, (Rome: De Luca, 1971): 367-382.

assimilates them to the sky, creating a sense of openness around Christ and above the human figures united on the earth below.

As discussed, the Resurrection and Ascension iconographies increasingly resembled one another in the fourteenth and fifteenth centuries. It should be asked whether the treatment of gravity and space in Luca's *Ascension* follows tradition rather than an artistic choice to pursue greater naturalism. Yet a review of the Florentine precedents for this subject matter, examined earlier in this chapter, shows Luca did not strictly adhere to the treatment of Christ's body in earlier representations. In the paintings by Andrea di Bonaiuto da Firenze and Jacopo di Cione (figures 63-64, 66-67), Christ's ascending body is static, flat, and hieratically frontal, while his risen body is torqued by stronger contrapposto and fluttering draperies, making it more dynamic and implying motion. These characterizations diverge from the strong sense of movement in Luca's *Ascension* and stasis in his *Resurrection*, though his reliefs do reflect the earlier works in making the risen body weighty and the ascending body flatter. The dynamism of Luca's ascending Christ most closely recalls that of Taddeo Gaddi's in the Armadio for Santa Croce. Luca's omission of angels in the *Ascension*, lending openness to the sky, seems to follow a practice of only including angels in one of the two scenes. Thus, while it was common to treat Christ's risen and ascending bodies slightly differently, the more extreme extent to which Luca pushed this divergence in posture, drapery movement, and relief level reflects his personal artistic choice and can be related to the pursuit of a more naturalistic representation.

Relief

In the *Ascension,* Luca used varying heights of relief to locate bodies in space relative to one another with precision within the unified space already suggested by its gravitational composition. The most striking figure in this regard is Christ, to whom the sculptor applies quite low relief. An oblique view of Christ from the lower left (figures 69, 70) shows his right leg to be barely perceptible in three dimensions, with only one of its toes resting atop the cloud that vanishes under him. Christ's body forms an elegant, sinuous curve, a fact that is emphasized by the shallow, linear drapery folds that run up his leg and across his torso and chest. The fluidity of the modeling has long been recognized, and it led Pope-Hennessy to conclude that the *Ascension* represented a sort of stylistic backsliding into the Gothic forms he associated with Ghiberti.[369] The lightness and grace of Christ's body were too marked a departure from the heavy, solid contrapposto pose of the earlier *Resurrection*, which Pope-Hennessy had praised for its consummate classicism. In her review of Pope-Hennessy's book, Anne Markham Schulz considered the *Ascension* inferior to the *Resurrection* and suggested the difference in quality be interpreted as evidence of a workshop hand rather than that of the master Luca.[370]

In 1992, Gentilini made the compelling counter-suggestion that Luca deliberately chose a more fluid relief style to accord with his commitment to veristic coloring in the *Ascension*.[371] Indeed, if an accurate color palette was sought to portray the outdoor environment convincingly, the same goal could be enhanced by using subtly modulated levels of relief to locate the figures within a unified space. In line with this argument, the

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[369] Pope-Hennessy, *Luca*, 38. This quality was also recognized by Cruttwell, *Luca and Andrea*, 72.
[370] Anne Markham Schulz, Review of *Luca della Robbia*, by John Pope-Hennessy, *Renaissance Quarterly* 34, 3 (1981): 421.
[371] Gentilini, *I Della Robbia. La scultura invetriata*, vol.1, 96.

relief treatment of each figure in the circle depends on his or her placement within that formation, establishing their relationships to one another precisely. The four apostles who flank Christ on the side of the circle closest to the viewer are most salient, while the others behind them are staggered in increasingly lower relief. This relief treatment produces the impression of the circle opening backward into what Leonard Rogers has called "notional" space, within the relief plane.[372] In his 1435 *Della Pittura*, Leon Battista Alberti described the result as "an open window through which the subject to be painted is seen."[373] The landscape under Christ contributes to this spatial construction, sloping from low relief just under Christ's toes to jut out slightly over the lintel of the sacristy door.

Luca's modeling choices also have implications for the narrative content and affective potential of the image. Within the lunette's consistent spatial environment, the flattened relief and curving forms of Christ's body gain narrative potential by alluding to his movement up into the open, empty sky above the apostles. His diagonal motion and fluttering drapery abandon the risen body's weightiness, confirming Christ's imminent departure from earthly existence in order to return to heaven. The viewer is moreover invited to witness this event alongside the apostles by the opening in the circle of apostles.[374] The Mount of Olives dominates and shapes the spatial environment, and its protrusion over the lintel of the sacristy opens a path directly to Christ from the viewer's space that is not available in the *Resurrection*. As Cambareri has pointed out, the relative

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[372] L.R. Rogers, *Relief Sculpture (Appreciation of the Arts)*. London: Oxford University Press, 1974.
[373] Leon Battista Alberti, *On Painting*, translated by Cecil Grayson, with an Introduction and Notes by Martin Kemp (London: Penguin Books, 2004), 54.
[374] Marietta Cambareri has made this suggestion beautifully in a recent talk, "Luca della Robbia's *istorie*: The Cathedral Lunettes and the Pistoia Visitation" (Paper presented at the conference, "Material/Immaterial: A Symposium on Fifteenth-Century Sculpture," at the Museum of Biblical Art, New York, February 21, 2015); also see Cambareri, *Della Robbia: Sculpting with Color*, 38.

accessibility of Christ in each lunette corresponds to the themes of seeing in the works. In the *Resurrection*, the soldiers sleep and do not see the event which, it has been noted, is not described in scripture. By contrast, the *Ascension* is primarily about seeing; the apostles witness Christ's departure as a group, and their individualized faces and personal responses to the event testify to their humanity in the face of a miracle.

Color

The 1446 contract specifically bound Luca to render the trees and mountain of the *Ascension* "sui coloris", that is to say according to their natural color. The contract refers to a model (*modello*) so it is possible the manner of coloring was even worked out in the preliminary stages. The final work does present a wider spectrum of glazes than the cobalt blue and tin white used in the *Resurrection*. While an initial glance registers the dominant color chord of white, a dusky light blue, and a deep leafy green in the *Ascension*, closer examination reveals variations in the blue and green hues and the presence of a silvery gray. Luca retained monochrome whiteness for its thirteen figures, making it clear that the injunction for a more lifelike representation did not apply to them. As a result, two color strategies—naturalistic and idealizing—coexist in the work. This contributes to the legibility of action and emotion by isolating the human content of the narrative, resolving what may have been seen as an issue of clarity in the lower zone of the *Resurrection*, where the overlapping soldiers, ground, tomb, trees, and plants are all white.

Monochrome figures appeared in polychrome environments in other Florentine art of the period, like Paolo Uccello's *terra verde* frescoes at Santa Maria Novella and Donatello's stucco roundels in the Old Sacristy at San Lorenzo. Donatello's roundel

scenes from the life of St. John the Evangelist feature small white figures crowded into spaces dominated by red earth tones and governed by perspective constructions. This presentation of white figures on a colored ground within a roundel format may allude to cameo decoration, perhaps allowing the coloring scheme to acquire a classical flavor. The *terra verde* paintings do not seem to share that classical reference, but perhaps offered a firmer point of reference for Luca's color choices in the *Ascension*, given their popularity in late-fourteenth and early fifteenth-century Tuscany. Uccello's *Temptation* (figure 71) at Santa Maria Novella shows monochrome figures done in *terra verde* pigment in a lush garden of naturalistically painted trees and bushes against what was originally a blue sky. Perhaps here, as in Luca's work, one purpose of the dual coloring systems was to distinguish ontologically between the figures and their environment.

Returning to Luca's *Ascension*, close examination of its foliage and tree trunks reveals a more nuanced glaze application than in the earlier *Resurrection*. Colors are mixed freely. Silvery gray blends into a light, electric cerulean in the tree trunks and select leaves which, together with white honeycombed shapes, enliven the masses of deep grassy green foliage. Small plants receive similar coloring in blue and green, while the dulled green mountain rocks read as both lighter and warmer in color than the leaves, showing an occasional copper blush. Luca appears to have chosen the subdued earthy hues and light blue sky in order to ensure a general tonal unity in his palette. The sky is markedly lighter than in the *Resurrection*, suggesting that it contains a quite high percentage of tin oxide. Neither the blue nor green is highly saturated or deep in tone; they therefore hold a similar visual weight.[375] This approach to the landscape colors lends

[375] An interesting aside: in 1980, Pope-Hennessy, *Luca della Robbia*, 38, observed that the glazes in the *Ascension* were "drier and less resonant" than in the *Resurrection*, with "a quantity of shallow firing

a sense of spatial cohesion, with neither sky nor ground vying for attention. The end result is atmospheric, eschewing the lively alternation of brilliant colors seen in the earlier Peretola Host Tabernacle and the undated San Tommaso and Corsini Virgin and Child sculptures, which were discussed in Chapter Three.

Istoria and Pictorial Relief

The *Resurrection* and *Ascension* lunettes are Luca's largest narrative works in glazed terracotta, making them a key site for examining the artist's conceptions of narrative and space. In a lecture on the lunettes at the former Museum of Biblical Art, New York, Marietta Cambareri has recently identified the reliefs as examples of the *istoria*, an image type celebrated as an artist's noblest aim by Leon Battista Alberti in his 1435/6 treatise on painting, *Della pittura*.[376] Anthony Grafton has provided a helpful review of the scholarship on Alberti's criteria for the *istoria*; in short, the *istoria* is an image which depicts a story truthfully and according to rhetorical principles, with an aim to present a dignified moral message or exemplar in a highly affecting manner.[377] The *istoria* can in fact be painted or sculpted, and, though Alberti does not state it directly, his examples reveal that he conceived it as a large image for a public location.[378] One of the most attractive and desirable formal qualities of the *istoria* is variety, or *varietà*, expressed in the gender, age, poses, clothing, and emotional attitudes of the depicted

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cracks" on the surface. He speculated these qualities might be caused by firing a wider color palette or from a reduction in the relief thickness (a point he did not document or explain further). Pope-Hennessy's perception does seem to be borne out when viewing the lunettes from the choir area: the surface of the *Resurrection* has a "wetter," more highly reflective appearance than the *Ascension*, where the reflections appear matte. Close observation upon a ladder and technical examination are required to pursue this point further. It is tempting to speculate whether Luca might have sought to alter the glaze reflectivity in the *Ascension* in order to give greater visibility to its colors.

[376] Cambareri, "Luca della Robbia's *Istorie*."

[377] Anthony Grafton, "*Historia* and *Istoria*: Alberti's Terminology in Context," *I Tatti Studies in the Italian Renaissance* 8 (1999), 37-68; he sums up the qualities of Alberti's *istoria* clearly on page 58.

[378] Grafton, "*Historia* and *Istoria*," 58-63.

figures. However, the figures must always be depicted in a manner appropriate to their station and role within the subject of the image.[379]

Cambareri pointed out that the only contemporary example of an *istoria* that Alberti named in *Della pittura* was Giotto's *Navicella* mosaic, now lost, for Saint Peter's in Rome. A drawing by Parri Spinelli of circa 1420 preserves its composition (figure 72), showing Peter walking on water witnessed by the other eleven disciples. Alberti praised Giotto's ability to reflect the emotional state of the figures in the poses of their bodies:

> Giotto represented the eleven disciples struck with fear and wonder at the sight of their colleague walking on the water, each showing such clear signs of his agitation in his face and entire body that their individual emotions are discernible in every one of them.[380]

As Cambareri noted, the varied facial expressions of the apostles in Luca's *Ascension* fulfill the same representational dictum to include variety.[381] The affective power of these figures was indeed a point of praise for the *Ascension* in earlier scholarship, as discussed in the beginning of this chapter, and the diverse sleeping attitudes of the five soldiers in the *Resurrection* also attest to Luca's skill in varying the expressions and physiognomies of his figures. In each of these examples, the *istoria* in question is a narrative image involving at least ten figures, orchestrated together in a moment of action that presumes a shared physical and psychological space.[382]

Grafton further pointed out that the terms "historia" and "storia" actually belonged to an established vocabulary of art, which was developed well before Alberti broached the subject in *Della pittura*.[383] To support this point, Grafton cited contemporary descriptions of sculptures by Donatello and Luca della Robbia; in the latter

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[379] Alberti, *On Painting*, 71-81.
[380] Alberti, *On Painting*, 78.
[381] Cambareri, "Luca della Robbia' s *istorie*."
[382] Alberti, *On Painting*, 75-76, had advised nine or ten figures at maximum, to avoid overcrowding.
[383] Grafton, "*Historia* and *Istoria*," 60-63.

case he referred to the official documents for Luca's marble organ loft at the Florentine Cathedral, which referred to his sculpted panels as *storiae marmoris* or "histories in marble." The organ loft panels indeed represented groups of children playing musical instruments, dancing, and singing in varying postures and attitudes. Grafton might well have also cited the contract record for the *Ascension* relief, which describes Luca's subject as "unam storiam."[384] Later in the sixteenth century, the *Libro di Antonio Billi* and the Anonimo Magliabecchiano reprised this terminology, referring to the *Ascension* as a "storia" and "historia," respectively.

The coordination of multiple figures who participate in shared action is a central aspect of the *istoria,* and such an event needs to take place in a physical location. This makes depiction of space a latent requirement of the genre. Though this concern is not raised by Alberti directly in his discussion of the *istoria,* it is certainly a chief concern of his elsewhere in *Della pittura*. Earlier in the treatise, Alberti advised the painter to rely on the mathematical system of linear perspective in order to create the illusion of a coherent space behind the surface of his painting which his figures might occupy. The painter should determine the size and location of his figures according to this system, then apply light and shadow to them to show relief. When executed properly, the system allowed the painting to act as a "window" to another—fictive—space. [385] Its ultimate achievement was not only a simulacrum of the natural world, but also the imposition of a 'higher' order, by means of a rigid perspective system, which could symbolize the divine order

[384] Poggi and Haines, *Il Duomo di Firenze,* Doc. 1563.
[385] Alberti, *On Painting,* 54.

that undergirded the world.[386] Although the *Ascension* does not include architecture that would offer clear orthogonal lines, the gravitational composition, sense of recession provided by the composition and use of low relief, and the tonal color palette work together to create the same sense of space opening beyond the picture plan that Alberti advocated.

The previous sections have shown that Luca made careful choices about composition, relief, and color in order to create divergent representations of space in the *Resurrection* and *Ascension*. The demands of *istoria* may have affected these choices: while the *Ascension* required that the apostles act as witnesses to Christ's departure from earth, the *Resurrection* presented a scene in which the soldiers are oblivious to the ongoing miracle. The *Ascension* therefore carried within its subject a requirement for a unified space and a certain emotional tenor. The new approach to color in that lunette, reserving white glaze only for the figures, isolated the human content of the scene thereby making the expressions of the figures better legible.

Section Three: The Sculptural Context of the Lunettes

Previous treatments of space within Luca's *oeuvre*

Luca's subjects of the *Resurrection* and *Ascension* presented him with the opportunity to develop a conception of space for his figures during the very years when this issue was a central concern for Florentine artists. In fact, Luca had already experimented with a relatively complicated spatial arrangement on a smaller scale in a previous commission for the cathedral. In April 1439, three years before receiving the

[386] Charles H. Carman, "Meanings of perspective in the Renaissance: tensions and resolution," in *Renaissance Theories of Vision*, edited by John Shannon Hendrix and Charles H. Carman (Farnham, Surrey: Ashgate, 2010), 31-44.

Resurrection commission, Luca agreed to provide marble reliefs to decorate altars in the Chapels of St. Peter and St. Paul in the cathedral's east tribune.[387] He was to follow a wooden model for the St. Peter altar which would have established its architectural features.[388] For unknown reasons the project was aborted, but two unfinished marble reliefs of the *Deliverance of St. Peter* (figure 73) and the *Crucifixion of St. Peter* (figure 74) survive, now displayed in the Museo Nazionale del Bargello in Florence. The *Deliverance* is the more nearly finished of the two scenes and shows Luca working out the relationship between notional space and varied levels of sculptural relief. Similar spatial issues appear to a limited extent in the roughly carved *Crucifixion*.

The *Deliverance of St. Peter* is one of Luca's few interior scenes and, of those, the most complex on account of its compound narrative. Following standard iconography Luca shows two moments: first the angel greeting Peter in his cell, and then, second, the pair of men walking free outside the prison. Luca's relief looks to an earlier painted version of the scene in Giovanni dal Ponte's San Pier Scheraggio altarpiece for its figural arrangement and small square window.[389] In Luca's work, the story begins in the background: through a window Peter, locked in his cell, is greeted by the angel while in the foreground Peter reappears, now free, following the angel from a room where three prison guards sleep. Luca renders the bench, wall, and ceiling at left in perspective to

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[387] The commission documents are published in Poggi and Haines, *Il Duomo di Firenze*, CXIII-CXIV. For a recent analysis and earlier bibliography, see Paolozzi Strozzi, "Luca della Robbia. San Pietro liberato," cat. no. VII.5, 408-409. For the context of decorative work at the Duomo in these years, and background leading up to them, see Haines, *Sacrestia delle messe*, 34-69, 117-129.

[388] Pope-Hennessy, *Luca*, 32, 233.

[389] Pope-Hennessy, *Luca*, 32, 233-234. The *Deliverance* also appears in the predella of Jacopo di Cione's San Pier Maggiore altarpiece, although Luca's solution in the Bargello relief is closer to Giovanni dal Ponte's composition. The predella of Jacopo del Cione's altarpiece furthermore included a *Crucifixion of St. Peter* that served as a model for Luca's second marble relief for the St. Peter altar. San Pier Maggiore was Luca's neighborhood church until 1446 and his eventual burial site, and the *Resurrection* and *Ascension* reliefs from the same altarpiece by Jacopo di Cione have already been examined in relation to Luca's glazed lunettes for the Duomo. The altarpiece should therefore be recognized as a significant comparative work for Luca's *oeuvre*.

show the room's recession into depth. The spatial construction remains ambiguous on the right around Peter and the angel, and appears unfinished. Half-columns to either side of the relief belonged to the architectural structure of the altar itself and establish a front plane behind which the fictive space opens.[390]

Importantly for our analysis of the *Ascension*, space in the *Deliverance* is not constructed by architecture alone, but also by variations in relief level. Luca carved in low relief to distance the half-length pair of Peter and the angel in the jail cell, visible only through the wall's grated window. He then varied relief levels in the foreground room to show figures' relative locations. Peter and the soldier who rests his head on his shield are both, for instance, in higher relief than their companions behind them. The spear-bearing sleeping soldier, pushed into the far corner, is in the lowest relief. Luca's intent to modulate his carving according to notional depth is clear, but the result is not fully successful. The spear-bearing soldier's relief is too low, making him appear attached to the wall, and his spear is not easily reconciled with the corner above him.[391] The freed Peter and angel are outsized compared to the other figures, and the position of Peter's legs and feet leaves the viewer in confusion about the alignment of his hips and the position of his proper right foot relative to the soldiers. The third soldier, asleep on the floor and only partially visible, appears uncomfortably squashed between semi-column and bench. He is meant to create a sense of space at left, but in doing so contributes to an imbalance between the depth suggested by the three soldiers and the shallow, not fully articulated space into which the angel leads Peter.

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[390] Paolozzi Strozzi, "Luca della Robbia. San Pietro liberato," cat. no. VII.5, 408.

[391] Luca's *Grammar* relief for the Campanile shows a similar awkwardness in the placement of the second pupil, rendered in low relief; he is seated on a receding bench behind his companion and appears squashed against the wall.

Despite these areas of difficulty, the *Deliverance* is an essential comparison to the *Ascension* for its varied levels of relief—and use of lower relief than is typically associated with Luca's work—in a scene that needed to show figures in relation to one another within a unified space. A similar concern with space is manifest to a limited degree in the *Crucifixion of St. Peter* (figure 74), the second relief for the altar. This work is much less finished than its companion. It recalls an earlier version of the scene in Jacopo di Cione's San Pier Maggiore altarpiece and also bears resemblance to a version in the predella of Masaccio's altarpiece for Santa Maria del Carmine in Pisa.[392] While the background itself is flat and offers no spatial information, a trio of soldiers at the right is made to recede in space by means of increasingly lower carving. The middle soldier's right arm and the spear-like object he holds rise in low relief, while the upper body and right arm of a bearded companion have just barely materialized behind him. In this scene as in the *Deliverance*, low relief serves to represent levels of depth within a composition involving numerous figures. The two Peter reliefs therefore prepared Luca to use a lower relief in the *Ascension* as a tool to situate Christ within a continuous space occupied by many figures.

Treatment of Space in Thirteenth- to Fifteenth-Century Sculpture in and around Florence

Large narrative reliefs: Nanni di Banco and Andrea Orcagna

When commissioned, Luca della Robbia's *Resurrection* and *Ascension* were two of the largest relief sculptures in Florence.[393] Only the *Assumption of the Virgin* by Nanni di Banco (figure 75) for the cathedral's Porta della Mandorla and the *Dormition and*

[392] Pope-Hennessy, *Luca*, 233-234, discusses compositional precedents.
[393] Pope-Hennessy, *Luca*, 37.

Assumption of the Virgin by Andrea Orcagna (figure 76) at Orsanmichele exceeded them in scale. This section thus examines the similarities in subject, composition, and coloring shared by these four works before turning to a wider group of related precedents for Luca's lunettes. Each of the sculptures discussed here has a similar narrative subject and compositional solution, centered on the figure of Christ or the Virgin who rises skyward above earthbound figures. The figures ostensibly interact within a shared space, although the degree to which that space is defined varies. All four reliefs moreover belong to a visual tradition of setting white sculpted figures against a colored field. Although the artistic lineage described here has been often recognized in the literature, the role colorful and often reflective grounds play in establishing the spatial environments of these Florentine reliefs has not been systematically examined.

Nanni di Banco's *Assumption of the Virgin* (figure 75) was ordered for the cathedral in 1414, less than three decades before the *Resurrection*, and was finished in 1422 shortly after the sculptor's death.[394] It has a special connection to Luca, because it has been suggested he trained in Nanni's workshop and contributed to carving parts of the *Assumption* relief.[395] This argument is based on stylistic analysis, and, as Mary Bergstein recently noted, the association between certain figures of the *Assumption* with Luca's later work is both generic and convincing enough to suppose, at the very least, that the relief exercised a strong influence on the style of the younger sculptor whether or not he belonged to Nanni's workshop.[396] It is likewise clear that the composition of the *Assumption* within its triangular field offered a compositional model for Luca's

[394] For the relief, see Mary Bergstein, *The Sculpture of Nanni di Banco* (Princeton: Princeton University Press, 2000).
[395] See Chapter One for this suggestion and the relevant citations.
[396] Bergstein, *Sculpture of Nanni*, 161-162.

Resurrection lunette. At its center a large mandorla contains the seated Virgin, while much of the remaining space is filled by angels who either carry the mandorla or play musical instruments. Below, in the lower left corner, a kneeling Thomas receives the girdle of the Virgin, while to the right a tree-climbing bear represents the wilderness setting of the scene.[397]

Nanni symmetrically balances eleven figures and the bear in mid-relief about a vertical axis stretching from the top to bottom of the scene, though the individual figures do not hold rigidly identical poses or physiognomies. In this way Nanni achieves a diversity of figures—a quality later praised by Alberti as *varietà*—within a strong organizing structure, or *compositione*, and this balance of variety and symmetry seems to have inspired Luca in the *Resurrection*.[398] Nanni judiciously differentiates the rear legs of the flying angels by carving them in low relief, but those subtle passages do not alter the overall planar emphasis established by the full, symmetrical composition. It seems the ground plane was originally painted blue, thereby distinguishing the solidity of the figures, bear, and rocky ground from the spatial environment around them;[399] the *Resurrection* shares this coloring solution with the *Assumption*. Saint Thomas and the bear adhere to the requirements of gravity in the lower corners, but the flying angels spread over the remaining surface of the relief preclude a more thoroughgoing sense of gravity within the composition.

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[397] Bergstein, *Sculpture of Nanni*, 68-70, 156-157.
[398] Bergstein discusses this point in relation to the *Assumption* in "*Istoria* and Meaning," 105-107 and *Sculpture of Nanni*, 66-68. She suggests the Porta della Mandorla relief may have guided Alberti in developing his concepts.
[399] Bergstein, *Sculpture of Nanni*, 155, 197; Pope-Hennessy, *Luca*, 17. Documents published in Poggi and Haines, *Duomo di Firenze*, I, docs. 396-397. Records state only that the blue paint was for "gli archi delle due porte," that is, the Porta della Mandorla and the Porta dei Canonici, but it has been assumed the paint was used to color the ground of the *Assumption* relief.

The Porta della Mandorla clearly served as a benchmark for Luca given its location at the cathedral, quite close to the Sagrestia delle Messe, and its potential function as an early site of his training. Yet Nanni's relief was informed by earlier works that also offered a model to Luca della Robbia, chief among which was Andrea Orcagna's *Dormition and Assumption of the Virgin* (figure 76, c. 1352-1359) at Orsanmichele. This large relief fills the entire backside of a glass- and stone-incrusted marble tabernacle (figure 77), made to house a venerated image of the Virgin and Child, and it is the culmination of a series of smaller reliefs of the Life of the Virgin that circle the structure. The upper zone of the relief that features the *Assumption of the Virgin* served as a model for Nanni at the Porta della Mandorla. The Virgin fills the center of this scene, framed by a mandorla and flanked by six angels who support her or play musical instruments, while below Thomas kneels to receive her girdle. In the lower zone, a mourning crowd gathers around the body of the Virgin, laid on her sarcophagus, in the *Dormition of the Virgin*.

The putative space within Orcagna's relief is treated differently within the two zones that correspond to its narrative scenes. The Virgin of the *Assumption* floats in a field of sky that opens above a projecting rocky ground; the latter supports Thomas and is contiguous with the outdoor space where mourners gather in the *Dormition*. As a result the scenes share a single environment, constituted of marble and glass, in which each material lends its own physical qualities to its representational task. Marble gives solidity to the rocky setting and the densely-packed figures who occupy it in the lower half of the relief, while red, blue, and gold glass tesserae dissolve the ground plane above the mourning figures with their mesmerizing color patterns and changeable reflectivity. The

glass has a dual effect: on one hand it dissolves the solidity of the marble ground plane, granting the 'sky' a sense of openness and permeability relative to the earth below, while on the other hand the reflections of light across its surface and bold patterns of its shapes and colors emphasize the material surface of the same ground plane. The end result is equivocal, alternately accentuating and dematerializing the relief surface.

Orcagna's tabernacle represents a pivotal monument for the practice of incorporating colored and reflective materials into fourteenth century marble sculptures. Beyond the inlay of multicolored glass tesserae in the scene of the *Assumption of the Virgin*, the tabernacle is also adorned with pieces of colored marble, colored glass, and a type of painted and gilded glass called *verre églomisé*. The *verre églomisé* and colored stones are used as inlay to decorate the architectural elements of the tabernacle. However, the base of the tabernacle is decorated with a program of small figural reliefs, representing scenes from the life of the Virgin alternating with half-length figures of Virtues, both of which include inlaid blue glass tiles. The tiles fill the entire field in which the Virtues appear, but are used more selectively in the scenes from the life of the Virgin, many of which are set indoors. For example, blue tiles fill the windows in *The Nativity of the Virgin* and *Annunciation of the Death of the Virgin*. As will become clear in the following section, the tabernacle includes a wide range of the colored and reflective materials which were used to decorate marble sculpture in Florentine art from the late thirteenth century through the early fifteenth century. Gathering together inspiration from the work of Nicola and Giovanni Pisano and Arnolfo di Cambio, and from nearly contemporary work at the Florentine campanile, the tabernacle stood complete in 1359 as a spark to the imagination of decades of Florentine sculptors.

White figures, colored ground: sketching a history

A significant practice of embedding the grounds of marble figural relief sculpture with colored and reflective materials existed in and around Florence beginning in at least the late thirteenth century.[400] It continued into the fifteenth century and constituted an important precedent for the sculpture of Luca della Robbia, as well as for some of his contemporaries like Donatello and Michelozzo. The main materials and instances of usage in this tradition are reviewed here in sections on *verre églomisé*, colored marble and *cosmati* work, ceramic, and glass; paint could also serve the same purpose but is less well preserved. As the varied examples reveal, a number of factors determined what effect the colored and reflective grounds have in shaping the spatial environment of the reflective figures. These considerations include the type and possible variety of colored materials used alone or in patterns, their degree of reflectivity, the size of the insets or tesserae used, and the percentage of the composition given to the reflective and colored ground plane.

During this period two general trends can be identified: the colorful or reflective ground plane occupies an increasingly large percentage of the available field, and it also performs a more specific representational function within the environment of the figures. In late thirteenth-century works of Nicola Pisano and his pupils, *verre églomisé* occupies small fields within the interstices of crowded figural compositions. Toward the turn of the fourteenth century, *cosmati* work plays a more prominent role as a ground for Arnolfo di Cambio's marble figures. In both cases, gold, red, and black dominate the color palette and their representative function, if they have one, is to refer to cloth. Shortly thereafter,

[400] Earlier Tuscan sculpture did combine light- and dark-colored stones in striking abstract patterns, such as the early thirteenth-century choir screen at San Miniato al Monte. However, as these patterns less frequently formed the background for figural sculpture they will not be considered here.

in the mid- and late-fourteenth century, blue ceramic and glass tiles at the Campanile, Orsanmichele, and the Loggia dei Lanzi cover a larger portion of the field and assume greater representational specificity by referring to sky. The allusion to sky is often made solely through color and relative location within the relief composition. Yet both trends pave the way for the characterization of space in Luca's glazed terracotta reliefs, where figures often appear against an expansive, uniformly glazed blue field that reads as either earthly or celestial, depending on the presence or absence of other landscape elements.

Verre églomisé

In the late thirteenth-century, the sculptor Nicola Pisano and his collaborators, including his son, Giovanni, and his pupils, Arnolfo di Cambio and Fra Guglielmo, began to incorporate *verre églomisé* into the ground plane of their marble figurative reliefs in Bologna, Pistoia, and Pisa. The technique of *verre églomisé* is accomplished by gilding one side of a piece of clear glass, then incising or removing the gold to make an image or design, and finally painting over the back with one or more colors like blue, black, or red. The image is therefore made visible by an attractive juxtaposition of gold and color; it can be a demanding technique, practiced on a small scale. In his *Libro dell'arte*, Cennino Cennini described this art as "a branch of great piety, for the embellishment of holy reliquaries" and instructs the artist to begin work "with the name of God."[401] Perhaps the medium also carried pious associations when incorporated in monuments like the Arca of Saint Dominic in Bologna by Nicola Pisano (completed by 1267), which seems to have

[401] Cennino d'Andrea Cennini, *The Craftsman's Handbook. The Italian "Il Libro dell'Arte"*, translated by Daniel V. Thompson, Jr. (New York: Dover Publications, Inc., 1933), 112, 113.

been its first use in Italy, or in the later Pistoian pulpits by Giovanni Pisano at Sant'Andrea from 1301 and by Fra Guglielmo at San Giovanni Fuorcivitas from 1270.[402]

In all of these cases the *verre églomisé* decoration features small repeated patterns. For example, in *The Burning of the Books* from the Arca of Saint Dominic (figure 78) square fields are decorated alternately with two types of quatrefoil flowers.[403] Only fragments of glass remain in Giovanni's pulpit for Sant'Andrea in Pistoia, but at least two of them present a complicated decoration of interlocking octagons and composite quatrefoils that contain fluid vegetal designs. The decorated glass is highly visible and regular in the Arca, and much less so in the pulpit, but occupies a small overall percentage of the field in both cases. In the Arca, the varied colors of the glass offer a contrast with the full-length marble figures that crowd the available space, while the repeated patterns and reflective surfaces emphasize the relief plane as a boundary before which the sculpted figures appear. This decoration further enriches the tomb with gold and glass, alluding to sumptuary arts like reliquaries or patterned fabrics.[404]

Colored stones and *cosmati* work

Inlaid patterns made of colored stones were common in Tuscan sculpture before the thirteenth century, as the dichromatic cladding of the Baptistery and San Miniato al

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[402] I thank Robert Williams for suggesting that I consider the sculptures by Giovanni Pisano and Fra Guglielmo in Pistoia. Nicola Pisano's Siena pulpit also includes *verre églomisé* decoration, but only in a stringcourse and not as a ground for the figures. Nicola Pisano seems to have introduced gilt and polychrome glass to Italian sculpture in the Arca of Saint Dominic and Siena pulpit; see Georg Swarzenski, "Das Auftreten des Églomisé bei Nicola Pisano," *Festschrift zum Sechzigsten Geburtstag von Paul Clemen*, Düsseldorf, 1926, 326-328; Carlo Bertelli, "Vetri italiani a fondo d'oro del secolo XIII," *Journal of Glass Studies* XII (1970): 70-77; and for pictorial images, rather than patterned decoration, P. Toesca, "Vetri italiani a oro con graffiti del XIV e XV secolo," *L'arte: rivista di storia dell'arte medievale e moderna* XI (1908): 247-261; and Georg Swarzenski, "The Localization of Medieval Verre Eglomisé in the Walters Collection," *The Journal of the Walters Art Gallery* 3 (1940): 54-68.

[403] Anita Fiderer Moskowitz, *Gothic Sculpture*, 32 and note 23, cautions that much of the gold and red *verre églomisé* on the tomb monument today has been restored. I have not confirmed which remnants are original.

[404] In regard to the latter, Swarzenski, "Das Auftreten," has suggested that the patterns on certain of the Pisano school's *verre églomisé* decorations resemble those found on liturgical robes.

Monte attest, and they often featured aniconic and vegetal motifs. As with *verre églomisé,* this section only examines inlaid decorations that functioned as a backdrop for figural sculpture. The sculptor and architect Arnolfo di Cambio played a large part in the development of this type of art in late dugento Florence, pushing it beyond the local dichromatic tradition.[405] Arnolfo was trained by Nicola Pisano, but the tombs and ciboria he designed reveal his preference to add color and reflectivity by using stone inlay, in particular the specialized technique of *cosmati* work, rather than *verre églomisé*. The ciborium of San Paolo fuori le mura in Rome offers a good example, in which *cosmati* fields located in the spandrels and triangular gables of the structure act as a background for marble figures. While closely bound to the mosaic fields, their feet (and, at times, heads) extend well outside the boundaries of the color into the surrounding marble frame, as in the Adam and Eve. That transgression proves the figures are free to move before the *cosmati* surface, rather than contained within it.

While the ciboria and tombs were made for locations outside Tuscany, Arnolfo left his mark in Florence as architect of the cathedral from 1294 until his death in c. 1301/10. His work included a decorative plan for that city's cathedral façade, for which he executed three sculpture groups over the portals, the *Virgin of the Nativity*, the *Virgin with Saints Zenobius and Reparata and four angels* over the central portal, and the *Death of the Virgin*. Despite subsequent additions to the façade and its eventual demolition in 1587, Arnolfo's plan is fairly well understood from visual records.[406] *Cosmati* work

[405] For Arnolfo's influence on subsequent Florentine sculpture, see Gert Kreytenberg, "L'eredità di Arnolfo di Cambio nel corso del Trecento," in *Arnolfo: alle origini del rinascimento Fiorentino,* edited by Enrica Neri Lusanna (Florence: Edizioni Polistampa, 2005), 405-409.

[406] Particularly important is a detailed drawing by Bernardino Poccetti, made just before the façade's destruction in 1587. For recent scholarship on the façade with earlier bibliography, see the edited volumes which mark the seventh centenary of Arnolfo's death in 2002: *Arnolfo: alle origini*; *Arnolfo's Moment.*

featured prominently in his design, both in blind bifora windows on the lowest register of the façade and in a colored marble panel set behind the *Virgin with Saints* (figure 79).[407] In the latter instance, geometric *cosmati* patterns are set into pink marble, most strikingly in an eight-pointed star halo that aligns with the Virgin's head: an exemplary illustration of coordination between carved figures and the colored fields behind them.[408]

As in the earlier *verre églomisé* work, Arnolfo's colored marble and *cosmati* surfaces delimit the space within which the carved marble figures appear. Though *verre églomisé* often includes representational details such as flowers, leaves, and even animals, the colors and patterns used there and in Arnolfo's grounds do not strive to represent illusionistic space when viewed altogether as an ensemble. They focus instead on pattern, as constituted by color and shape, which acts as a foil to the sculpted mass of the figures. The organization of Arnolfo's *Virgin and Saints* scene is devised in order to emphasize the real space of their niche, rather than in a notional space behind the picture plane.[409] A related approach appears in later niches at three of the city's most important monuments: most famously, at Orsanmichele, but also on the cathedral and campanile

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Acts of an International Conference. Florence, Villa I Tatti, May 26-27, 2005, edited by David Friedman, Julian Gardner, and Margaret Haines (Florence: Leo S. Olschki, 2009).

[407] For the decorative panels on the lowest register, see Enrica Neri Lusanna, "La facciata arnolfiana e l'eredità di Arnolfo," in *Santa Maria del Fiore: the Cathedral and its Sculpture. Acts of the International Symposium for the VII Centenary of the Cathedral of Florence. Florence, Villa I Tatti, 5-6 June 1997*, edited by Margaret Haines (Fiesole: Edizioni Cadmo, 2001), 173-194.

[408] Results from a technical analysis of this material are published in Susanna Bracci, Emma Cantisani, Fabio Fratini, Chiara Colombo, and Claudia Conti, "Studio dei materiali, dei rilievi e dei frammenti lapidei della facciata arnolfiana," in *Arnolfo: alle origini*, 503-507.

[409] The sculptures are discussed in Enrica Neri Lusanna, "'Venustius et honorabilius templum'," in *Arnolfo alle origini del rinascimento Fiorentino*, edited by Enrica Neri Lusanna, 201-223 (Florence: Polistampa, 2005). Also see Gert Kreytenberg, "Il concetto scenico nell'opera scultorea di Arnolfo di Cambio," in "Arnolfo di Cambio: il monumento del Cardinale Guillaume de Bray dopo il restauro," special issue, *Bollettino d'arte* (2009): 67-76. My argument concerns the central scene of the *Virgin and Saints* but not the flanking overdoor scenes of the *Virgin of the Nativity* and the *Dormition of the Virgin*, where the ground does not survive. In the *Virgin of the Nativity*, animals in low relief do seem to have created a more pictorial effect.

façades.[410] At Orsanmichele in particular, life-sized sculpted figures exist within the space of their niches, decorated with elaborate patterns in colored stone and glass inlay. Many of the niches were made in the early fifteenth century, showing the relevance of this visual tradition well into Luca della Robbia's lifetime.

Ceramic

The cathedral campanile also hosts an earlier program of sculpted reliefs, perhaps partly designed by Giotto but executed by Andrea Pisano and his workshop in the period c.1334-post 1343.[411] Divided into two levels, its iconography presents a Scholastic compendium with twenty-six hexagonal reliefs depicting Genesis scenes and the Labors of Man and twenty-eight diamond reliefs showing the Planets, Virtues, Liberal Arts, and Sacraments.[412] The diamonds form a band of decoration above the hexagons, and have long been noted as a precedent for Luca's glazed art because each one presents a sculpted marble figure set against a ground field of small blue-glazed maiolica tiles.[413] Those sculpted figures, for example the *Venus* (figure 80, mid-1340s), occupy the middle and lower zones of the relief with a seat or solid ground beneath them. The weighty body of *Venus* sits at the center of her diamond, her cushion reaching to its bottom, and her head

[410] For the simultaneous development of the Campanile and Orsanmichele niche programs, see Marvin Trachtenberg, *The Campanile of Florence Cathedral: "Giotto's Tower"* (New York: New York University Press, 1971), 87.

[411] Andrea Pisano began working on reliefs for the Campanile even before the death of Giotto in 1337, after which Andrea himself became Capomaestro of the project, and the 1334 start date used here follows Moskowitz, *Gothic Sculpture*, 137-139. Andrea seems to have left Florence in 1343. The diamond reliefs are thought to date after 1343 and thus to have been carved under another master, Moskowitz, 153.

[412] For a classic account of the campanile, its sculpture and iconography, and for earlier bibliography, see Marvin Trachtenberg, *The Campanile of Florence Cathedral: "Giotto's Tower"* (New York: New York University Press, 1971). For striking photographs of the hexagonal and diamond reliefs at varying stages of a sorely needed cleaning campaign (but no significant discussion of the blue maiolica tiles or the cleaning), see Mariella Carlotti, *Il lavoro e l'ideale. Il ciclo delle formelle del Campanile di Giotto* (Florence: Società Editrice Fiorentina, 2008).

[413] For the only extensive discussion of these tiles, see Anna Moore Valeri, "Il Campanile di Giotto e le origini della maiolica blu in Toscana," *Faenza Bollettino del museo internazionale delle ceramiche in Faenza* 72, 5/6 (1986): 281-289. Analysis of maiolica fragments from the tiles confirms the presence of tin and the use of copper, rather than cobalt, as a colorant.

stopping short of its peak. Blue maiolica fills every available interstice. The composition suggests the gravity and weight of the marble-carved areas through juxtaposition with the blue field that can read as sky by virtue of its color, high position within the composition, and its less solid appearance under changing light reflections.

One other relief sculpture at the Campanile, the Virgin and Child (figure 81) attributed to Andrea Pisano, offered a crucial model for Luca's work.[414] Its carved marble figures appear in half-length against a field of the same blue maiolica tesserae used in the diamond reliefs. The relief crowned a door in the Campanile's north side which was connected, by a bridge, to the cathedral. The triangular shape of its frame, the cut-off figures, and the homogenous blue ground combine to suggest the motif of a window opening. Yet the precise location of the Virgin and Child within the space is not clear: the torso of the Virgin disappears midway *into* the frame, not behind it. The blue color of the tiles may allude to sky, but the figures are not presented within that space. This ambiguity was clearly visible from the bridge to the Campanile, and as Moore Valeri has pointed out, Luca himself had good opportunity to examine the relief as he made five hexagonal reliefs to be installed below the Virgin and Child in the late 1430s, when the bridge had been removed.

The Campanile diamonds mark an important step in the development of colored grounds traced here. Using ceramic tesserae as a reflective ground for marble sculpture was uncommon in the fourteenth-century, although glazed bricks and plates (*bacini*) had been embedded in walls as architectural decoration in regions across Italy even earlier

[414] See catalog entry by Mirko Santanicchia in *I Della Robbia. Il dialogo tra le Arti nel Rinascimento*, edited by Giancarlo Gentilini (Milan: Skira, 2009), cat. 18, 319.

than the thirteenth century.[415] The Campanile diamonds therefore testify to a potentially new awareness (perhaps on the part of Pisano or his patrons) that maiolica tiles could complement carved figures with the same desirable qualities of color and reflectivity theretofore sought in glass, mosaic, and colored marbles. The diamonds, moreover, differ from earlier solutions by using a solid field of tesserae of identical shape, color, and size, eschewing the variety of hue and pattern seen in the *verre églomisé*, *cosmati*, or colored marble. The uniformity of these choices favors a sense of unity in the ground field, a necessary element for giving a sense of coherent space.

The Campanile reliefs are moreover significant for their symbolic evocation of the sky through the blue glazed tiles. The uniformly colored tiles present a homogenous expanse and, in the diamond reliefs, they are located in the upper portion of the composition, above and around the marble figures. The allusion to sky rests exclusively on the choices of color and composition. It is a symbolic rather than representational evocation of sky, for the artist does not attempt to depict what sky actually looks like through the inclusion of details like clouds or atmospheric perspective. Equally unclear is the question of whether the blue field refers to an earthly sky and therefore attempts a naturalistic depiction, or whether it is meant to evoke a heavenly setting. It is likely that the artist did not consider this distinction, which would carry greater resonance in the fifteenth century.

Glass

Glass tesserae already appeared in Orcagna's tabernacle from the 1350s, but are also found in the Loggia dei Lanzi Virtue sculptures from the 1380s and some of the outdoor niches from 1399 at Orsanmichele. At the Loggia dei Lanzi (formerly della

[415] Valeri, "Campanile di Giotto," 281-282.

Signoria) marble figures of the four Cardinal and three Theological Virtues were carved in 1383-1391 to designs by Agnolo Gaddi.[416] Paint and gold originally augmented the hair and robes of the figures, such as the *Temperance* (figure 82), producing a strongly polychrome effect against their grounds of blue inlaid glass. Much of the glass seen today is later restoration, but the figures were originally set against a glass inlay carried out by Frate Leonardo, a Vallombrosian monk.[417] The glass reaches down below the feet of the seated figure of *Temperance*, such that it appears to form a spatial environment within the trefoil shape that frames the figure. The Virtue figures at the Loggia bear resemblance to the bust-length figures at the frieze level of Orcagna's Orsanmichele tabernacle, which appeared in quatrefoil frames against a glassy blue ground.

Turning to Orsanmichele, the niche of the Medici e Speziali, dated to 1399 by a carved inscription, demonstrates the rich setting that glass could provide for a statue group. It displays a marble statue of the Virgin and Child, an emblem of the guild, carved by Pietro di Giovanni Tedesco. Seven rectangular panels surround the figures, each inlaid with an alternation of blue, red, and gold glass. The panels bear two patterns, each based on three basic shapes: gold hexagons, red diamonds, and blue diamonds. These shapes and colors are not used in a representational way, but rather form a pattern that—together with their reflective material—emphasizes surface. Glass, mosaic, colored stones, and other pigments were used freely in many of the Orsanmichele tabernacles.[418] Many still bear rich encrustation—the niche of the Arte dei Pellicciai serves as a second example—but documents suggest much has also been lost. The Orsanmichele niches merit further

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[416] For the Loggia dei Lanzi, see Carl Frey, *Die Loggia dei Lanzi zu Florenz: eine quellenkritische Untersuchung* (Berlin: Hertz, 1885).
[417] See the documented payment of July 20, 1386 in Frey, *Die Loggia dei Lanzi*, 306.
[418] Hayden B.J. Maginnis and Andrew Ladis, "Sculpture's Pictorial Presence: Reflections on the Tabernacles of Orsanmichele," *Studi di Storia dell'Arte* 5/6 (1994/1995): 41-54.

study in terms of the conceptualization of space around sculpted figures in the fourteenth- and fifteenth-centuries, but they certainly demonstrate that marble and bronze sculpted figures were often appreciated against a colored and reflective ground.

Conclusions

In fourteenth- and fifteenth-century Florentine art, sculpted figures within a public architectural setting more often than not appeared against a colorful ground. That ground may belong to the fabric of their environment, as in the niches at the Cathedral, Campanile, and Orsanmichele, or belong to the sculptural relief itself, as in the examples by Andrea Pisano, Andrea Orcagna, and, ultimately, Luca della Robbia. The concept of a purely "monochrome" work, a concept under increasing scrutiny in studies of Renaissance art, does not seem to be the rule.[419] In fact, a truly monochrome treatment was rare and often occurred in small scale reliefs, where the artist could count on close viewing conditions for his work. The *stiacciato* reliefs developed by Donatello during this period are a perfect example of the concern for visibility. Two early examples of Donatello's *stiacciato* marble carving that remain *in situ*, the *Saint George and the Dragon* (figure 83, ca. 1417) for the original niche of Armorer's Guild at Orsanmichele (today in the Bargello) and the *Assumption of the Virgin* for the tomb of Cardinal Rainaldo Brancacci at Sant'Angelo a Nilo in Naples, are located low within a larger monument where viewers could have examined them closely. In contrast, sculptures that were further away from the viewer benefitted from being set off by a colored background.

[419] See Chapter Two of this dissertation for a discussion of recent research on monochromy in early modern Italian art.

The use of colored stone and glass inserts in the spatial environment of marble figures continued in fifteenth-century relief Florentine sculpture on a smaller, domestic scale during the years when Luca was making his glazed sculptures, and it will only be reviewed here briefly. When using colored and reflective media, some fifteenth-century artists maintained an emphasis on pattern and repetition derived from earlier works. This is the case in the *Virgin and Child* attributed to Michelozzo at the National Museum of the Bargello (figure 84, fifteenth century), where deep blue octagonal glass insets alternate with a rosette-and-cord motif in the ground behind the figures, and in the *Madonna and Child* (or "Piot Madonna") by Donatello at the Louvre Museum (figure 85, c. 1460), a terracotta roundel in which the Virgin and Child appear in relief, possibly gilded in their entirety, against a ground of glass disks decorated with colored wax amphorae and cherub heads.[420] Others works, linked to Donatello, take a different approach.[421] In the Madonna del Perdono (figure 86) for the Cappella delle Grazie at Siena Cathedral, blue glass insets ring the receding coffer-like ring that frames the figures. A related approach appears in a second relief at the Bargello, the Madonna Goretti Miniati, where blue glass insets form the panes of a window behind figures of the Virgin and Child.[422]

The previous pages have traced an initial trajectory of the relationship between colored and reflective grounds and white figural sculpture in Florentine sculpture from the thirteenth to early fifteenth centuries. It is necessarily limited and dependent on the

[420] See Catalog no. 6, 114-116, in Bruce Boucher, ed., *Earth and Fire: Italian Terracotta Sculpture from Donatello to Canova* (New Haven and London: Yale University Press, 2001).
[421] The approach taken in these works relates to that taken in the small scenes from the life of the Virgin in the base of the Orsanmichele tabernacle, where blue glass pieces are inserted into the window spaces.
[422] Museo Nazionale del Bargello, *Omaggio a Donatello 1386-1986. Donatello e la storia del Museo* (Florence: S.P.E.S., 1985), 271-275.

survival of the original ground of the relief. This survival rate is much higher for glass, mosaic, and colored stone than it is for painted grounds, and yet we know from Nanni di Banco's *Assumption of the Virgin* that paint was also used in this capacity. A relief of the *Coronation of the Virgin* attributed to Dello Delli (figure 87, ca. 1420-1424) for the church of Sant'Egidio at the Ospedale di Santa Maria Nuova in Florence is also often cited as a precedent for Luca, as it preserves traces of blue paint in the ground behind Christ and the Virgin; however, here the figures themselves also bear traces of polychromy.[423] A more complete account of the traces of paint on sculptures of this period is needed. This section therefore closes with a reminder that relief sculptures with painted grounds represent a tradition essential to Luca's work, but extremely difficult to recover and study today.

Luca della Robbia in light of earlier tradition

Unlike the earlier precedents that combine marble with glass or glazed tiles, Luca made his works entirely in glazed terracotta. As a result, his figures and ground share identical surface qualities of texture and reflectivity, affording them a natural sense of unity. The same sense of material unity allowed contemporary marble works by Donatello, most famously in the *St. George and the Dragon* (figure 83), to simulate unified, extensive spatial environments. In that relief, Donatello left the background uncolored and carved it in increasingly low relief according to linear perspective, in order to suggest a notional space behind the relief plane.[424] Luca's cathedral lunettes do not

[423] See the catalog entry by Brunella Teodori in Beatrice Paolozzi Strozzi and Marc Bormand, eds., *The Springtime of the Renaissance. Sculpture and the Arts in Florence 1400-60* (Florence: Mandragora, 2013), IX.2, pp.458-459.

[424] Marco Collareta has made a similar point about the spatial unity that total surface gilding afforded to the figures and ground in Lorenzo Ghiberti's ten relief panels for the *Gates of Paradise*; "Oreficeria e scultura nell'arte fiorentina del Quattrocento," in *The Springtime of the Renaissance. Sculpture and the Arts*

function in exactly the same way: his figures rise in higher relief, and the eye-catching juxtaposition of blue and white glazes creates a stronger visual contrast between figures and setting. Yet it is clear that spatial integrity was a concern for Luca, as he takes care to disguise the joins between the glazed terracotta pieces that compose his works as completely as possible. He succeeds in this endeavor because, unlike the small tesserae used in earlier sculptures, the glazed pieces are relatively large in proportion to the relief's surface. For that reason, they do not so strongly fragment or dissolve the ground field.

A look at Luca's *Resurrection* and *Ascension* reveals the strategies he used to disguise the joints between glazed sections. Luca concealed the seams between the pieces that make up the lunettes with such skill that they cannot always be easily identified. Gentilini counted at least eighteen pieces in the *Resurrection*, while no corresponding number has been published for the *Ascension*.[425] The figures in the *Resurrection* are fired in large pieces: Christ is made in two pieces, the joint hidden by drapery falling across his waist; the lower right soldier is made in one piece barring his left foot; the lying soldier in two, joined at his skirt; the far left soldier in one piece except his left leg joined to the sleeping soldier below; the angels each appear to be made in a single piece. Luca hides joints by cutting them along pre-existing lines in the composition, such as the outlines of figures or places where two color fields meet, fostering the impression of a unified

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in Florence 1400-60, edited by Beatrice Paolozzi Strozzi and Marc Bormand (Florence: Mandragora, 2013), 98.

[425] Giancarlo Gentilini, "La scultura fiorentina in terracotta del Rinascimento: tecniche e tipologie," in *La scultura in terracotta: tecniche e conservazione*, edited by Maria Grazia Vaccari (Florence: Centro Di, 1996), 80, gives the number eighteen . My own count, based on photographs, equivocates between eighteen and nineteen large pieces. The count excludes the smaller pieces that fill areas of improper alignment to the right of the palm tree and under the top right angel. It is very difficult to make a count of the separate pieces from which the *Ascension* is made on the basis of photographs alone, a testament to the sculptor's skill in placing his joints.

material surface and concealing, as far as possible, the reality that the *Resurrection* and *Ascension* were comprised of many smaller pieces.

The glazed sculptures' resultant visual unity was intentional and the source of admiration for at least one early modern observer. Giorgio Vasari praised exactly this quality in his 1568 *Vite*, in a passage that describes the glazed terracotta ceiling and pavement that Luca made for the private study, or *studiolo*, of Piero de' Medici in the Medici Palace on Via Larga.[426] Twelve roundels showing the *Labors of the Months* (figure 23), now in the Victoria and Albert Museum, formed part of this ceiling decoration. Each roundel presents a painted scene modeled together with a frame of white molding, and it is believed that they were originally joined by flat glazed terracotta panels painted to look like porphyry and serpentine. The ultimate effect was of an inlaid barrel vault with regularly spaced circular openings to 'heavenly' scenes. Vasari, who would have seen the ceiling *in situ* before its dismantling after 1659, wrote: "Luca conducesse questi lavori a tanta perfezzione che così la volta come il pavimento paiono, non di molti, ma d'un pezzo solo."[427] Although the ceiling and floor constitute a different type of decoration than Luca's figural narrative scenes for the cathedral, the principle of hiding the junctures between pieces remains the same in both commissions.

Section Four: Physical Construction of Della Robbia Relief Sculptures

The issue of unity between the constituent parts of the lunettes raises the question of how they were constructed to begin with. This section outlines the technical process of building clay reliefs, proposing that it strongly influenced the type of spatial construction,

[426] Vasari did not discuss the *studiolo* decorations in the 1550 *Vita* of Luca della Robbia.
[427] Giorgio Vasari, *Le vite de' più eccellenti pittori, scultori e architettori nelle redazioni del 1550 e 1568*, edited by Rosanna Bettarini and Paola Barocchi (Florence: Sansoni, 1966-), vol. 3, 54.

dominated by a flat blue field, that Luca della Robbia often favored in glazed sculptures. Techniques of physical manufacture are better studied in Luca's smaller-scale modeled reliefs, which can be examined from both sides, rather than in large ensembles like the *Resurrection* and *Ascension* that remain immured in their original locations with their backsides inaccessible. The smaller works follow a common procedure, in which the sculptor first laid out a flat slab of clay of uniform thickness, and then built or applied figures and other decorative details to its surface. The slab served as a ground plane, similar to a wooden panel primed for tempera painting, constituting a flat surface onto which Luca either added clay to be modeled or attached separately-modeled figures. The material fact of this starting plane offers one explanation for why both Luca and, later, Andrea can be said to display an emphasis on the *plane* in otherwise different approaches they take to the construction of space.

In a 1998 essay on Della Robbia technique, Maria Grazia Vaccari described the process of making a relief sculpture in terracotta.[428] Working on a plane of stone or wood propped on a lectern-like support, the artist laid out sheets of paper on which to spread a layer of clay. Sketching the design into this ground, he could then add or subtract clay and model it to achieve the desired image. These steps are confirmed by the technical study of a small devotional relief from the circle of Verrocchio at the Museum of Birmingham.[429] In that work, the surface plane was formed in an additive, piecemeal manner, by taking handfuls of clay and smoothing them to a relatively even height over

[428] Maria Grazia Vaccari, "Tecniche e metodi di lavorazione," in *I Della Robbia: e l'"arte nuova" della scultura invetriata*, edited by Giancarlo Gentilini (Florence: Giunti, 1998), 99-101.
[429] Stephen G. Rees-Jones, "A Fifteenth Century Florentine Terracotta Relief. Technology – Conservation – Interpretation," *Studies in Conservation* 23, 3 (1978): 95-113. This source is cited by Vaccari.

the working surface.[430] The artist may have sketched a guiding design into the clay, though any evidence of it would have been covered or destroyed by the subsequent building up of the figures.[431] The slab of clay could also be created by slicing an even section off of a larger block of raw material, as Cipriano Piccolpasso described in his *Three Books of the Potter's Art*.[432] Whatever method was used, it was essential to maintain an even thickness of the terracotta throughout the work to prevent the formation of cracks and breaks during the drying and firing processes. This same concern required the artist to hollow out the figures in highest relief, in order to ensure their walls were of similar thickness to the ground slab on which they were mounted.[433]

The recent conservation of glazed sculptures by Andrea della Robbia and his workshop attest to the accuracy of the techniques described by Vaccari and Rees-Jones. Andrea's famous *Innocenti* roundels for the Ospedale degli Innocenti in Florence from 1487, have recently undergone conservation work at the Opificio delle Pietre Dure. It appears that the circular field for each roundel was manufactured by pounding clay out under wooden boards on a flat surface. Turning the circle over, the flat side became the surface for decoration to which the putti were attached.[434]

Luca does not appear to have sculpted or incised into the clay slab in any of his works. Remembering that the slab served as a physical support laid over a larger board or table during the sculpting process, this approach makes some sense. Its thickness, just a couple of inches, did not provide much depth into which to carve, and carving into it

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[430] Rees-Jones, "A Fifteenth Century Florentine Terracotta Relief," 99, figs. 5, 7.
[431] Ibid., 99-102.
[432] Cipriano Piccolpasso, *The Three Books of the Potter's Art. A facsimile of the manuscript in the Victoria and Albert Museum, London*, vol.2, translated and introduced by Ronald Lightbown and Alan Caiger-Smith (London: Scolar Press, 1980), 42-43.
[433] Rees-Jones, "A Fifteenth Century Florentine Terracotta Relief," 102.
[434] I thank Laura Speranza at the Opificio delle Pietre Dure and Marietta Cambareri for including me in a discussion of the recent conservation of the Innocenti roundels.

would also create different thicknesses of the terracotta walls throughout the work, which might lead to uneven drying and firing of the work, increasing the chance of serious cracks or breaks. Yet relatively shallow incisions could be made into the clay layer without risking the negative consequences of more serious excavation, so Luca's avoidance of this type of treatment was not entirely dictated by technical concerns. The use of delicate lines and subtle modeling can be seen in another terracotta relief of the period, the Forzori altar made by Donatello (or his workshop) and today in the Victoria and Albert Museum, London. While it was molded rather than modeled, and thus cannot offer an exact parallel in technique, the work does display a low, linear relief technique that creates a compelling illusion of unified space rather like a picture.[435] Luca seems not to have favored this approach in any of his works.

Luca's approach was to leave the ground plane intact behind and around the figures. Even the smallest details in his sculptures appear to be created through additive means, such as the plants above Christ's sarcophagus in the *Resurrection*, the rose hedge in his *Madonna del Roseto* (figure 88), and the lily plants in his many Madonna of Humility compositions. Similarly, the clouds in his works ranging from the large Pazzi Chapel apostles (figure 46) to the angels in the Crucifix Tabernacle decorations at Santa Maria a Impruneta are rendered by applying tin white and saturated cobalt glazes either to the flat surface or to a small mound raised in relief; often, both approaches are combined. The result is to leave the ground plane intact as an inherent boundary within the image; in Luca's sculptures, therefore, relief projects beyond the surface of that plane but does not recede below it.

[435] For the questions surrounding the method of its production and its intended purpose, see the catalogue entry in Boucher, *Earth and Fire*, 108-111.

The preservation of the ground plane in Luca's work limits the opportunities for creating a 'pictorial' style of relief, in which a depicted space seems to open behind the physical surface of the sculpture. Starting from the uniform clay slab, an outdoor landscape had to be built up through the addition of clay masses that were sculpted to depict a rocky or grassy ground. The pictorial composition of the relief determined where those ground masses would be built up and what the viewer's nominal viewpoint onto the scene would be. In the *Resurrection*'s composition, the blue ground plane stretches nearly to the bottom of the relief, establishing a very low horizon line below which a narrow white ground strip tilts toward the viewer. This means that nearly all the figures and objects built up in three dimensions are read against the flat ground, preserving a strong sense of the supporting surface plane throughout the composition. In the *Ascension*'s composition, the rocky ground of the Mount of Olives climbs up to make a higher horizon line. The rocks and the varied levels of relief of the apostles who kneel on it occupy a large proportion of the available relief surface. This casts the flat blue plane more firmly and compellingly in the role of "sky" and does not create so pervasive a sense of essential compositional planarity and otherworldliness as in the *Resurrection*.

Without confirmation by technical examination of their back sides, the exact procedure for making the large reliefs of the *Resurrection* and *Ascension* must remain uncertain. Did Luca proceed here in exactly the same way as for the smaller reliefs? That would imply that he started by forming an enormous single slab of terracotta the size of the final lunette, measuring 2.65 by 2 meters, before modelling the figures attached to its surface. The advantage offered by this procedure would have been to create continuous surfaces on the back and front planes of the relief, ensuring that the pieces fit flush with

one another when ultimately inserted into their final location above the sacristy door. If Luca did proceed in this way, he would have needed a very large work surface with sturdy supports. Once the figures had been attached to the ground slab, he could have cut the ensemble into section along the profile of the figures, and hollowed them from behind to ensure an even thickness for the terracotta walls. The clay slab would therefore have functioned as an *a priori* feature of the scenes' spatial composition, as in the smaller works.

As remarked in Chapter Three, most of Luca's largest works were made for installation in architectural settings and remain in their original locations. Thus they have not been examined from a technical viewpoint for the processes of their manufacture or for the chemical analysis of their clay body and glazes. Within Luca's glazed *oeuvre*, the manufacture of the *Resurrection* and *Ascension* reliefs presented a distinctive challenge, for the reliefs take a pictorial format and are intended to present a continuous flat surface. Thus technical analysis of the reliefs could offer insights into how Luca addressed the task of creating a unified pictorial field. A different type of spatial environment is present in Luca's later glazed ensembles for the Crucifix Tabernacle and the Chapel of the Cardinal of Portugal at San Miniato al Monte in Florence, which line the surface of a curved ceiling; those groups feature discrete repeated elements of limited size and therefore do not need to present a sense of continuous space in the same way. However, all of these projects raise questions about the workshop set-up Luca used in order to ultimately ensure proper fit between the pieces in their final location. For example, did Luca create a scale replica of the barrel vault for the Crucifix Chapel and the sail vault in

the Chapel of the Cardinal of Portugal, in order to fit the glazed terracotta pieces during their preparation?

Section Five: Conclusion and *Spunti* for Analysis of Glazed Terracotta Sculpture in Space

This final section indicates points for future development of the ideas and questions about space raised in Chapter Four in relation to the Cathedral lunettes, the tradition of using colorful and reflective backgrounds in earlier Florentine sculpture, and the technical concerns that guided the construction of Della Robbia reliefs. The illusionistic ideals for representing space that Luca engaged in his *Ascension* lunette, completed in 1451, are unusual within the artist's early major commissions. The color, relief, and composition choices which Luca directed toward that end would not reappear together until their development in glazed altarpieces, a commission type which did not take root until later in the workshop's activity. This section therefore considers the type of major commissions Luca more often received early on in the 1440s through the early 1460s: sculptures for installation in architectural settings. As an example, it turns to a major commission that Luca likely begun during or shortly after his work on the *Resurrection*, the *Twelve Apostles* roundels at the Pazzi Chapel. As a means of concluding this chapter's discussion of space, this section will consider how spatial representation in the roundels could respond to a number of factors, including the significance of the apostles' represented location, the coordination of the roundels within the physical space of the chapel, and the concern for replicability and unity among the twelve works which function as a single group.

Early in this chapter, the analysis of the *Resurrection* and *Ascension* showed the artist's characterization of space depended on a trio of factors: color, relief level, and composition. Luca engaged illusionistic ideals in the representation of space in his *Ascension* relief, completed in 1451, by using low relief, a gravitational composition, and blue and green glazes of similar tonality in the landscape. Yet this combination of formal choices does not reappear in his other known sculptures from the 1440s into the 1460s. Certainly one reason Luca did not develop the illusionistic potential of his medium more widely in this period lies in the types of subject matter and commissions he was asked to create. His major commissions into the 1460s were mainly sculptures for installation in architectural settings, often coordinated in a group and used to shape the perception of an environment, a role examined further below. By contrast, it was the altarpiece format that played a key role in later explorations of illusionistic space in Della Robbia glazed sculptures. Altarpieces opened new fields, in the form of rectangular triptych panels and the unified *pala* field, which were congenial to the spatial needs of narrative scenes and large figure groups. Even there the exploration of illusionistic possibilities was gradual. The *Virgin and Child with James the Major and Biagio* (figure 89),[436] for the Chapel of San Biagio in Pescia, attributed to Luca and Andrea circa 1460, and the *Virgin and Child with Cosmas and Damien* (figure 90) for the Badia fiesolana by Andrea in 1466,[437] are two of the earliest altarpieces to exit the workshop. Both have abstract blue grounds rather than illusionistic landscape settings. Such an illusionistic approach did appear in the circa-1464 Santa Fiora triptych (figure 91) attributed to Andrea,[438] which takes up Luca's earlier experimentation in the *Ascension* by including two painterly landscape

[436] Gentilini, *I Della Robbia. La scultura invetriata*, vol. 1, 131.
[437] Gentilini, *I Della Robbia. La scultura invetriata*, vol. 1, 170.
[438] Gentilini, *I Della Robbia. La scultura invetriata*, vol. 1, 172.

scenes. However, this spatial solution remained less common in the growing altarpiece production of the next decades.

The sculptures for architectural settings that dominated Luca's *oeuvre* in the first three decades of his glazed terracotta production raise a different set of spatial concerns. These issues are well represented by the *Twelve Apostles* roundels that Luca made for the Pazzi Chapel at Santa Croce (figure 10), likely commissioned around 1442 and on which the sculptor may have continued to work into the 1450s.[439] They have principally been analyzed for their dating and attribution, to the detriment of understanding their meaning and spatial function in the chapel.[440] The twelve large roundels depict the apostles in full length, seated on clouds against a deep blue ground. Pope-Hennessy related the *Apostles* to the popular account of Brunelleschi's dislike for Donatello's illusionistic reliefs for the Old Sacristy at San Lorenzo, proposing that the architect preferred the glazed sculptures which did not break the wall plane and which complemented the bichromy of the chapel itself.[441] There may be truth to this account, but it has preempted further exploration of how the roundels' representation of space, and their placement at the site, might serve their function within a religious context of a chapel and Franciscan chapter house.

As Paul Barolsky has noted, the *Apostles* are arranged in groups of three at the corners of the rectangular space before the altar. [442] They thus create a sense of support and draw attention to the module by which Brunelleschi measured the space. Barolsky associated the imagery of the chapel with descriptions of the New Jerusalem in the Book

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[439] The argument for dating the *Twelve Apostles* roundels in this manner is given by Pope-Hennessy, *Luca*, 39-40, 236-239.
[440] Paul Barolsky noted this preoccupation in 1973 and advanced an intriguing line of interpretation which has not been widely incorporated in Della Robba literature; "Toward an Interpretation of the Pazzi Chapel," *Journal of the Society of Architectural Historians* 32, 3 (1973): 228-231.
[441] Pope-Hennessy, *Luca*, 40.
[442] Barolsky, "Toward an Interpretation," 230.

of Revelation, associating the apostles with both its foundations and with its twelve gates, arranged in groups of three at the points of the compass.[443] This is a fascinating hypothesis, and whether or not it is accepted, it is certainly true that the *Apostles* delineate the perimeter of the chapel and thus establish a sense of unification within the space. This role in fact likened the glazed sculptures to the fourteenth- through fifteenth-century precedents, examined earlier in this chapter, which set sculpted figures against colorful and reflective grounds. In several of those cases, such as at the Campanile, Loggia dei Lanzi, and Orsanmichele, the sculptures adhere to a shared visual formula and encircle the monument they adorn, giving consistency and measure to the building. This solution seems to have roots in early uses of glazed plates, called *bacini*, to decorate public buildings in some Italian towns since at least the eleventh century[444]; as demonstrated at the church of San Francesco in Bologna (figure 92), the *bacini* are often used to trace the upper boundar of the buildings they adorn. The decorative ensemble to which Luca contributed with his three glazed *stemmi* at Orsanmichele functions similarly at that site, where coats of arms encircle the building above the niches.

The representation of space within the Pazzi *Apostle* roundels may therefore also be related to their role in establishing the perimeter for a sacred space.[445] They appear against deep blue fields which evoke sky in an abstract way, though color and clouds. Four apostles, Peter, Matthew, John the Evangelist, and James the Great (figure 46), differ from the others in appearing against concentric circles colored in gradations of

[443] Barolsky, Toward an Interpretation," 230.
[444] For a recent interpretation of *bacini* within a Pisan context, see Karen Rose Mathews, "Other Peoples' Dishes: Islamic *Bacini* on Eleventh-Century Churches in Pisa," *Gesta* 53, 1 (2014): 5-23.
[445] Rachel Boyd has recently explored how the glazed altarpieces by Andrea della Robbia and his sons for various buildings at the Santuary of La Verna perform a similar unifying function at that site in a paper, titled "Inventive Repetition: Altarpieces of the Della Robbia Workshop," at the 2016 Renaissance Society of America Meeting in Boston. She also suggested that the repetition of individual motifs in Della Robbia altarpieces could function to identify and brand their production.

blue. This device is a traditional symbol for the heavens, found in numerous scenes of the nearby Baptistery mosaics, though it also seems to imply that the *Apostles*' shining white bodies are so resplendent as to affect the perception of the blue sky in their surroundings While the clouds acquire a sense of permeable substance by means of white and dark blue brushstrokes, the blue ground behind them is flat. The result is to position the *Apostles* as if they are breaking into the room, situating them at a threshold between the heavens and the chapter house which coincides with the edges of the room. The simplicity of their spatial environment was easily replicable, further ensuring the unity of the works and consistent appearance of the chapel. The reflectivity of the sculptures contributed to the focus on the physical space of the chapel itself by emphasizing their surfaces in relation to ambient light and the movement of the viewer, a relationship explored in Chapter Two of this dissertation. Such engaging reflectivity must also have factored into the appeal of using *bacini* and, a little later, sculptures set against reflective grounds as decorations on public buildings.

In conclusion, the question of space in regard to Luca della Robbia's glazed terracotta sculptures is a complex one. As the Pazzi *Apostles* illustrate, the sculptures must be considered both in terms of their representation of space, often schematic in Luca's earliest site-specific works, and their role within a larger architectural environment. The question to what extent these two concerns of space influenced one another remains open for debate. The concern to preserve the integrity of the supporting wall, traditionally attributed to Brunelleschi, may be at play in the solicitation of abstract rather than illusionistic spatial environments in many of Luca's early sculptures for architectural settings. Yet beyond that purely architectural concern, the repetition of a

simplified spatial setting in the Pazzi Chapel must also have been of value to the workshop in ensuring the consistent appearance of works meant to function as a unified group. It also engaged a significant Florentine tradition of using colorful and reflective grounds in sculptural ensembles that marked the perimeters of public buildings and monuments. In regard to the uniform representation of space seen here, and in many of Luca's later site-specific sculptural groups, the experimentation with space that he undertook in the *Ascension* relative to its pendant, the *Resurrection*, is truly remarkable. It reflects their production at two different moments in time and it deserves recognition as an early moment of experimentation with the formal possibilities of glazed terracotta art.

Conclusion

This dissertation has examined the expressive power and material significance of the new art of glazed terracotta sculpture created by the fifteenth-century Florentine artist Luca della Robbia. Luca invented this medium sometime in the 1430s, and from the early 1440s on it was the focus of his activity, despite his proven talent in marble and bronze sculpting. Luca's glazed sculptures differed from the works of his peers in materials like marble, bronze, and even painted wood and terracotta, by virtue of their unsurpassed combination of brilliant color, reflective surfaces, subtle modeling, and description of space, all executed on a large scale. The glazed material lends seemingly contradictory qualities to Luca's subjects, offering a charming and intimate account of their humanity while simultaneously endowing them with a hard preciosity. Only in the last forty-five years have the qualities of Luca's material been identified as valuable and worthy of study in their own right, following a period of ambivalence about their merits in nineteenth- and early twentieth-century scholarship. Situated within recent research on the materiality of art, this dissertation has analyzed the appealing physical qualities of Luca's glazed terracotta sculptures in order to interrogate the primacy often conferred on naturalistic and illusionistic strategies as a means to engage fifteenth-century Florentine viewers.

The orchestration of color, light, relief, and space that characterized Luca's glazed terracotta sculptures was rivaled in fifteenth-century Florence only in paintings, where those qualities were increasingly directed toward the thoroughgoing imitation of life championed by Leon Battista Alberti. That fact, joined with a perduring suspicion of color in sculpture rooted in sixteenth-century Italian art criticism, has left the aesthetic

aims toward which these expressive qualities might be coordinated better articulated for painting than for sculpture. This dissertation thus analyzed recipe books and treatises directed at artists in painting, sculpture, and the arts of fire, in order to develop a framework for identifying the aims toward which the interdependent qualities of light, color, relief, and space might be directed in glazed terracotta sculptures. The interpretations advanced in chapters on invention, whiteness and light, color, and space have shown the brilliant color and reflectivity of the glazed figures and spaces characterized Luca's subjects as extraordinarily splendid while simultaneously establishing a connection to the viewer and his or her surroundings. This dynamic, phenomenological connection to ambient light differed radically from the illusionism advocated by Alberti, which minimized the viewer's bodily position and environmental conditions.

Chapter One "Invention" provided the starting point with a review of the written sources that identify Luca as the inventor of a new material during the fifteenth and sixteenth centuries. Accounts of Luca's accomplishment increased toward the end of the fifteenth century, and prove that contemporaries recognized in glazed terracotta a combination of expressive qualities which was not found in other media. The terminology applied to the new medium was rooted in existing technologies, and here, too, the variety of these references—primarily to ceramic, but also to glass, painting, and encaustic—affirms a general recognition of the novel material properties of glazed terracotta sculpture. An examination of these properties from a technical point of view showed how Luca engineered his medium to ensure glazes of strong colors and

reflectivity which would be a good fit to the malleable earth underneath. This mastery of clay and glaze ensured the expressive possibilities which make his art so striking.

Chapter Two "Whiteness and Light" examined Luca's white-glazed figures, whose color and reflectivity are now commonly associated with ideals of transcendence and spiritual light, an interpretation enhanced by their sensitivity to ambient conditions. The chapter investigated how fifteenth-century viewers might have contextualized their own phenomenological experience of light in relation to white glazed figures. It identified the growing association between light and the perception of relief, cultivated by fifteenth-century painters who artificially controlled light in order to create a sense of three-dimensionality for their figures. Although this created a growing expectation that mass and volume could be appreciated visually, Lorenzo Ghiberti's treatise revealed the interaction of light and sculpture to be changeable and dynamic, depending on the viewer's position and environment, and described how light produces luster on reflective media that can emphasize surface rather than form. Luster evokes the intensity of a direct light source, serving religious symbolisms such as Christ's role as the Lux Mundi, and its mobility refuses the fixed and descriptive function for light that was developing in fifteenth-century painting.

Chapter Three "Color" followed a framework derived from fourteenth- and fifteenth-century texts which discuss the use of color as it relates to painting and the arts of fire. The chapter distilled a common vocabulary and set of period values from these writings, identifying the source and quality of pigments, their mixture, and composition of colors to be key concerns for fifteenth-century artists. While many of the texts were directed toward painters, they reflect general categories of thought and, relevant to Luca,

similar techniques that were used to paint the terracotta sculptures he made early in his career. The chapter therefore measured the choices Luca made in his use of colored glazes against these values and the possibilities of his medium. Luca maintained a bright palette for his colors, generally avoiding more muted and modulated effect that painterly modeling could produce. He did engage longstanding ideals of color composition in his multicolored works, and his use of tonal gradations of blue to give spatial information related to precepts for painterly modeling which positioned figures in space. The brilliance of Luca's colors ultimately conveys their presence, connecting them to the viewer.

Finally, Chapter Four "Space" considered how Luca orchestrated the features discussed in the previous chapters together into two reliefs representing sacred stories, which required the depiction of space. These sculptures, the *Resurrection* and *Ascension* lunettes for the Florentine Cathedral, take radically different approaches to representing space. In the *Resurrection* Luca concentrated his subjects at the surface of the picture plane, against a flat blue plane, while in the *Ascension* he used color, relief, and compositional choices to engage the illusionistic ideal of opening space. The chapter reviewed Florentine precedents beginning in the thirteenth century for the combination of white sculpted figures against a reflective and colorful ground, in order to trace the spatial function of such grounds. It concluded that their function remained ambivalent, between representational and surface values, even as the increasing use of blue in this ground did lend the ground a celestial connotation. A technical analysis of the reliefs showed the emphasis that Luca retained on the clay slab that functioned as the ground plane for terracotta reliefs. The chapter ended with a consideration of the Pazzi Chapel

which argues that a desire to delineate the boundaries of a space, combined with the need for repetition and replicability in site-specific commissions that involved several sculptures, favored the simplified solution Luca had used in the *Resurrection*.

Together, the chapters of this dissertation have shown Luca della Robbia exploring the ends toward which light, color, relief, and space could be put collectively in sculpted rather than painted images. Their thematic focus has allowed the physical possibilities of the material itself to come to the fore instead of fragmenting those concerns within a chronological organization. In sum, the physical qualities of glazed terracotta sculptures represent the fruit of Luca's ingenuity as well as the conditions which shaped his formal choices. Through the adaptations that he made to contemporary potters' clay and glazed recipes, Luca privileged brilliant colors and reflective surfaces that cultivate a sense of proximity to and interaction with the space of the viewer. This result was then bolstered by Luca's avoidance of illusionistic spatial constructions and more subdued color palettes, despite his ability—as proven by the *Ascension* lunette—to engage those ideals. The great success that Luca's glazed sculptures enjoyed, both during his lifetime and well into the sixteenth century, affirms the appeal and effectiveness of their materiality, standing in contrast to the ideal of dissemblance with which fifteenth-century Florentine artists increasingly experimented.

APPENDIX A

References to Luca della Robbia in Fifteenth- and Early Sixteenth-Century Documents

All documents cited in this Appendix have been published previously and the source of each transcription is provided.

Document 1

Leon Battista Alberti, *Della pittua*, 1435/6

Ma poi che io dal lungo exilio in quale siamo noi Alberti invecchiati, qui fui in questa nostra sopra l'altre ornatissima patria riducto, chompresi in molti ma prima in te, Filippo et in quel nostro amicissimo Donato sculptore et in quelli altri Nencio et Luca et Masaccio, essere a ogni lodata cosa ingegnio da non postporli acqual si sia stato anticho et famoso in queste arti.

Published in: Creighton E. Gilbert, *L'arte del Quattrocento nelle testimonianze coeve* (Florence and Vienna: Irsa, 1988), 80.

Document 2

Antonio Averlino, called Filarete, *Trattato di Architettura*, circa 1464

Eraci scritto il nome de' maestri, i quali erano questi: uno chiamato Donatello, l'altro chiamato Luca, ècci un altro chiamato Agostino e uno suo fratello chiamato Ottaviano, eravi ancora un altro solenne maestro chiamato Desiderio e un altro chiamato Dino; eravi uno chiamato Michelozzo, un altro chiamato Pagno, uno chiamato Bernardo e uno suo fratello.

Mandai ancora per alcuni altri, intra gli altri uno il quale aveva nome Lorenzo di Bartolo, buono maestro di bronzo, e per lo figliuolo, chiamato Vittorio, fu detto che 'l padre era morto, e ancora un altro il quale si chiamava Masaccio, e lui ancora è morto. E mandai per due i quali erano stati a 'mparare con meco a Roma: l'uno si chiamava Varrone, l'altro Niccolò; un altro, il quale lavorava a Mantova, che si chiamava Luca. Mandai per un altro in Spagna, il quale si chiamava Dello. Arei mandato per uno il quale era ottimo architetto, senonché era morto innanzi più tempo, il quale aveva nome Pippo di ser Brunellescho. Questi erano tutti fiorentini.

...

In prima de' cammini dirò d'uno, il quale era in questa sala intra gli altri. Era fatto in questa forma come qui si vedrà disegnato; e questo era fatto d'una certa pietra, la quale era bella e mantenevasi ancora al caldo. Eravi intagliato su di mano di buono maestro, il quale si chiamava Luca della Robbia, era fiorentino, queste cose: Vulgano, e Scevola quando s'arse il braccio, e Tubalcain; questo era dal mezzo in su. Nel mezzo era Fetonte in sul carro di Febo, discorsi gli cavalli per paura di Scorpio. Nell'ultimo fregio era paglia e quegli inventori del fuoco d'Egitto, che dice che traendo sassi in uno certo scoglio,

s'apiccò il fuoco per quello sbattere de' sassi l'uno coll'altro. E più altre cose, come per lo disegno appare.

...

Dopo questa è uno studietto ornato di degnissimi libri e altre cose degne, è così il suo studietto: ornatissimo il pavimento, e così il cielo, di vetriamenti fatti a figure degnissime, in modo che a chi v'entra dà grandissima ammirazione. El maestro di questi invetriamenti si fu Luca della Robbia, così per nome si chiama, il quale è dignissimo maestro di questi invetriati, e anche in iscultura si dimostra.

Published in: Anna Maria Finoli e Liliana Grassi, eds. *Antonio Averlino detto il Filarete. Trattato di architettura* (Milan: Edizioni il Polifilo, 1972), 170-171, 267-268, 696-697.

Document 3

Fra Domenico Corella, *Theotocon*, 1469

Sancta Maria de Flore
Spendida cui Lucas auri percussor & aeris
Ostia componit Robbius arte pari

Published in: Creighton E. Gilbert, *L'arte del Quattrocento nelle testimonianze coeve* (Florence and Vienna: Irsa, 1988), 176.

Document 4

Benedetto Dei, *Memorie istoriche*, 1470

Schultori di bronzo e di marmi e pietre

...

El mastro Luccha della Robbia gram mastro.

...

El mastro Andrea della Robbia schultore di tutto.

Published in: Creighton E. Gilbert, *L'arte del Quattrocento nelle testimonianze coeve* (Florence and Vienna: Irsa, 1988), 204.

Document 5

Alamanno Rinuccini, Dedicatory letter to Duke of Urbino on occasion of translation of Philostratus's *Life of Apollonius of Tyana*, 1472

Sculptores autem quamvis multos afferre possim, qui pro summis habiti essent si paulo ante hanc aetatem nasci contigisset, adeo tamen omnes Donatellus unus superavit, ut pene solus in hoc genere numeretur. Non contempnendos tamen fuisse Luccam robiniensem, et Laurentium bartolucii praeclara ab eis aedita opera testantur.

Published in: Creighton E. Gilbert, *L'arte del Quattrocento nelle testimonianze coeve* (Florence and Vienna: Irsa, 1988), 207.

Document 6

Piero Cennini, Letter to Pirrino Amerino, 1475

Aliæ vero quæ inter utrasque mediæ sunt, : immane templum divæ Reparatæ ad solis ortum aspiciunt, historiis ornatæ veteris testamenti, ejusdem Laurentii opus, in quo tamen et Michelotius et Lucas Robia sculptores egregii, his melior Donatellus, et Bernardus aurifex pater meus, florentini omnes, non minimam partem fecere; utrumque annis quinquaginta perfectum.

Published in: Girolamo Mancini, "Il bel S. Giovanni e le feste patronali di Firenze descritte nel 1475 da Piero Cennini," *Rivista d'Arte* 6 (1909), 221.

Document 7

Vespasiano da Bisticci, "Vita di Nicolaio Nicoli fiorentino," ca. 1480s-1490s

Non solo Nicolaio prestò favore a uomini litterati, ma intendendosi di pitura, scoltura, architettura, con tutti ebbe grandissima notitia, et prestò loro grandissimo favore nel loro

exercicio, Pipo di ser Brunelesco, Donatello, Luca della Robia, Lorenzo di Bartoluccio, et di tutti fu amicissimo.

Published in: Vespasiano da Bisticci, *Le Vite*, critical edition with Introduction and Comments by Aulo Greco, vol. 2 (Florence: Istituto Nazionale di Studi sul Rinascimento, 1976-77): 237.

Document 8

Antonio Manetti, *De' Viri illustri di Firenze*, likely 1490s

Luca, che si disse della Robbia, maestro scultore di getti e di marmi e di terra, e fu el primo che trovò lo 'nvetriare le figure. Fece molte cose: ma in Santa Maria del Fiore di Firenze si vede di lui insieme tre opere mirabili; la porta di bronzo della sagrestia, che si dice col tramontano lato, el pergamo di sopra, dove sono gli organi, et sopra le porte della sagrestia, cioè d'amendue gli archetti, cioè le figure di vetro, ovvero di terra invetriata, dov'è una Resurrezione di Cristo, e l'Ascensione. E fece molte altre cose per la città e per altrove. Uomo buono e di costumata vita e di grande intelletto.

Gaetano Milanesi, ed. *Operette istoriche edite ed inedite di Antonio Manetti. Matematico ed architetto fiorentino del secolo XV* (Florence: Successori Le Monnier, 1887), 168.

Document 9

Pomponius Gauricus, *De Sculptura*, 1504

DE CLARIS SCULPTORIBUS.

In Italia laudatissimus quondam Turanius Fregellanus Nostra etate Vitus Mazon Mutinensis, quem nuper nobis Gallia cum plerisque rebus apstulit, Vxor etiam eius finxit et filia, Lucas Rubius Florentinus ex Aurifice Plastes, cuius inuentum, fictile opus encausto pingi, Andraeas eius ex sorore nepos, nullis quos ego uiderim posterior, Naturam existimes ipsam fecisse que huius manus effinxit, Nam quid ego uobis commemorem, Nannum miniatorem, Domitium figulum, et Andraeam crispum Patavinos?

Published in: Pomponius Gauricus, *De Sculptura*, annotated and translated by André Chastel and Robert Klein (Geneva: Droz, 1969), 249-251

Document 10

Leonardo da Vinci, The *Parte Prima* of the *Codex Vaticanus Urbinas 1270*

Il pittore et scultore

Dice lo scultore, la sua arte essere più degna che'lla

pittura con ciò sia che quella è più aeterna per temer meno l'umido, e'l foco, e'l caldo, e'l fredo che la pittura. A costui si risponde che questa tal cosa non fa più dignità nello scultore perché tal permanenza nasse dalla materia et no dall'artefice. La qual dignita pò ancora essere nella pittura, dipingendo con colori di vetro sopra i mettalli et terra cotta, e quelli in fornace fare discorrere et poi pulire con diversi stromenti et fare una superfitie piana et lustra, come ai nostri giorni si vede fare in diversi luoghi di Francia e d'Ittalia, e massime in Firenze nel parentado della Robbia, li quali hano trovato modo di condure ogni grand opera in pittura sopra terra cotta coperta di vetro. Vero, è che questa è sottoposta alle percussioni e rotture, sicome si sia la scultura di marmo, ma non è a destruttori come le figure di bronzo. Ma di etternità si congiongie cola scultura, et di bellezza la supera senza comparatione perché in quella si congiongie le due prospettive, et nella scultura tonda non è nissuna che no sia fatta dalla natura. Lo scultore nel fare una figura tonda fa solamente due figure, e non è infinite per li infiniti aspetti donde essa pò essere veduta. Et di queste due figure l'una è veduta dinanti e l'altra di dietro, et questo si prova no essere altrimente perché, se tu fai una

figura in mezzo rilevo veduta dinanzi. Tu non dirai mai vere
fatto più opera in dimostratione che si faccia il pittore
in una figura fatta nella medesima veduta e 'l simile inter-
viene a una figura volta in dietro.

Published in: Claire J. Farago, *Leonardo da Vinci's* Paragone. *A Critical Interpretation with a New Edition of the Text in the* Codex Urbinas (Leiden; New York; Copenhagen; Köln: E.J. Brill, 1992), 260-262.

Document 11

Francesco Albertini, *Memoriale di molte statve et picture sono nella inclyta Cipta di Florentia Per mano di Sculptori & Pictori excellenti Moderni & Antiqui / tracto dalla propria Copia di Messter Francesco Albertini prete Fiorētino Annodñi 1510*

Sancta Maria del Flore

[...] Sono in decta chiesa due sacrestie cõ dui para di organi. Lornamēto di uno p[er] mano di Donato: il quale ... Li altri organi ador~no Luca de rubea: il quale fece la porta di sacrestia nuova.

Quartieri di scā Croce & sue circũstātie.

...e scõ Lodouico ep[er]o di bronzo p[er] mano di Donato / ilquale cõ **Luca de rubea** & Desiderio feciono assai cose nel Capitulo bellissime de Pazi.

In sancto Francesco & Miniato

[...] et la riccha marmorea cappella de Medici / riscontro allaquale e / una cappella ornatissima cõ sepulcro marmoreo del Car. Portugallese cõ pie/tre p[re]tiose adornata & sedia bellissima tutte p[er] mano di Ant. Rosselli. La tavola e / di Pietro Pull. Le altre figure di Alexo Bal. quelle di mezo rilieuo di Luca de rubea.

Published in: *Five Early Guides to Rome and Florence*, introduction by Peter Murray (Farnborough: Gregg International Publishers Limited, 1972).

Document 12

Il Libro di Antonio Billi, early sixteenth-century (c. 1515-30?), exists in two manuscripts, the Codex Petrei and Codex Strozziano. Luca is included in the Codice Petrei, but not the Codice Strozziano.

Luca della Robbia et Desiderio da Settignano.

Luca della Robbia. Costui fecie lo ornamento dello organo maggiore di Santa Maria del Fiore, molto bene lauorato, et le storie a proposito delle fiure, che dimostrano gli effetti loro, benche per la altezza non molto si possono considerare. Et anchora sotto detto organo la porta di bronzo della sagrestia. Et nello archo di decta porta ui è la resurrectione di Nostro Signore con le fiure allo intorno, con molta diligentia lauorate, a chi bene le riguarda, che sono di terra cotta inuetriate, artificio trouato dallui et condotto

alla sua perfectione. Anchora fecie la storia sopra la porta della sagrestia uechia di decta chiesa della medesima terra cotta. Della quale fecie in Firenze et fuora di Firenze moltissime belle tauole et fiure, diuersamente con grande ornamento et artifitio lauorate.

Fecie a Napoli il sepolcro dello infante, fratello di Alfonso, et altre cose.

Lascio di se Andrea, suo nipote.

Published in: Carl Frey, ed., *Il Libro di Antonio Billi. Esistente in due copie nella Biblioteca Nazionale di Firenze* (Berlin: G. Grote, 1892), 45-46.

The Libro di Antonio Billi also includes a reference to Luca della Robbia in the life of Donatello. The following excerpt is from the life of Donatello in the Codex Petrei.

Donatello

... et gli ornamenti dello organo della sagrestia uecchia, coe del minore organo di marmo di Santa Maria del Fiore. Lequali fiure sono abozate et non finite, nondimeno di terra paiono assaj et rilieuano in apparenza, piu che non fanno le figure dello organo maggiore, che sono finite con molta diligentia, et sono di mano di Luca della Robbia**.**

Published in: Carl Frey, ed., *Il Libro di Antonio Billi. Esistente in due copie nella Biblioteca Nazionale di Firenze* (Berlin: G. Grote, 1892), 41.

Document 13

Anonimo Magliabecchiano, Likely after 1541

Luca della Robbia.

Luca della Robbia Fiorentino, scultore, opero assaj.

Et infra l'altre sue opere in Firenze in Santa Maria del Fiore fece l'hornamento del' organo maggiore, condotto con molta diligentia. Et sonuj tutte le storie a proposito, mostrando le fiure i loro effettj, che in esse s'interuenghono, benche per la loro alteza pocho si uegghino le loro perfectionj. Fece anchora a pie di detto orghano la porta di bronzo della sagrestia. Et nell' archo di detta porta di terra cotta et invetriata, artifitio da luj trouato et condotto con diligentia, fece la resurretione del Nostro Signore con le fiure atorno, lauorate con grande ingegno. Fece anchora della medesima materia l'historia sopra l'archo della porta della sagrestia uecchia di detta chiesa.

In Santa † (*Croce*) nel chiostro primo nel capitolo de Pazi lauoro anchora di detta materia.

Et in San Miniato a Monte fece la uolta della cappella et anchora lauoro nella cappella del cardinale de Portogallo, doue è sotterrato, di detta materia nella volta d'essa.

Et in Firenze et fuorj in altrj luoghi lauoro della detta terra moltissime belle tauole et fiure, diuersamente con grande hornamento et artifitio lauorate.

Fece anchora a Napolj il sepolcro dell' infante, fratello del re Alfonso, et altre cose assaj.

Published in: *Il Codice Magliabechiano cl.XVII. 17 contenente Notizie sopra l'arte degli antichi e quella de' fiorentini da cimabue a michelangelo buonarroti, scritte da Anonimo Fiorentino*, edited by Carl Frey (Berlin: G. Grote'sche Verlagsbuchhand- lung 1892), 80.

Document 14

Giorgio Vasari, *Le vite de' più eccellenti pittori, scultori e architettori*, 1550

Luca della Robia

Scultore

Quanti scultori si sono affaticati lavorando, i quali hanno nel loro esercizio fatto di marmo e di bronzo cose lodatissime, poi, trovatosi per la fatica dell'arte dai disagi stanchi e malcondotti, ogni altra cosa hanno fatto più volentieri che la propria arte. Il che adviene il più delle volte perché quando nello stare scioperati cominciano a indurar l'ossa nella infingardaggine, per non chiamarla poltroneria, si intrattengono più volentieri cicalando e beendo al fuoco che intorno ad un marmo, perduto in tutto il vigore dello animo e postposto il nome e la fama che erano per conseguire agli agi et a' diletti folli del mondo. La qual cosa manifestamente si è vista già molte volte ne' cervelli sofistici di alcuni artefici, che ghiribiz[z]ando continovamente hanno trovato cose bellissime et invenzioni astrattissime solamente per guadagnare. Ma non così Luca della Robbia scultor fiorentino, il quale s'affaticò nei marmi lavorando molti anni; et avendo una maravigliosa pratica nella terra, la quale diligentissimamente lavorava, trovò il modo di invetriare essa terra col fuoco in una maniera che e' non la potesse offendere né acqua né

vento: e riuscitoli tale invenzione, lasciò dopo sé eredi i figliuoli di tal secreto. E così fino al tempo nostro i suoi descendenti hanno lavorato di tal mestiero, e non solo ripiena di ciò tutta la Italia, ma e mandatone ancora in diverse parti del mondo. E di questa invenzione merita egli certo non manco lode che e' si meritasse nella scultura, nella quale grandemente fu celebrato.

Dicono molti che Luca della Robia era concorrente di Donatello, e tenuto di grande ingegno ne' tempi suoi. Onde per virtù di questo meritò che gli Operai di Santa Maria del Fiore gli allogassero alcune storiette di marmo, le quali furono poste nel campanile dove sono i principii della Musica, della Filosofia e dell'Arti liberali, nelle quali istoriette acquistò grandemente; per che diè materia di disporre gli Operai sopradetti ad allogarli l'ornamento di marmo dell'organo sopra la sagrestia nuova di Santa Maria del Fiore, nel quale fece egli i cori della musica con diligenza e con sottil magisterio lavorati, dove sono alcune figure che cantano; et ancora che elle siano alte, vi si conosce il gonfiare della gola per lo alito, e le battute in su le spalle da chi regge la musica; et in queste medesime istorie andò imitando e' suoni e' balli con tutti gli affetti simili in cosa per cosa, finendo il tutto molto più pulitamente che non fece Donato stesso, perché si vede in quel di Donato più risoluta practica e più maestrevole vivezza che non fa perfezzione e finita bontà in quel di Luca; e vedesi negli artefici egregi aver sempre le bozze più forze e vivacità che non ha la fine nelle opere loro, perché il furore dell'arte in un sùbito esprime il concetto dell'animo: il che non può fare la diligenza e la fatica nelle cose pulite. E di maniera acquistò Luca in questa opera di esser tenuto valente, che ottenne il lavoro della porta di bronzo che a essa sagrestia si conveniva; la quale per getto, per bontà e per magisterio merita gran lode. E ghiribiz[z]ando alle cose di terra del

lavorar quello invetriato del quale di sopra dicemmo, fece alle due porte sopra ne' mez[z]i tondi una Resurressione et una Ascensione di Cristo con gli Apostoli; laonde, essendo cosa nuova, piacque a' popoli sommamente per la vaghezza di quella.

Lavorò ancora alla chiesa di San Pier Buonconsiglio, sotto Mercato Vecchio, sopra la porta uno archetto dentrovi una Nostra Donna con Angeli intorno; e sopra la porta pure d'una chiesina vicina a San Piero Maggiore, in un mez[z]o tondo, fece de' medesimi invetriati una Nostra Donna similmente, con alcun' Angeli intorno di quella: cose che di quella materia sono tenute molto belle dagli artefici. Similmente nel capitolo de' Pazzi in Santa Croce per ordine di Pippo di ser Brunellesco fece tutti gli invetriati, sì di figure come di altre cose, che si veggono e dentro e fuori in detto edifizio. E così alla cappella di San Iacopo in San Miniato fuori di Fiorenza in sul Monte, per la sepoltura del cardinale di Portogallo fece la volta de' medesimi invetriati di terracotta, dentrovi figure; et al re d'Ispagna mandò opere di quella mistura, e figure di tondo rilievo et altri lavori di marmo. A Napoli fece la sepoltura dello Infante fratello del re Alfonso e duca di Calavria, della quale grandissima parte ne lavorò in Fiorenza.

Dicono che Luca fu molto costumata e savia persona et alla religione cristiana mirabilmente devoto. Lasciò Andrea suo nipote che nei lavori di terra fu molto pratico e valente, e sempre lavorò invetriati mentre ch'e' visse. Fece una cappella di marmo fuor d'Arezzo a Santa Maria delle Grazie per ornamento di quella devozione. Visse Andrea anni LXXXIII, e lasciò molti figliuoli i quali agli invetriati attendevano similmente come esso; dei quali il minore chiamato Gierolamo fece opre di marmo lodate, e stette per lungo tempo in Francia, et anco Luca suo fratello vi condusse. E per tornare a Luca vecchio, essendo egli d'anni LXXV e fieramente di mal di renella aggravato, non

potendo resistere al dolore che tale malattia gli dava, passò di questa a miglior vita; et in San Piero Maggiore da' mestissimi figliuoli fu sotterrato l'anno XCCCCXXX. E col tempo fu onorato con questi versi:

TERRA, VIVI PER ME CARA E GRADITA
CHE ALLE ACQUE E A' GHIACCI COME IL MARMO INDURI,
PERCHÉ QUANTO MEN CEDI O TI MATTURI
TANTO PIÙ LA MIA FAMA IN TERRA HA VITA.

Ancora che gli invetriati nelle figure di terracotta non siano in istima grandissima, son molto utili e perpetui e necessarii, attesoché dove non possono reggere le pitture o per gli ghiacci o per gli umidi o per i luoghi acquidosi, questa specie di figure serve, come s'è visto al Sasso della Vernia in Casentino, che per tal colpa altro che gli invetriati non restano. Onde Luca della Robia merita somma lode, avendo alla scultura questa parte aggiunta, potendosi con bellezza e con non molta spesa ogni luogo aquatico et umido abbellire.

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Giorgio Vasari, *Le vite de' più eccellenti pittori, scultori e architettori*, 1568

Vita di Luca della Robbia

Scultore

Nacque Luca della Robbia scultore fiorentino l'anno 1388 nelle case de' suoi antichi, che sono sotto la chiesa di S. Bernaba in Fiorenza, e fu in quelle alevato costumatamente insino a che non pure leggere e scrivere ma far di conto ebbe, secondo il costume de' più de' Fiorentini, per quanto gli faceva bisogno, apparato. E dopo fu dal padre messo a imparare l'arte dell'orefice con Lionardo di ser Giovanni, tenuto allora in Fiorenza il miglior maestro che fusse di quell'arte. Sotto costui adunque avendo imparato Luca a disegnare et a lavorare di cera, cresciutogli l'animo si diede a fare alcune cose di marmo e di bronzo; le quali essendogli riuscite assai bene, furono cagione che, abbandonato del tutto il mestier dell'orefice, egli si diede di maniera alla scultura, che mai faceva altro che tutto il giorno scarpellare e la notte disegnare; e ciò fece con tanto studio, che molte volte, sentendosi di notte aghiadare i piedi, per non partirsi dal disegno si mise per riscaldargli a tenerli in una cesta di bruscioli, cioè di quelle piallature che i lignaiuoli levano dall'asse quando con la pialla le lavorano. Né io di ciò mi maraviglio punto, essendo che niuno mai divenne in qualsivoglia esercizio eccellente, il quale e caldo e gelo e fame e sete et altri disagi non cominciasse ancor fanciullo a sopportare, laonde sono coloro del tutto ingannati, i quali si avisano di potere negl'agi e con tutti i commodi del mondo ad onorati gradi pervenire: non dormendo ma veg[g]hiando e studiando continuamente s'acquista.

Aveva a mala pena quindici anni Luca, quando, insieme con altri giovani scultori, fu condotto in Arimini per fare alcune figure et altri ornamenti di marmo a Sigismondo di Pandolfo Malatesti signore di quella città, il quale allora nella chiesa di S. Francesco faceva fare una capella, e per la moglie sua già morta una sepoltura; nella quale opera

diede onorato saggio del saper suo Luca in alcuni bassi rilievi che ancora vi si veggiono, prima che fusse dagl'Operai di S. Maria del Fiore richiamato a Firenze, dove fece per lo campanile di quella chiesa cinque storiette di marmo, che sono da quella parte che è verso la chiesa, le quali mancavano, secondo il disegno di Giotto, a canto a quelle dove sono le Scienze et Arti che già fece, come si è detto, Andrea Pisano. Nella prima Luca fece Donato che insegna la Gramatica; nella seconda Platone et Aristotile, per la Filosofia; nella terza uno che suona un liuto, per la Musica; nella quarta un Tolomeo per l'Astrologia, e nella quinta Euclide per la Geometria. Le quali storie per pulitezza, grazia e disegno avanzarono d'assai le due fatte da Giotto, come si disse, dove in una, per la Pittura, Apelle dipigne, e nell'altra Fidia, per la Scultura, lavora con lo scarpello.

Per lo che i detti Operai, che oltre ai meriti di Luca furono a ciò fare persuasi da messer Vieri de' Medici, allora gran cittadino popolare, il quale molto amava Luca, gli diedero a fare l'anno 1405 l'ornamento di marmo dell'organo che grandissimo faceva allora far l'Opera, per metterlo sopra la porta della sagrestia di detto tempio: della quale opera fece Luca nel basamento, in alcune storie, i cori della musica che in varii modi cantano; e vi mise tanto studio e così bene gli riuscì quel lavoro, che, ancora che sia alto da terra sedici braccia, si scorge il gonfiare delle gole di chi canta, il battere delle mani da chi regge la musica in sulle spalle de' minori, et insomma diverse maniere di suoni, canti, balli et altre azzioni piacevoli che porge il diletto della musica. Sopra il cornicione poi di questo ornamento fece Luca due figure di metallo dorate, cioè due Angeli nudi condotti molto pulitamente, sì come è tutta l'opera, che fu tenuta cosa rara: se bene Donatello, che poi fece l'ornamento dell'altro organo che è dirimpetto a questo, fece il suo con molto più giudizio e pratica che non aveva fatto Luca, come si dirà al luogo suo, per avere egli

quell'opera condotta quasi tutta in bozze e non finita pulitamente, acciò che apparisse di lontano assai meglio, come fa, che quella di Luca; la quale, se bene è fatta con buon disgeno e diligenza, ella fa nondimeno con la sua pulitezza e finimento che l'occhio per la lontananza la perde e non la scorge bene come si fa quella di Donato, quasi solamente abbozzata. Alla quale cosa deono molto avere avvertenza gl'artefici, perciò che la sperienza fa conoscere che tutte le cose che vanno lontane – o siano pitture o siano sculture o qualsivoglia altra somigliante cosa – hanno più fierezza e maggior forza se sono una bella bozza che se sono finite; et oltre che la lontananza fa questo effetto, pare anco che nelle bozze molte volte, nascendo in un sùbito dal furore dell'arte, si sprima il suo concetto in pochi colpi, e che per contrario lo stento e la troppa diligenza alcuna fiata toglia la forza et il sapere a coloro che non sanno mai levare le mani dall'opera che fanno. E chi sa che l'arti del disgeno, per non dir la pittura solamento, sono alla poesia simili, sa ancora che come le poesie dettate dal furore poetico sono le vere e le buone e migliori che le stentate, così l'opere degli uomini eccellenti nell'arti del disegno sono migliori quando sono fatte a un tratto dalla forza di quel furore che quando si vanno ghiribizzando a poco a poco con istento e con fatica; e chi ha da principio, come si dee avere, nella idea quello che vuol fare, camina sempre risoluto alla perfezzione con molta agevolezza. Tuttavia, perché gl'ingegni non sono tutti d'una stampa, sono alcuni ancora, ma rari, che non fanno bene se non adagio, e per tacere de' pittori, fra i poeti si dice che il reverendissimo e dottissimo Bembo penò talora a fare un sonetto molti mesi e forse anni, se a coloro si può creder che l'affermano: il che non è gran fatto che avvenga alcuna volta ad alcuni uomini delle nostre arti; ma per lo più è la regola in contrario, come si è detto di sopra: comeché il volgo migliore giudichi una certa delicatezza esteriore et apparente,

che poi manca nelle cose essenziali ricoperte dalla diligenza, che il buono fatto con ragione e giudizio, ma non così di fuori ripulito e lisciato.

Ma per tornare a Luca, finita la detta opera che piacque molto, gli fu allogata la porta di bronzo della detta sagrestia, nella quale scompartì in dieci quadri, cioè in cinque parte, con fare in ogni quadratura delle cantonate, nell'ornamento, una testa d'uomo; et in ciascuna testa variò, facendovi giovani, vecchi, di mezza età, e chi con la barba e chi raso, et insomma in diversi modi tutti belli in quel genere, onde il telaio di quell'opera ne restò ornatissimo. Nelle storie poi de' quadri fece, per cominciarmi di sopra, la Madonna col Figliuolo in braccio con bellissima grazia, e nell'altro Iesù Cristo che esce del sepolcro; di sotto a questi, in ciascuuno dei primi quattro Dottori della chiesa che in varie attitudini scrivono; e tutto questo lavoro è tanto pulito e netto che è una maraviglia, e fa conoscere che molto giovò a Luca essere stato orefice.

Ma perché, fatto egli conto dopo queste opere di quanto gli fusse venuto nelle mani e del tempo che in farle aveva speso, conobbe che pochissimo aveva avanzato e che la fatica era stata grandissima, si risolvette di lasciare il marmo et il bronzo e vedere se maggior frutto potesse altronde cavare. Per che, considerando che la terra si lavorava agevolmente e con poca fatica, e che mancava solo trovare un modo mediante il quale l'opere che di quella si facevano si potessono lungo tempo conservare, andò tanto ghiribizzando che trovò modo da diffenderle dall'ingiurie del tempo: perché dopo avere molte cose esperimentato, trovò che il dar loro una coperta d'invetriato adosso, fatto con stagno, terra ghetta, antimonio et altri minerali e misture cotte al fuoco d'una fornace aposta, faceva benissimo questo effetto e faceva l'opere di terra quasi eterne. Del quale modo di fare, come quello che ne fu inventore, riportò lode grandissima e gliene

averanno obligo tutti i secoli che verranno. Essendogli dunque riuscito in ciò tutto quello che disiderava, volle che le prime opere fussero quelle che sono nell'arco che è sopra la porta di bronzo che egli sotto l'organo di S. Maria del Fiore aveva fatta per la sagrestia; nelle quali fece una Ressur[r]ezzione di Cristo tanto bella in quel tempo che, posta su, fu come cosa veramente rara ammirata. Da che mossi i detti Operai, vollono che l'arco della porta dell'altra sagrestia, dove aveva fatto Donatello l'ornamento di quell'altro organo, fusse nella medesima maniera da Luca ripieno di simili figure et opere di terracotta; onde Luca vi fece un Gesù Cristo che ascende in cielo, molto bello.

Ora, non bastando a Luca questa bella invenzione tanto vaga e tanto utile, e massimamente per i luoghi dove sono acque e dove per l'umido o altre cagioni non hanno luogo le pitture, andò pensando più oltre, e dove faceva le dette opere di terra semplicemente bianche, vi aggiunse il modo di dare loro il colore, con maraviglia e piacere incredibile d'ognuno. Onde il magnifico Piero di Cosimo de' Medici – fra i primi che facessero lavorar a Luca cose di terra colorite – gli fece fare tutta la volta in mezzo tondo d'uno scrittoio nel palazzo edificato, come si dirà, da Cosimo suo padre, con varie fantasie, et il pavimento similmente, che fu cosa singolare e molto utile per la state. Et è certo una maraviglia, che, essendo la cosa allora molto difficile e bisognando avere molti avvertimenti nel cuocere la terra, che Luca conducesse questi lavori a tanta perfezzione che così la volta come il pavimento paiono, non di molti, ma d'un pezzo solo. La fama delle quali opere spargendosi non pure per Italia, ma per tutta l'Europa, erano tanti coloro che ne volevano, che i mercatanti fiorentini, facendo continuamente lavorare a Luca con suo molto utile, ne mandavana per tutto il mondo.

E perché egli solo non poteva al tutto suplire, levò dallo scarpello Ottaviano et Agostino suoi fratelli e gli mise a fare di questi lavori, nei quali egli insieme con esso loro guadagnavano molto più che insino allora con lo scarpello fatto non avevano; perciò che, oltre all'opere che di loro furono in Francia et in Ispagna mandate, lavorarono ancora molte cose in Toscana, e particularmente al detto Piero de' Medici, nella chiesa di S. Miniato a Monte, la volta della capella di marmo che posa sopra quattro colonne nel mezzo della chiesa, facendovi un partimento d'ottangoli bellissimo. Ma il più notabile lavoro che in questo genere uscisse delle mani loro fu, nella medesima chiesa, la volta della capella di S. Iacopo, dove è sotter[r]ato il cardinale di Portogallo; nella quale, se bene è senza spigoli, fecero in quattro tondi ne' cantoni i quattro Evangelisti, e nel mezzo della volta in un tondo lo Spirito Santo, rimpiendo il resto de' vani a scaglie che girano secondo la volta e diminuiscono a poco a poco insino al centro, di maniera che non si può in quel genere veder meglio, né cosa murata e commessa con più diligenza di questa. Nella chiesa poi di S. Piero Buonconsiglio, sotto Mercato Vecchio, fece in un archetto sopra la porta la Nostra Donna con alcuni Angeli intorno molto vivaci; e sopra una porta d'una chiesina vicina a S. Pier Maggiore, in un mezzo tondo, un'altra Madonna et alcuni Angeli che sono tenuti bellissimi. E nel capitolo similmente di S. Croce, fatto dalla famiglia de' Pazzi e d'ordine di Pippo di ser Brunellesco, fece tutti gl'invetriati di figure che dentro e fuori vi si veggiono. Et in Ispagna si dice che mandò Luca al re alcune figure di tondo rilievo molto belle, insieme con alcuni lavori di marmo. Per Napoli ancora fece, in Fiorenza, la sepoltura di marmo all'Infante fratello del duca di Calavria con molti ornamenti d'invetriati, aiutato da Agostino suo fratello.

Dopo le quali cose cercò Luca di trovare il modo di dipignere le figure e le storie in sul piano di terracotta per dar vita alle pitture, e ne fece sperimento in un tondo che è sopra il tabernacolo de' Quattro Santi intorno a Orsanmichele, nel piano del quale fece in cinque luoghi gl'instrumenti et insegne dell'Arti de' Fabricanti con ornamenti bellissimi. E due altri tondi fece nel medesimo luogo di rilievo: in uno per l'Arte degli Speziali una Nostra Donna, e nell'altro, per la Mercatantia, un giglio sopra una balla, che ha intorno un festone di frutti e foglie di varie sorti, tanto ben fatte che paiono naturali e non di terracotta dipinta. Fece ancora, per messer Benozzo Federighi vescovo di Fiesole, nella chiesa di S. Brancazio, una sepoltura di marmo, e sopra quella esso Federigo a giacere ritratto di naturale e tre altre mezze figure; e nell'ornamento de' pilastri di quell'opera dipinse nel piano certi festoni a mazzi di frutti e foglie sì vive e naturali che col pennello in tavola non si farebbe altrimenti a olio; et invero questa opera è maravigliosa e rarissima, avendo in essa Luca fatto i lumi e l'ombre tanto bene che non pare quasi che a fuoco ciò sia possibile. E se questo artefice fusse vivuto più lungamente che non fece, si sarebbono anco vedute maggior' cose uscire delle sue mani, perché poco prima che morisse aveva cominciato a fare storie e figure dipinte in piano, delle quali vidi già io alcuni pezzi in casa sua che mi fanno credere che ciò gli sarebbe agevolmente riuscito, se la morte, che quasi sempre rapisce i migliori quando sono per fare qualche giovamento al mondo, non l'avesse levato, prima che bisogno non era, di vita.

Rimase dopo Luca Ottaviano et Agostino suoi fratelli, e d'Agostino nacque un altro Luca, che fu ne' suoi tempi litteratissimo. Agostino dunque, seguitando dopo Luca l'arte, fece in Perugia l'anno 1461 la facciata di S. Bernardino e dentrovi tre storie di basso rilievo e quattro figure tonde molto ben condotte e con delicata maniera. Et in

questa opera pose il suo nome con queste parole: AUGUSTINI FLORENTINI LAPICIDAE.

Della medesima famiglia, Andrea nipote di Luca lavorò di marmo benissimo, come si vede nella capella di S. Maria delle Grazie fuor d'Arezzo, dove per la comunità fece in un grande ornamento di marmo molte figurette e tonde e di mezzo rilievo: in un ornamento, dico, a una Vergine in mano di Parri di Spinello Aretino. Il medesimo fece di terracotta in quella città la tavola della capella di Puccio di Magio in S. Francesco, e quella della Circoncisione per la famiglia de' Bacci. Similmente in S. Maria in Grado è di sua mano una tavola bellissima con molte figure, e nella Compagnia della Trinità, all'altar maggiore, è di sua mano in una tavola un Dio Padre che sostiene con le braccia Cristo crucifisso circondato da una moltitudine d'Angeli, e da basso San Donato e S. Bernardo ginocchioni. Similmente nella chiesa et in altri luoghi del Sasso della Vernia fece molte tavole che si sono mantenute in quel luogo deserto, dove niuna pittura neanche pochissimi anni si sarebbe conservata. Lo stesso Andrea lavorò in Fiorenza tutte le figure che sono nella loggia dello Spedale di S. Paulo di terra invetriata, che sono assai buone, e similmente i putti che fasciati e nudi sono fra un arco e l'altro ne' tondi della loggia dello Spedale degl'Innocenti, i quali tutti sono veramente mirabili e mostrano la gran virtù et arte d'Andrea; senza molte altre, anzi infinite opere che fece nello spazio della sua vita, che gli durò anni ottantaquattro. Morì Andrea l'anno 1528; et io, essendo ancor fanciullo, parlando con esso lui gli udii dire, anzi gloriarsi, d'essersi trovato a portar Donato alla sepoltura; e mi ricorda che quel buon vecchio di ciò ragionando n'aveva vanagloria.

Ma per tornare a Luca, egli fu con gl'altri suoi sepellito in San Pier Maggiore nella sepoltura di casa loro; e dopo lui nella medesima fu riposto Andrea, il qual lasciò

due figliuoli frati in San Marco, stati vestiti dal reverendo fra' Girolamo Savonarola, del quale furono sempre que' della Robbia molto divoti, e lo ritrassero in quella maniera che ancora oggi si vede nelle medaglie. Il medesimo, oltre i detti due frati, ebbe tre altri figliuoli: Giovanni, che attese all'arte e che ebbe tre figliuoli, Marco, Lucantonio e Simone che morirno di peste l'anno 1527, essendo in buona espettazione; e Luca e Girolamo, che attesono alla scultura; de' quali due, Luca fu molto diligente negl'invetriati e fece di sua mano, oltre a molte altre opere, i pavimenti delle logge papali che fece fare in Roma, con ordine di Raffaello da Urbino, papa Leone Decimo, e quelli ancora di molte camere dove fece l'imprese di quel Pontefice; Girolamo, che era il minore di tutti, attese a lavorare di marmo e di terra e di bronzo, e già era per la concorrenza di Iacopo Sansovino, Baccio Bandinelli et altri maestri de' suoi tempi, fattosi valente uomo, quando da alcuni mercatanti fiorentini fu condotto in Francia, dove fece molte opere per lo re Francesco a Madrì, luogo non molto lontano da Parigi, e particolarmente un palazzo con molte figure et altri ornamenti d'una pietra che è come fra noi il gesso di Volterra, ma di miglior natura perché è tenera quando si lavora e poi col tempo diventa dura. Lavorò ancora di terra molte cose in Orliens, e per tutto quel regno fece opere, acquistandosi fama e bonissime facultà.

Dopo queste cose, intendendo che in Fiorenza non era rimaso se non Luca suo fratello, trovandosi ricco e solo al servigio del re Francesco, condusse ancor lui in quelle parti per lasciarlo in credito e buono aviamento; ma il fatto non andò così, perché Luca in poco tempo vi si morì, e Girolamo di nuovo si trovò solo e senza nessuno de' suoi; per che, risolutosi di tornare a godersi nella patria le ricchezze che si aveva con fatica e sudore guadagnate, et anco lasciare in quella qualche memoria, si acconciava a vivere in

Fiorenza l'anno 1553, quando fu quasi forzato mutar pensiero; perché vedendo il duca Cosimo, dal quale sperava dovere essere con onor adoperato, occupato nella guerra di Siena, se ne tornò a morire in Francia. E la sua casa non solo rimase chiusa e la famiglia spenta, ma restò l'arte priva del vero modo di lavorare gl'invetriati; perciò che, se bene dopo loro si è qualcuno esercitato in quella sorte di scultura, non è però niuno già mai a gran pezza arivato all'eccellenza di Luca vecchio, d'Andrea e degl'altri di quella famiglia. Onde, se io mi sono disteso in questa materia forse più che non pareva che bisognasse, scusimi ognuno, poiché l'avere trovato Luca queste nuove sculture – le quali non ebbero, che si sappia, gl'antichi Romani – richiedeva che, come ho fatto, se ne ragionasse a·llungo. E se dopo la Vita di Luca vecchio ho succintamente detto alcune cose de' suoi descendenti che sono stati insino a' giorni nostri, ho così fatto per non avere altra volta a rientrare in questa materia.

Luca dunque, passando da un lavoro ad un altro, e dal marmo al bronzo e dal bronzo alla terra, ciò fece non per infingardag[g]ine, né per essere, come molti sono, fantastico, instabile e non contento all'arte sua, ma perché si sentiva dalla natura tirato a cose nuove, e dal bisogno a uno essercizio secondo il gusto suo e di manco fatica e più guadagno. Onde ne venne aricchito il mondo e l'arti del disegno d'un'arte nuova, utile e bellissima, et egli di gloria e lode immortale e perpetua.

Ebbe Luca bonissimo disegno e grazioso, come si può vedere in alcune carte del nostro libro lumeggiate di biacca, in una delle quali è il suo ritratto, fatto da lui stesso con molta diligenza guardandosi in una spera.

Il fine della Vita di Luca della Robbia scultore.

Published in: Giorgio Vasari, *Le vite de' più eccellenti pittori, scultori e architettori nelle redazioni del 1550 e 1568*, edited by Rosanna Bettarini and Paola Barocchi, vol. 3 (Florence: Sansoni, 1966-), 49-58.

Document 16

Aggiunte Dell' Editore (to Libro di Antonio Billi), "I. Memoriale di curiosità artistiche in Firenze, fatto dal canonico Antonio Petrei", (1560s-70s?)

Santa Maria del Fiore

Lo ornamento dello organo maggiore e la porta di bronzo sotto detto organo, che ui è la resurressione di Nostro Signore: Luca della Robbia. La storia sopra la sagrestia uechia: Luca detto. ... I principij delle arti liberali nel campanile Luca della Robbia.

Published in: *Il Libro di Antonio Billi. Esistente in due copie nella Biblioteca Nazionale di Firenze*, edited by Carl Frey (Berlin: G. Grote'sche Verlagsbuchhand- lung, 1892): 55-56.

APPENDIX B

Records for the *Resurrection* and *Ascension* with the Opera del Duomo in Florence and Final Payment for *Resurrection*

All three documents have been previously published and can be found, together with a discussion of other documented payments for both, in John Pope-Hennessy, *Luca della Robbia*. Ithaca, NY: Cornell University Press, 1980. Other small payments for the *Ascension*, not included here, are transcribed in Allan Marquand, *The Brothers of Giovanni della Robbia. Fra Mattia, Luca, Girolamo, Fra Ambrogio* (Princeton, NJ: Princeton University Press, 1928). The correct dating for several of these documents is discussed in Margaret Haines, *The "Sacrestia delle messe" of the Florentine Cathedral* (Florence: Cassa di Risparmio di Firenze, 1983), 120-124. The partial selection of documents reproduced here was chosen for its bearing on the arguments presented in Chapters One and Four of this dissertation.

Document 1: 1442, July 21.

dicta die. Item locaverunt Luce Simonis della Robbia, scultori, ad faciendum in archo supra sacrestiam sui perghami Resurrexionem Domini in terra cotta invetriata prout videntur alia laboreria fieri et secundum designum factum et melius si melius fieri potest et promisit dare perfectam hinc ad unum annum et Operarii promiserunt dare illud pretium fiendum per homines eligendos per consules et operarios qui tunc temporis erunt cum hoc quod possit dare duos suspectos; que omnia etc. Promixit actendere etc. sub

pena lib. C. Presentibus Filippo Brunelleschi, Ridolfo (Lotti), Andrea Lazeri, Simone Laurentii et aliis.

Document 2: 1443/4, Febbr. 26.

Luce Simonis della Robbia intagliatori l. CCCCXL sunt pro resto et integra solutione unius laborerii invetriati (in margine: in quo est Resurrexio Domini nostri) facti et positi in archo prima sacrestie, videlicet l. CXL pro sua industria et inventione ad inveniendum dictum laborerium et residuam pro suo magisterio dicti laborerii alias libras C quas iam habuit super dicto laborerio in quo est Resurrexio domini nostri Jesu Christo.

Document 3: 1446, Oct. 11

1446. Die XI mensis Ottobris. Operarii antedicti, omni modo, etc., protestatione premissa etc., locaverunt et concesserunt etc. Luce Simonis della Robbia scultori, presenti et conducenti, ad faciendum: unam storiam terre cocte Invetriate illius materie qua est illa posita in arcu sacrestie que storia debet esse videlicet Ascensio [*corrected above*: Resurrectio] Domini nostri Yesu Cristi, cum duodecim figuris Apostolorum et Matris eius Virginis Marie et quod mons sit sui coloris arbores etiam sui coloris et secundum designum factum in quodam modello parvo, qui stare debet in Opera usque ad perfectionem dicti laborerii et melius, si melius fieri potest. Quam storiam debet perfecisse hinc ad otto menses proxime futuros et posuisse super archum secunde sacrestie et pro qua storia et Magisterio debet abere [*sic*] et pro suo magisterio labore et industria illud quod declaratum erit per offitium Operariorum pro tempore in offito existentium. Que omnia etc., pro quinus etc., obligaverunt etc. Rogantes etc. Presentibus

testibus domino Iohanne Spinellini preposito duomis [*sic*] et ser Ambroxio Angeli Angeni et Iohanne Francisci Zati.

Figures

Figure 1 Attributed to Luca della Robbia, *Virgin and Child with Six Angels*, terracotta, 1420s? Paris, Musée du Louvre.

Figure 2 Attributed to Luca della Robbia, *Virgin and Child with Four Saints*, terracotta, 1420s? Paris, Musée du Louvre.

Figure 3 Luca della Robbia, Organ loft (original marble framework and plaster casts of reliefs), 1431-1438. Florence, Museo dell'Opera del Duomo.

Figure 4 Luca della Robbia, *Resurrection*, glazed terracotta, 1442-1444. Florence, Santa Maria del Fiore.

Figure 5 Luca della Robbia, *Ascension*, glazed terracotta, 1446-1451. Florence, Santa Maria del Fiore.

Figure 6 Luca della Robbia, *Candle-bearing angel* (first of a pair), glazed terracotta, 1448. Florence, Santa Maria del Fiore.

Figure 7 Luca della Robbia *Candle-bearing angel* (second of a pair), glazed terracotta, 1448. Florence, Santa Maria del Fiore.

Figure 8 Luca della Robbia, Host Tabernacle, marble and glazed terracotta, 1441-1443. Florence, Santa Maria a Peretola (formerly Florence, Santa Maria Nuova, Chapel of St. Luke).

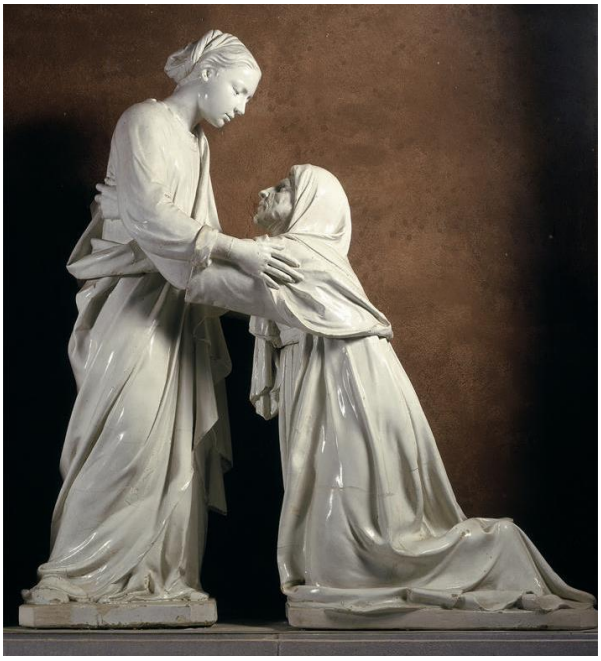

Figure 9 Luca della Robbia, *Visitation*, glazed terracotta, c. 1445. Pistoia, San Giovanni fuorcivitas.

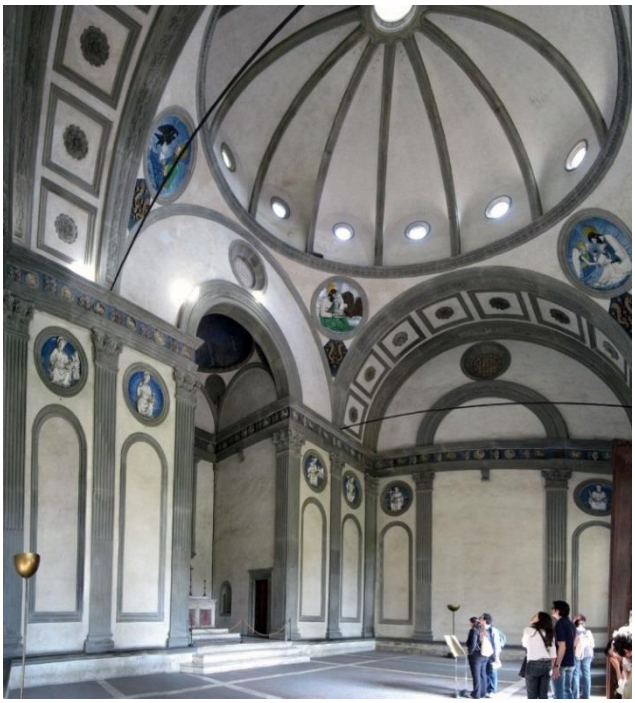

Figure 10 Interior of Pazzi Chapel, designed by Brunelleschi. Twelve glazed terracotta roundels of the apostles in lower level by Luca della Robbia, 1440s forward.

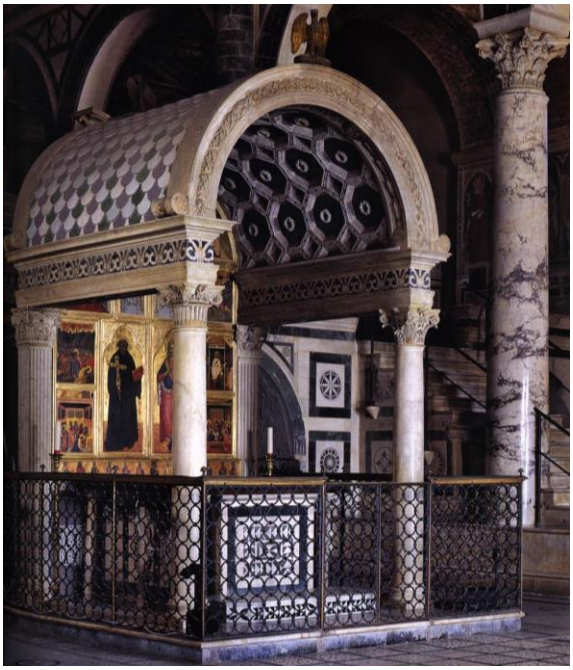

Figure 11 Luca della Robbia, interior and exterior ceiling tiles for Chapel of the Crucifix, glazed terracotta, 1447-circa 1452. Florence, San Miniato al Monte.

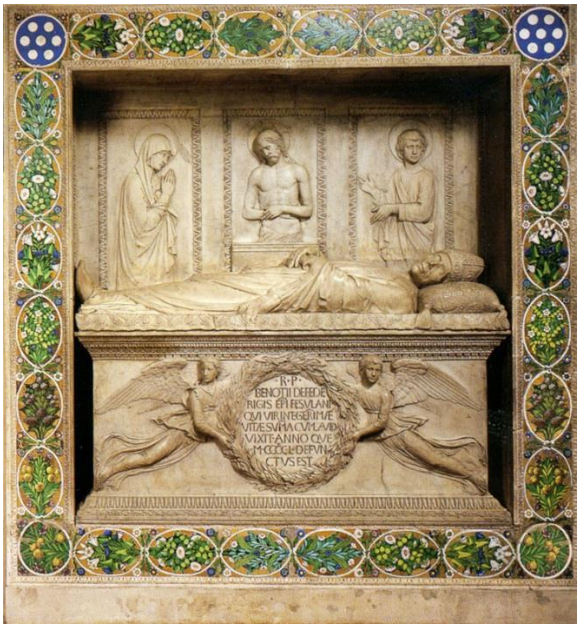

Figure 12 Luca della Robbia, Tomb of Bishop Federighi, marble and glazed terracotta, c. 1454-1457. Florence, Santa Trinita (formerly in transept of San Pancrazio).

Figure 13 Luca della Robbia, *Virgin and Child with Saints*, glazed terracotta, 1450-1451. Urbino, Galleria Nazionale delle Marche.

Figure 14 Luca della Robbia, Ceiling (Four Cardinal Virtues and Dove of the Holy Spirit), glazed terracotta, 1461. Florence, Prince of Portugal Chapel, San Miniato al Monte.

Figure 15 Luca della Robbia, North Sacristy doors, bronze, 1464-1475. Florence, Santa Maria del Fiore.

Figure 16 Luca della Robbia, *Innocenti Virgin and Child*, glazed terracotta, ca. 1450. Florence, Museo degli Innocenti.

Figure 17 Donatello, *Cavalcanti Annunciation*, late 1430s-early 1440s. Florence, Santa Croce.

Figure 18 Fra Angelico, *Annunciation*, tempera on panel, ca. 1432-1434. Cortona, Museo Diocesano.

Figure 19 Ambrogio Lorenzetti, *Presentation at the Temple*, tempera on panel, 1342. Florence, Galleria degli Uffizi.

Figure 20 Giotto, *Fortitude*, fresco, ca.1302-1305. Padua, dado level decoration of Arena Chapel.

Figure 21 Giovanni Francesco Rustici, *Saint John the Baptist*, glazed terracotta, ca. 1505-1515. Boston, Museum of Fine Arts.

Figure 22 Workshop of Benozzo Gozzoli, Studies of Plaster Casts of Feet, Rotterdam Sketchbook, silverpoint, bister and white paint on green paper, 1460s. Rotterdam, Museum Boymans-van Beuningen.

Figure 23 Luca della Robbia, *Twelve Months Roundels*, glazed terracotta, early 1450s. London, Victoria and Albert Museum (formerly in *studiolo* of Piero de' Medici in the Medici Palace, Via Larga, Florence).

Figure 24 Luca della Robbia, *January*, glazed terracotta, early 1450s. One of the *Twelve Months* roundel decorations for the *studiolo* of Piero de' Medici in figure 23.

Figure 25 Donatello, *Saint Louis of Toulouse*, fire-gilt bronze, 1423-1425. Florence, Santa Croce (formerly niche of the Parte Guelfa, Orsanmichele).

Figure 26 Detail of figure 16

Figure 27 Detail of figure 16

Figure 28 Detail of figure 16

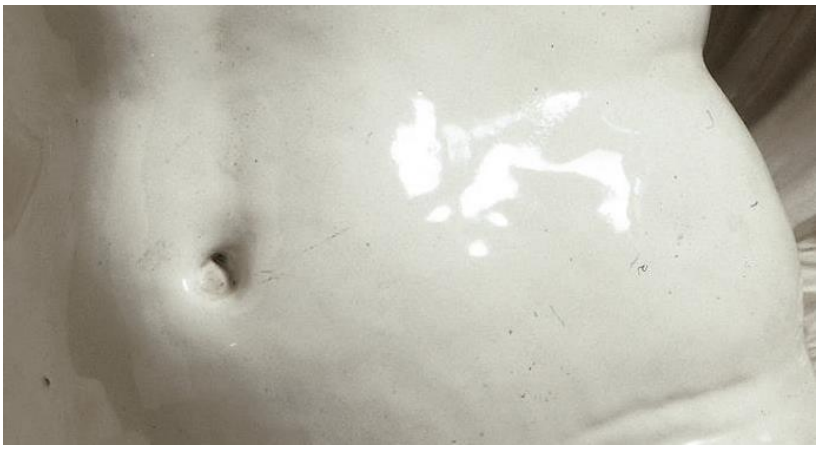

Figure 29 Detail of figure 16

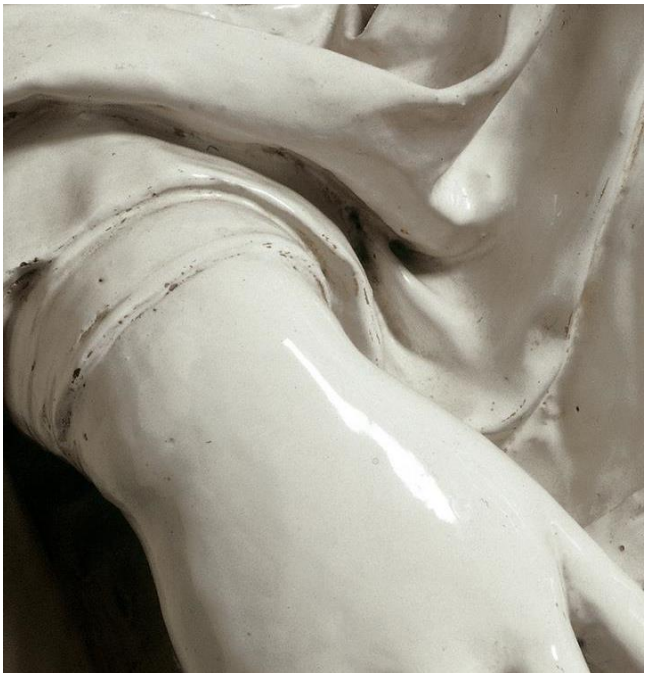

Figure 30 Detail of figure 16

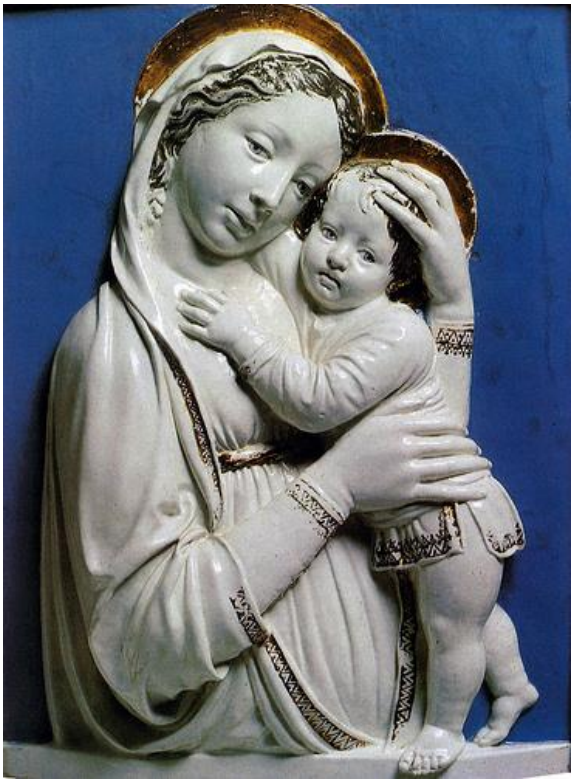

Figure 31 Luca della Robbia, *Madonna and Child* (Genoa Madonna), glazed terracotta, 1445/50? Detroit Institute of Arts.

Figure 32 Unknown manufacture, *Annunciation*, glazed terracotta, early twentieth century. New York, Saint Mark's in-the-Bowery.

Figure 33 Andrea della Robbia, *Annunciation*, glazed terracotta, ca. 1475. Chiusi della Verna, Sanctuario della Verna, Chiesa Maggiore, Niccolini Chapel.

Figure 34 Sculpture from figure 32 seen during day by candlelight (candles at close range)

Figure 35 Detail of figure 34

Figure 36 Sculpture from figure 32 seen during day by candlelight (candles are further away than in figure 34)

Figure 37 Sculpture from figure 32 seen during in evening by candlelight

Figure 38 Luca della Robbia, Michelozzo, Maso di Bartolomeo, Crucifix Tabernacle with ambient light, 1447-1452. Florence, San Miniato al Monte.

Figure 39 Carlo Crivelli, *Madonna della Candeletta*, oil on panel, 1488-1490. Milan, Pinacoteca di Brera.

Figure 40 Luca della Robbia, Madonna of the Apple, glazed terracotta, 1450s? Florence, Museo Nazionale del Bargello.

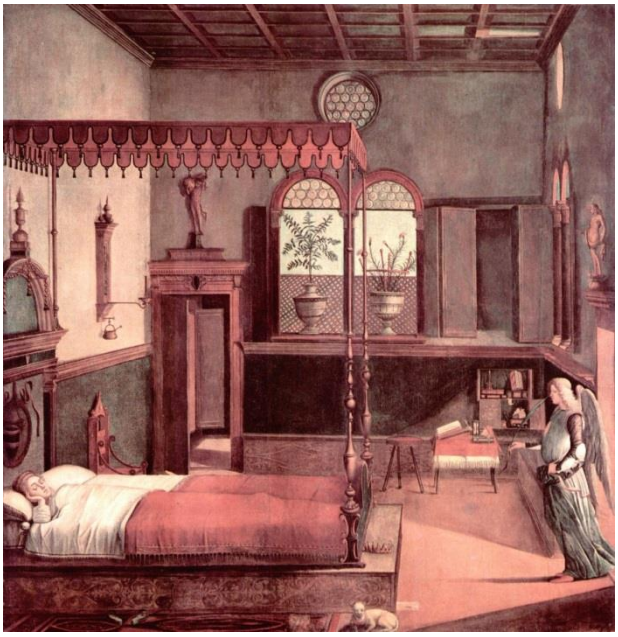

Figure 41 Vittore Carpaccio, *The Dream of St. Ursula*, tempera on canvas, 1495. Venice, Gallerie dell'Accademia (formerly Scuola di Sant'Orsola).

Figure 42 Anonymous, *The Young Lover at his Writing Table*, woodcut from the *Hypnerotomachia Poliphili*, 1499, printed by the Aldine Press, Venice.

Figure 43 Luca della Robbia, *Madonna of Humility*, glazed terracotta, ca. 1475, Washington, D.C., National Gallery of Art.

Figure 44 Luca della Robbia, Virgin and Child, glazed terracotta, 1440s? Florence, Oratorio di San Tommaso d'Aquino.

Figure 45 Maker unknown (perhaps workshop of Maso and Miniato di Domenico or of Giunta di Tugio), Two-handled pharmacy jar with hounds, maiolica (*zaffera a rilievo* style), ca. 1427-1431. Cambridge, Fitzwilliam Museum.

Figure 46 Luca della Robbia, *St. James the Great*, glazed terracotta, 1440s-50s. Florence, Santa Croce, Pazzi Chapel.

Figure 47 Luca della Robbia, Stemma of the Guild of the Medici e Speziali, glazed terracotta, 1460s. Florence, Orsanmichele.

Figure 48 Detail of figure 47

Figure 49 Andrea della Robbia, *Saint Michael the Archangel*, glazed terracotta, ca. 1475. New York, The Metropolitan Museum of Art.

Figure 50 Andrea della Robbia, *Prudence*, glazed terracotta, ca. 1475. New York, The Metropolitan Museum of Art.

Figure 51 Luca della Robbia, detail of *Ascension* with Virgin and apostles, glazed terracotta, 1446-1451. Florence, Santa Maria del Fiore.

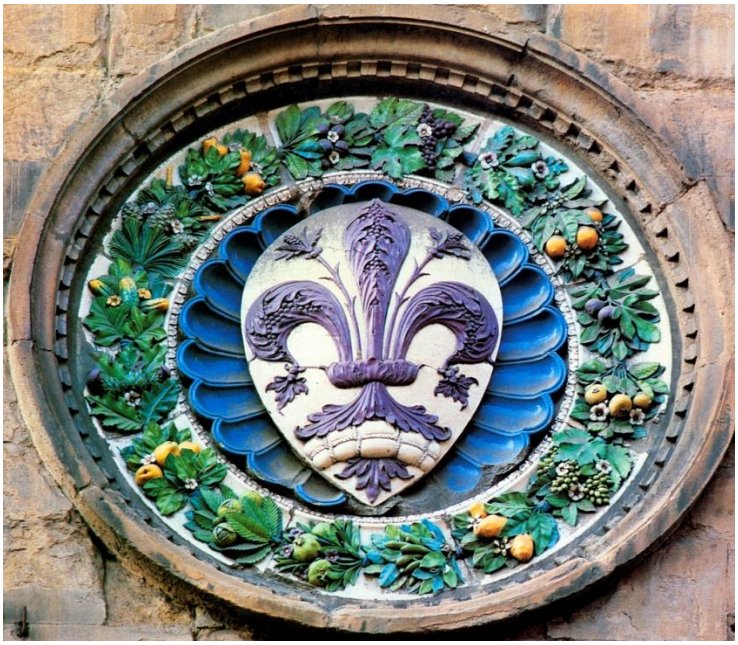

Figure 52 Luca della Robbia, Stemma of the Mercanzia, glazed terracotta, 1463. Florence, Orsanmichele.

Figure 53 Luca della Robbia, Stemma of Rene of Anjou, glazed terracotta, post-1466. London, Victoria and Albert Museum.

Figure 54 Luca della Robbia, Virgin and Child (Corsini type), glazed terracotta, 1440s? Florence, Corsini Collection.

Figure 55 Detail of figure 8, blue rosette, glazed terracotta

Figure 56 Detail of figure 8, Crutch emblem of hospital of Santa Maria Nuova in blue quatrefoil, glazed terracotta

Figure 57 Detail of figure 12, olive and palm branches

Figure 58 Detail of figure 12, yellow pomegranates and flowers

Figure 59 Designed by Paolo Uccello, executed by Bernardo di Francesco, *Resurrection*, stained glass, 1443-1444. Oculus from the drum of Santa Maria del Fiore, Florence.

Figure 60 Designed by Lorenzo Ghiberti, executed by Bernardo di Francesco, *Ascension*, stained glass, 1443-1444. Oculus from the drum of Santa Maria del Fiore, Florence.

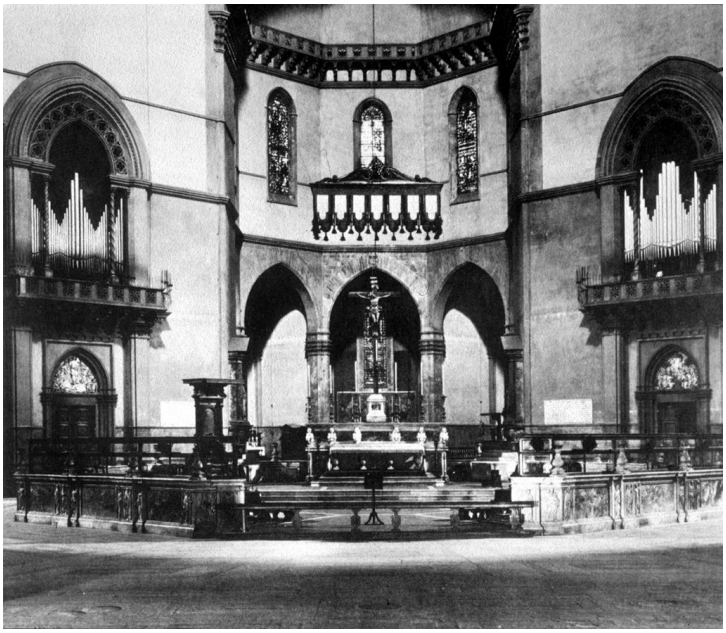

Figure 61 View of high altar in the crossing of Santa Maria del Fiore, Florence.

Figure 62 Lorenzo Ghiberti, *Resurrection*, gilded bronze, 1403-1424. Florence, Baptistery of San Giovanni, North Doors.

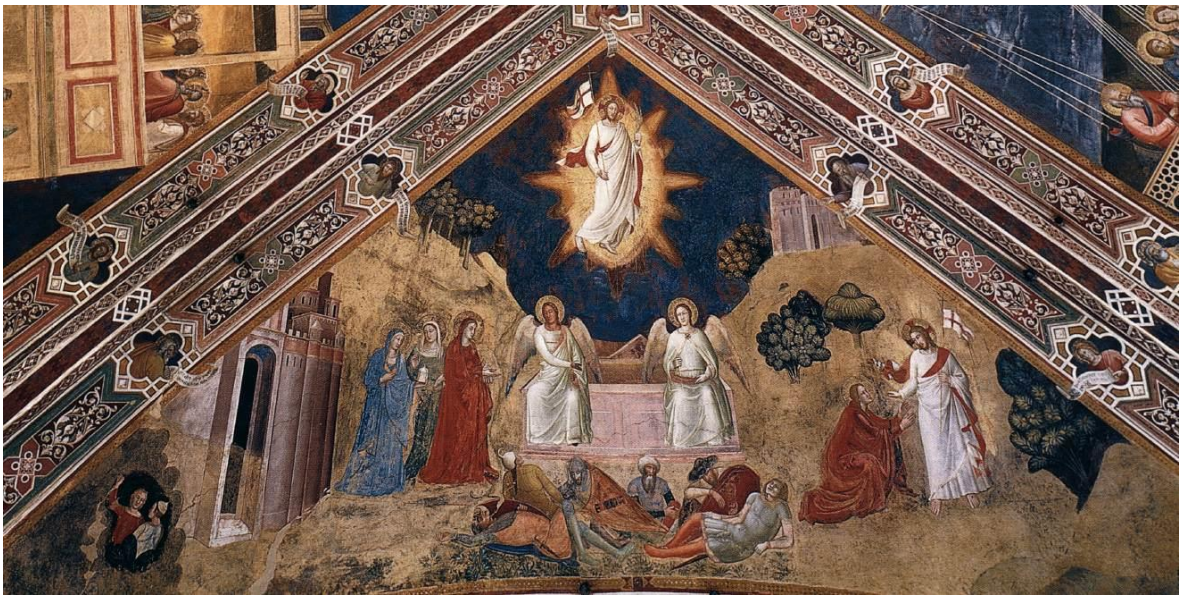

Figure 63 Andrea di Bonaiuto da Firenze, *The Resurrection of Christ*, vault fresco, 1366-1367. Florence, Santa Maria Novella, Chapter house (Spanish Chapel).

Figure 64 Andrea di Bonaiuto da Firenze, *The Ascension of Christ*, vault fresco, 1366-1367. Florence, Santa Maria Novella, Chapter house (Spanish Chapel).

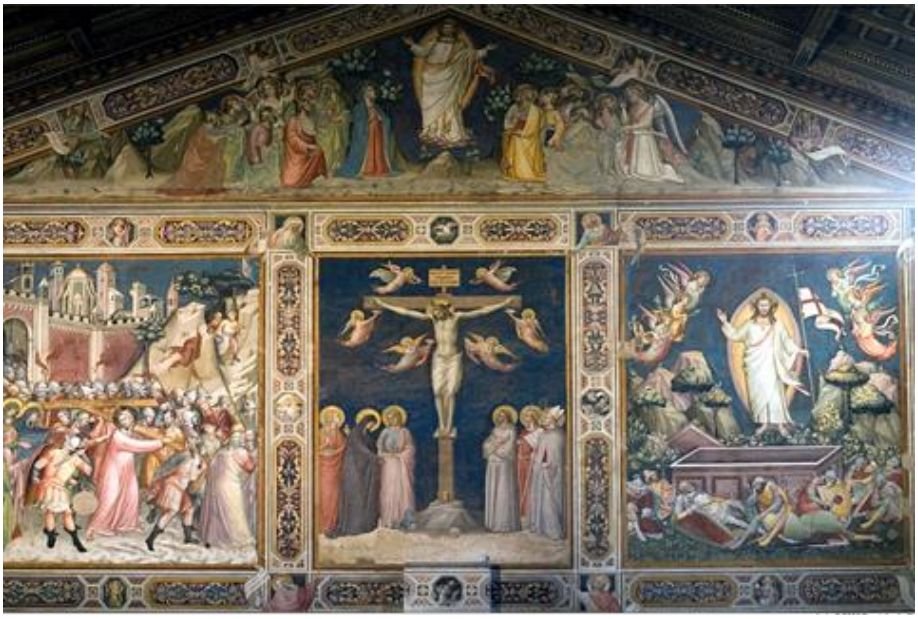

Figure 65 Taddeo Gaddi, Niccolò di Pietro Gerini, Spinello Aretino, *Way to Calvary, Crucifixion, Resurrection, Ascension*, fresco, ca. 1360-1366 (*Crucifixion*) and 1390s (others). Florence, Santa Croce, Sacristy.

Figure 66 Jacopo di Cione, *Ascension* from San Pier Maggiore altarpiece, tempera on panel, 1370-1371. London, National Gallery.

Figure 67 Jacopo di Cione, *Resurrection* from San Pier Maggiore altarpiece, tempera on panel, 1370-1371. London, National Gallery.

Figure 68 Oblique detail of figure 4

Figure 69 Oblique view of figure 5

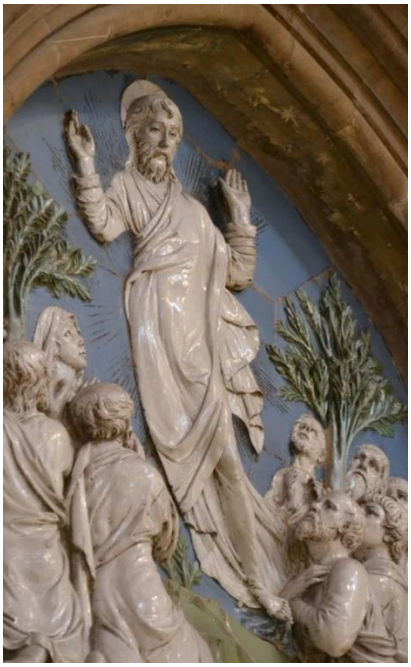

Figure 70 Oblique detail of figure 5

Figure 71 Paolo Uccello, *Temptation*, fresco, ca. 1440s. Florence, Santa Maria Novella, Chiostro Verde.

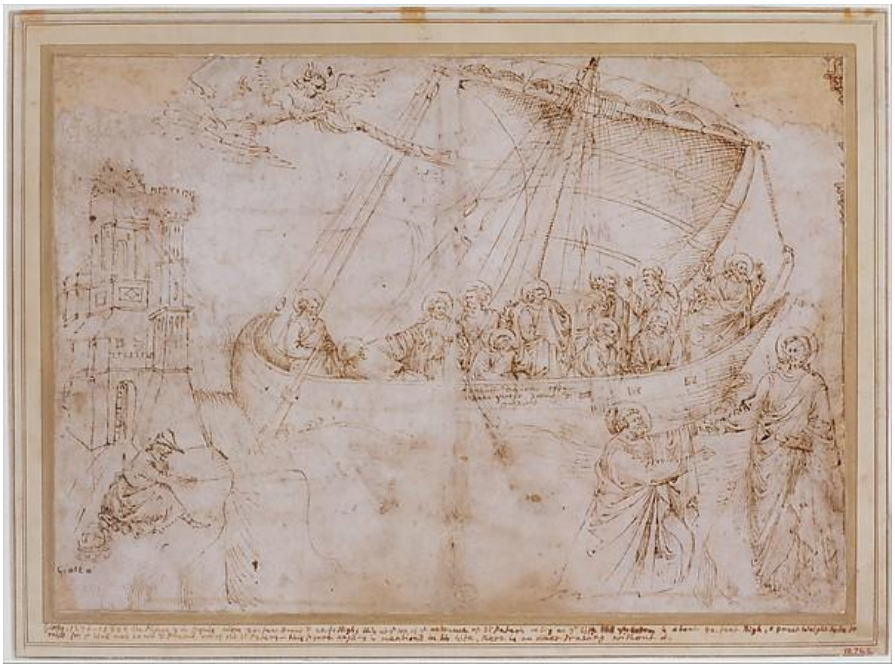

Figure 72 Parri Spinelli, Free copy of Giotto's *Navicella* (mosaic at Old Saint Peter's), ca. 1420, pen and brown ink. New York, The Metropolitan Museum.

Figure 73 Luca della Robbia, *Deliverance of Saint Peter*, marble, 1439. Florence, Museo Nazionale del Bargello.

Figure 74 Luca della Robbia, *Crucifixion of Saint Peter*, marble, 1439. Florence, Museo Nazionale del Bargello.

Figure 75 Nanni di Banco, *Assumption of the Virgin*, marble, 1414-1422. Florence, Santa Maria del Fiore, Porta della Mandorla.

Figure 76 Andrea Orcagna, *Dormition and Assumption of the Virgin*, marble and glass, ca. 1352-1359. Florence, Chiesa di Orsanmichele.

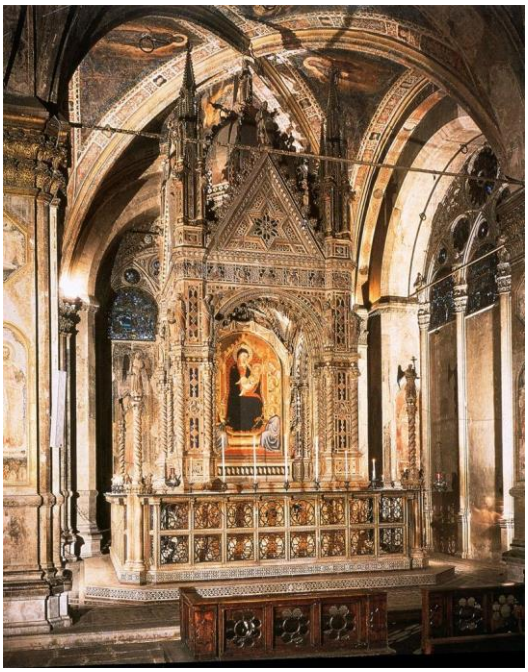

Figure 77 Andrea Orcagna, Tabernacle of Orsanmichele, marble and glass, ca. 1352-1359. Florence, Chiesa di Orsanmichele.

Figure 78 Nicola Pisano and workshop, Arca of Saint Dominic, marble and *verre églomisé*, completed by 1267. Bologna, San Domenico.

Figure 79 Arnolfo di Cambio, *Virgin and Child* with polychrome marble and *cosmati* panel, ca. 1296-1302/10, originally for façade of Santa Maria del Fiore. Florence, Museo dell'Opera del Duomo.

Figure 80 *Venus*, marble and glazed terracotta, mid-1340s. Florence, Museo dell'Opera del Duomo (formerly Campanile).

Figure 81 Andrea Pisano, *Virgin and Child*, marble and glazed terracotta, ca. 1337-1343. Florence, Museo dell'Opera del Duomo (formerly Campanile).

Figure 82 Executed by Jacopo di Piero Guidi, Giovanni di Ambrogio, and Giovanni di Francesco Fetti, *Temperance*, marble with glass inlay by Frate Leonardo, 1383-1391. Florence, Loggia dei Lanzi.

Figure 83 Donatello, *St. George and the Dragon*, marble, ca. 1417. Florence, Museo Nazionale del Bargello.

Figure 84 Michelozzo, *Virgin and Child*, marble and glass inset, fifteenth century. Florence, Museo Nazionale del Bargello.

Figure 85 Donatello, *Madonna and Child* ("Piot Madonna"), terracotta, wax, glass disks, fifteenth century. Paris, Musée du Louvre.

Figure 86 Donatello, “Madonna del Perdono,” marble and blue glass, ca. 1457-1459. Siena, Museo dell’Opera del Duomo.

Figure 87 Dello Delli, *Coronation of the Virgin*, terracotta with traces of blue paint and gilding, ca. 1420-1424. Florence, Ospedale di Santa Maria Nuova.

Figure 88 Luca della Robbia, *Madonna del Roseto*, glazed terracotta, 1460s? Florence, Museo Nazionale del Bargello.

Figure 89 Luca and Andrea della Robbia, *Madonna and Child with Saints James Major and Blaise*, 1455/60. Pescia, Palazzo Vescovile (formerly San Biago).

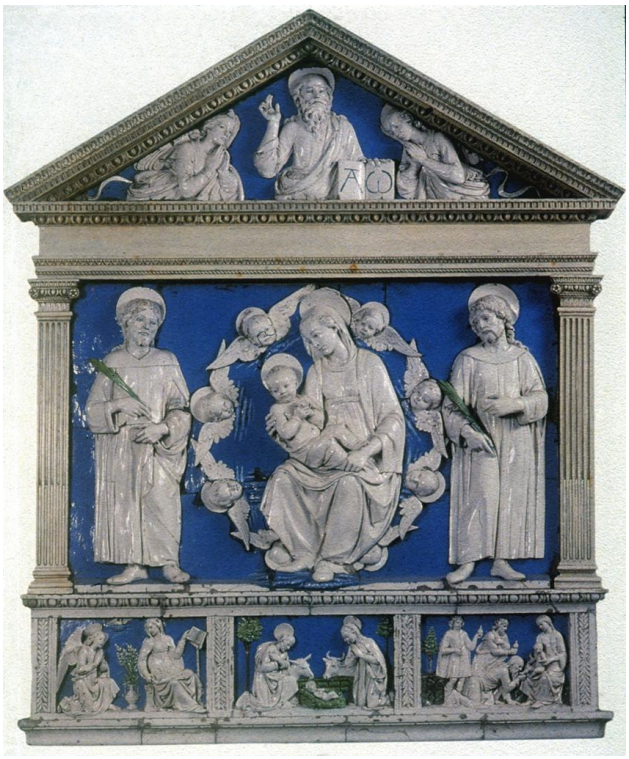

Figure 90 Andrea della Robbia, *Madonna and Child with Saints Cosmas and Damien*, glazed terracotta, 1466. Florence, Arciconfraternita della Misericordia (formerly Fiesole, Badia fiesolana).

Figure 91 Andrea della Robbia, *Coronation of the Virgin between Saint Francis and the Penitent Jerome,* glazed terracotta, ca. 1464. Santa Fiora, Pieve delle Sante Fiora e Lucilla.

Figure 92 San Francesco, Bologna, 1236-1263. Decoration with *bacini* lines top of façade.

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