



EMBODIMENT, THE SENSES, AND THE COLOR WHITE AT ASSISI

LA CORPORALIDAD, LOS SENTIDOS Y EL COLOR BLANCO EN ASÍS

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Abstract: This study investigates the sensory and embodied spirituality present in Cimabue's frescoes at the Upper Basilica of Saint Francis in Assisi, with particular attention to the use of lead white pigment. The paper argues that Cimabue's choice of materials and visual motifs was deeply connected to the Franciscan understanding of the body and senses as pathways to divine experience. Through an analysis of key frescoes in the apse and transepts, the research explores how the Franciscans viewed sensory perception—such as sight and touch—as central to spiritual transformation. The murals not only served to visually communicate theological themes but also encouraged a multisensory engagement, fostering contemplation among the friars and lay viewers alike. The study also connects these visual strategies to the broader philosophical and theological context of the time, including the revival of Aristotelian ideas on perception and the influence of medieval optics. Furthermore, it examines how the Franciscans' emphasis on embodied spirituality was reflected in their approach to contemplation and action, particularly in the blending of the *vita contemplativa* and *vita activa*. By focusing on the material and symbolic significance of lead white, this paper highlights the intricate relationship between alchemical transformation and religious symbolism in late medieval art. Overall, the analysis provides a fresh perspective on how Cimabue's frescoes were

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designed to evoke an immersive, sensory spiritual experience, aligning with the Franciscans' mission of inner transformation and divine connection.

Keywords: Cimabue, Assisi frescoes, sensory spirituality, lead white, Franciscan theology.

Resumen: Este estudio investiga la espiritualidad sensorial y corporal presente en los frescos de Cimabue en la Basílica Superior de San Francisco en Asís, con especial atención al uso del pigmento blanco de plomo. El artículo sostiene que la elección de materiales y motivos visuales por parte de Cimabue estaba profundamente vinculada a la comprensión franciscana del cuerpo y los sentidos como vías hacia la experiencia divina. A través del análisis de frescos clave en el ábside y los transeptos, la investigación explora cómo los franciscanos consideraban la percepción sensorial—como la vista y el tacto—como elementos centrales para la transformación espiritual. Los murales no solo servían para comunicar temas teológicos, sino que también fomentaban un compromiso multisensorial, alentando la contemplación tanto entre los frailes como entre los espectadores laicos. El estudio también conecta estas estrategias visuales con el contexto filosófico y teológico más amplio de la época, incluido el resurgimiento de las ideas aristotélicas sobre la percepción y la influencia de la óptica medieval. Además, se examina cómo el énfasis de los franciscanos en la espiritualidad corporal se reflejaba en su enfoque de la contemplación y la acción, especialmente en la fusión de la *vita contemplativa* y la *vita activa*. Al centrarse en la importancia material y simbólica del blanco de plomo, este artículo destaca la relación intrincada entre la transformación alquímica y el simbolismo religioso en el arte medieval tardío. En general, el análisis ofrece una nueva perspectiva sobre cómo los frescos de Cimabue estaban diseñados para evocar una experiencia espiritual sensorial inmersiva, alineada con la misión franciscana de transformación interior y conexión divina.

Palabras clave: Cimabue, frescos de Asís, espiritualidad sensorial, blanco de plomo, teología franciscana.

The most sacred liturgical locus within the Upper Basilica of Saint Francis at Assisi is the apse and transepts, where the high altar and two conventual altars are located. It was here that the friars in the Sacro Convento gathered for worship. It comes as no surprise, then, that the leading painter of the day, the Florentine Cenni di Pepo, known as Cimabue (ca. 1240-1301) was hired



to embellish this space with a lavish and innovative set of murals depicting the Apocalypse, the Life, Death and Assumption of the Virgin Mary, the Four Evangelists, and the Apostles (Figure 1).²



Figure 1. View of Apse and Transepts Painted by Cimabue,
Upper Basilica of St Francis, Assisi
Photo: Author.

As demonstrated in studies by Chiara Frugoni, Serena Romano, myself, and others, the themes chosen for this space were all of particular concern to the Franciscans in their promotion of their founder's cult.³ In previous studies, I also explored the rationale behind Cimabue's use of extensive lead white

²The dating of these murals remains debated. Many scholars follow the arguments for the date ca. 1277-80 summarized in Andaloro (1984). For an argument for a later date, see Bellosi (2007, pp. 2-14), and for a more recent summary of the various arguments, see Bartalini (2015, pp. 357-382).

³Romano (1998), Frugoni (2015) and Flora (2018a).



pigments on the walls at Assisi, a disastrous choice that resulted in the paintings' poor condition. I argued that Cimabue's choice was in part ideological. Produced via alchemical methods that transformed gray metal into shining white powder, lead white produces a brilliant, fiery white that is perfectly suited to the themes of spiritual transformation presented in this space.⁴

In this paper, I return to the topic of Cimabue's use of lead white, here approaching it from the point of view of embodied spirituality and the physical and spiritual senses, topics of great interest to the friars in the Sacro Convento, the paintings' primary audience. I will foreground my analysis first with a brief discussion of the Franciscan approach to sensory experiences, as well as a review of the murals' history and context. Then I will explore two case studies in the paintings exemplifying the Franciscan approach to what I am calling embodied spirituality—that is, the idea that the human body can be appropriately deployed as a vehicle for experiencing the divine. I will then return to the subject of lead white as it is used in the space, contending that Cimabue's choice of this material reinforces the cycle's emphases on somatic experiences as gateways to spiritual renewal.

1. THE FRANCISCANS AND THE SENSES AT ASSISI

As I argued in previous studies, Cimabue's murals were intended to promote an array of sensorial experiences for their viewers.⁵ Although art historians are always concerned with the sense of sight, scholars are now exploring how works of art and architecture engaged the other four senses: sound, taste, touch, and smell.⁶ Studies have also explored how the senses worked synesthetically, that is, together in the experience of images, and in issues of perception beyond the traditional concept of the five senses.⁷ We can also speak of a “sensory

⁴ See Flora (2018b, pp. 1-38).

⁵ See Flora (2019, pp. 49-71).

⁶ On the “sensory turn” see for example Erin Benay and Lisa Rafanelli (2015).

⁷ The foundational study of somaesthetics is Richard Shusterman, “Somaesthetics” (1999, pp. 299-313); for a recent art historical application of this framework in a later Franciscan context see Allie Terry-Fritch (2015, pp. 111-132).



turn” in European medieval culture in Saint Francis’ time. Theological and philosophical texts from the thirteenth and fourteenth centuries foreground the senses as the gateways to the experience of God. In the thirteenth century, the Franciscans were key players in the revival of Aristotelian notions of perception, claiming that all knowledge begins with sensory experience.⁸

The renewed interest in Aristotelian philosophy is also related to advances in the study of optics in this period. Newly available translations of Arabic treatises on optics spurred groundbreaking studies in the field by Franciscans Roger Bacon, John Pecham, and others. Art historians, such as Theresa Flanagan in this volume, have connected these new theories of visual perception to the innovations in perspective and naturalism seen in the art of the thirteenth and fourteenth centuries. Perception was also central to the devotional practices promoted by the Franciscan Order, seen most clearly in the writings of Saint Bonaventure. Works such as his *Itinerarium mentis in deum*, for example, borrow heavily from Augustine’s Platonic theories of ascent to God.⁹ The bodily senses allowed one to move step by step towards experiential knowledge of God, which, once achieved, activated what Bonaventure called the ‘spiritual senses’. Mirroring the five bodily senses, these spiritual senses are found at a deeper level of contemplation in which God himself can be experienced fully, even though on earth he cannot be experienced physically.¹⁰

It was this knowledge of God through the body, but also beyond the limits of the body, that was the ultimate goal of late medieval contemplative practices. Although true union with God could be achieved only after death, Saint Francis had come closer than any other human being to that ultimate mysticism when he received the stigmata, as Saint Bonaventure’s *Legenda maior* emphasized. Bonaventure also maintained that Francis achieved this near-perfection through intense meditation on the crucified Christ and his sufferings. The practice of experiential contemplation Francis modeled therefore became fundamental to the

⁸ See the discussion in Cook (2014, p. 3) on the early Italian representations of Francis of Assisi.

⁹ Bonaventure’s *Itinerarium Mentis in Deum* (Bonaventure, 2002) explores the journey of the mind to God. For Bonaventure’s promotion of sensory experience and art as steps toward God, see Bychkov (2019).

¹⁰ See La Nave (2012, pp. 159-173) for a detailed discussion on Bonaventure’s understanding of sensory perception in Christian theology.



overall mission of the Franciscan Order; as Bonaventure stated, the Franciscans strove to create a ‘church of contemplatives’, encouraging meditation on Christ’s Passion for all Christians.¹¹ Accordingly, fueled by the friars’ desire to promote a vibrant contemplative life for themselves and their followers, Cimabue designed his murals at Assisi with the viewer’s sensorial engagement in mind.

2. THE UPPER BASILICA APSE AND TRANSEPT DECORATION

To set the stage for my discussion of Cimabue’s paintings, a brief reminder of their context and audiences is in order. The Basilica of Saint Francis, built to house the body of the saint, was consecrated in 1253, but the Upper Church remained largely devoid of pictorial decoration until at least a decade later, when a group of artists, probably from northern Europe, began painting the upper walls of the north transept. No documents for the Upper Church’s commission survive, so the exact timeframe is uncertain, but at some point, for unknown reasons, the northern painters failed to complete the project, and the Florentine artist Cimabue was brought in to finish it. Scholars debate the date of Cimabue’s arrival, but the majority believe that he worked at Assisi during the pontificate of Nicholas III, circa. 1277-80. In addition to painting scenes from the life of the Virgin Mary in the apse, Cimabue depicted the miracles and martyrdoms of the Apostles in the north transept, and in the south transept he illustrated Saint John’s Apocalypse.

He also painted a large crucifixion mural on the east wall of each transept (Figure 2).

These served as altarpieces for the two conventual altars placed there. At the time Cimabue painted his murals, a masonry barrier or wooden beam divided the nave from the friars’ choir and the transepts, marking the area around the high altar as the friars’ choir.¹²

But despite this barrier, we cannot assume that the friars would have been the only audience for the murals in this space. Several recent studies of

¹¹ Frug (2015, p. 99).

¹² There is still much uncertainty as to the original liturgical layout and furnishings of this space, so I want to be cautious in suggesting an ‘exclusive’ audience of the friars for the apse



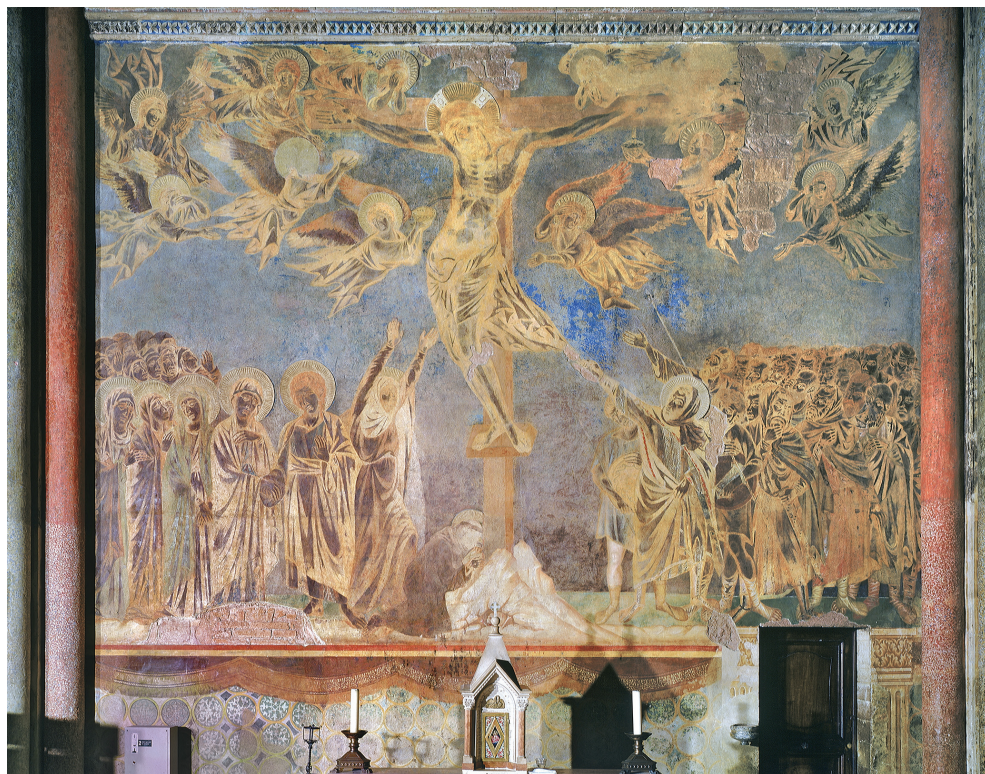


Figure 2. Cimabue, *Crucifixion*, Upper Basilica of St Francis, Assisi
Photo: Author.

and transepts. The fundamental study remains Hueck (2001, pp. 43-69), but her arguments have been countered by more recent proposals in Theis (2004, pp. 125-164), and Theis (2006, pp. 53-61). Of interest on the subject of viewers' access is Rebold Benton (1989, pp. 37-52), although some of her conclusions are contradicted by the more recent studies cited above.

There is still much uncertainty regarding the original liturgical layout and furnishings of this space, so I want to be cautious in suggesting an "exclusive" audience of the friars for the apse and transepts. The fundamental study remains Hueck (2001), but her arguments have been countered by more recent proposals from Theis (2004) and Theis (2006). On the subject of viewers' access, Rebold Benton (1989) discusses the perspective and spectator's circulation patterns in Assisi and Padua, though some of her conclusions have been challenged by the more recent studies mentioned above.



architecture in Franciscan churches suggest that others had access to the friar's choir at times. Thus, although primarily viewed by the friars, the decoration of the apse and transepts could have served a public function as well, advertising the friars' way of life and promoting key tenets of Franciscan spirituality.

3. HEALING, EMBODIMENT, AND THE *VITA MIXTA* IN THE NORTH TRANSEPT APOSTLES SCENES

We can understand Cimabue's north transept cycle as specifically relevant to the vocational duality of the Franciscan way of life. With Francis as their model, the friars sought to combine the monastic practice of secluded prayer and contemplation with service to the larger world via preaching and charity. They merged the traditional *vita contemplativa*, or contemplative life of prayer seen in traditional monasticism, with the *vita activa*, or active life of service in the world. In this *vita mixta* or *vita apostolica*, the friars sought also to return to the spiritual life lived by Christ and his Apostles.¹³ Although the Franciscans were not the only group to embrace the *vita mixta*, the centrality of their *vita apostolica* was asserted most emphatically during the decade in which Cimabue was painting at Assisi. The mendicant orders had been sharply criticized by a number of bishops and other clergy who objected to their interference within established church practices. At the Second Council of Lyons in 1274, Pope Gregory X argued for their place within the church, citing specifically their blend of the two ways of the spiritual life. Bonaventure also defended the mendicant way of life, holding up Francis himself as the exemplar of this twofold spirituality. In the *Legenda maior*, Bonaventure notes that Francis '...had so prudently learned to divide the time given to him for merit, that he spent some of it working for his neighbor's benefit and dedicated the rest to the tranquil excesses of contemplation'.¹⁴ It was Francis' dedication to contemplation that resulted in his bodily experience of the divine in his receipt of the stigmata.

¹³ For a discussion and bibliography on the Franciscans and the *vita mixta*, see Erhardt (2012, pp. 36-37, note 31).

¹⁴ Bonaventure, *Major Legend* 13:1 (Armstrong, Short, & Hellman, 1999-2001: 2, p. 630).



Not surprisingly, the theme of contemplation emerges throughout Cimabue's transept murals. Chiara Frugoni, in her 2015 book on the entire Upper Basilica decoration, pointed out that the figures of Peter and Paul, and also John the Evangelist, who plays an important role in several of the episodes depicted at Assisi, served as role models for the *vita mixta* or *vita apostolica*, the approach to the spiritual life exemplified by Francis. I would like to expand on Frugoni's proposal to suggest that Cimabue's north transept murals are even more specific in their references to the *vita apostolica*; the scenes chosen, as well as Cimabue's presentation of them, underscore the importance of sensory experiences in *vita activa* and the *vita contemplativa*. And, the *vita mixta* could spur acts of physical healing and the somatic experience of God.

This idea is clear in the beginning of the Apostles mural cycle on the north-west wall of the transept, in the scene of Peter Healing the Disabled (Figure 3).



Figure 3. Cimabue, *Peter Healing the Disabled*, Upper Basilica of St Francis, Assisi
Photo: Author.



The narrative corresponds to the biblical account in the book of Acts:

Now Peter and John went up into the temple at the ninth hour of prayer. And a certain man who was lame from his mother's womb, was carried: whom they laid every day at the gate of the temple, which is called Beautiful, that he might ask alms of them that went into the temple. He, when he had seen Peter and John about to go into the temple, asked to receive alms. But Peter with John fastening his eyes upon him, said: Look upon us. But he looked earnestly upon them, hoping that he should receive something of them. But Peter said: Silver and gold I have none; but what I have, I give thee: In the name of Jesus Christ of Nazareth, arise, and walk. And taking him by the right hand, he lifted him up, and forthwith his feet and soles received strength. And he leaping up, stood, and walked, and went in with them into the temple, walking, and leaping, and praising God.¹⁵

In Cimabue's mural, Peter, at the center of the composition, strides forward, taking the hand of the lame man, while John stands looking on at left. The lower portion of the painting is extremely damaged, but one can make out a second seated figure behind the lame man, possibly another beggar. A crowd of bearded men stands to the right, expressing astonishment at the scene. These are the "men of Israel" whom Peter in the following passage in Acts holds responsible for the death of Christ.

Leading the Apostolic series off with this episode would immediately trigger in the viewer an awareness of the senses and their power in the miraculous acts of the early followers of Christ. Sight and touch in particular are highlighted here. The biblical text states that Peter and John first looked at the lame man, and demanded that he look back at them, as a prelude to his healing, 'But Peter with John, fastening his eyes upon him, said: Look upon us'. For medieval Christians, sight was considered the most powerful and primary of the senses, fundamental to the pursuit of knowledge and a prerequisite to belief.¹⁶ Vision was linked to faith in biblical exegesis; the man therefore is asked to 'see' before he is touched by Peter, and only then can he walk. Spiritual healing, activated through the bodily senses, leads to physical renewal.

¹⁵ Acts 3: 1-11, *Douay Rheims Bible*, Challoner Revision. www.drbo.org. Acts 3: 1-11.

¹⁶ See for example the discussion in Michael Camille (in Nelson, 2000, pp. 197-223).



The pairing of John and Peter in this story also reinforces the idea that sight and touch are emblematic sensorial aspects of the *vita mixta*. John, the visionary apostle who saw and recorded his vision of the Apocalypse, is frequently cited in Christian exegesis as a model of the *vita contemplativa*. Sight—including visionary, prophetic capabilities that take the idea of sight beyond the physical—is therefore his purview, and accordingly, Cimabue presents the figure of John to the left of the composition, standing still with his gaze fixed firmly on the eyes of the lame man. Peter, as the Christ-appointed founder of the early Church, was instead emblem of the *vita activa*, associated with the work of one's hands via touch. Cimabue's mural thus shows Peter, in contrast to John, in motion, striding forward in the act of taking the disabled man by the hand, lifting him up as he is physically healed. The idea of physical healing as a prelude to spiritual healing reinforces the larger theme of embodied spirituality. The apostles must address the bodily needs of the sick before offering salvation through Christ. Parallel to the duality of the Franciscan *vita mixta* is thus the idea that physical and spiritual healing go together; this idea is also key to interpreting Cimabue's Apocalypse scenes on the other side of the transept.

4. THE APOCALYPSE, FRANCIS, AND EMBODIED SPIRITUALITY

The Franciscans were among several groups interested in the Apocalypse as they asserted their identity and place in church history.¹⁷ In Bonaventure's *Legenda maior*, the prologue describes Francis as having an 'angelic ministry', and more specifically, aligns him with the Apocalyptic Angel of the Sixth Seal:

And so not without reason is he considered to be symbolized by the image of the Angel who ascends from the sunrise bearing the seal of the living God, in the true prophecy of that other friend of the Bridegroom, John the Apostle and Evangelist, for 'when the sixth seal was opened', John says in the Apocalypse, 'I saw another Angel ascending from the rising of the sun, having the seal of the living God'.¹⁸

¹⁷ On the mendicants and the Apocalypse, see Burr (1989, pp. 51-62) for a discussion of Franciscan exegesis and Francis as an apocalyptic figure.

¹⁸ Bonaventure, *LM*, Prologue 1 (in Armstrong et al., 1999-2001, 2, pp. 526-527).



Francis' stigmata were thus interpreted as Christ's impressing of a seal upon the body of Francis, analogous to the seals on the book of the Apocalypse.¹⁹ The association of Francis with the Angel of the Sixth Seal must have prompted Cimabue's choice to depict that subject along with the Four Winds on the south transept wall at Assisi (Figure 4). Cimabue's unique composition invokes somatic experiences of the divine akin to Francis' stigmatization.



Figure 4. Cimabue, *Opening of the Sixth Seal*, Upper Basilica of St Francis, Assisi
Photo: Author.

¹⁹ Bonaventure, *LM*, Prologue 2 (in Armstrong et al., 1999-2001, 2, p. 527).

In this scene, four winged figures stand in front of a crenelated wall that encloses a city set within a rocky landscape. The upper portion of the mural, unfortunately highly damaged, features an angel in flight above the sun-lit sky. As John's text relates:

After these things, I saw four angels standing on the four corners of the earth, holding the four winds of the earth, that they should not blow upon the earth, nor upon the sea, nor on any tree. And I saw another angel ascending from the rising of the sun, having the sign of the living God; and he cried with a loud voice to the four angels, to whom it was given to hurt the earth and the sea, Saying: Hurt not the earth, nor the sea, nor the trees, till we sign the servants of our God in their foreheads.²⁰

Cimabue's interpretation of this text is entirely novel. In medieval Apocalypse illustrations, artists usually depicted the winds as masks blowing air, held by angels.²¹ In Cimabue's version, instead, four winged figures stand in front of the walled city. Their hair tossed by the wind, these figures hold large, cornucopia-shaped horns. The stripes and curves of the horns seem to mimic the bodies of the figures themselves, with their exposed sternums and wiry musculature. Both instrument and human communicate the power of wind as a potentially destructive force. Perhaps with classical personifications of the winds or the seasons in mind, Cimabue thus fuses the form of a wind with that of an angel.²² They do not blow their horns, because they are obeying the angel of the living god who has instructed them to 'hurt not' the landscape around them. Thus, while the sense of touch is indicated by the windswept hair and drapery of these figures, the sense of sounds is quelled; the winds keep silent. The intact city, sea filled with fish, and rocky landscape behind these figures assure the viewer that the destructive power of the winds is controlled.

This mission may also be referred to by the position of the flying angel in this scene, the angel of the Sixth Seal, a figure with whom, as we have seen, the

²⁰ *Doauy-Reims Bible*, Apocalypse 7: 1-3.

²¹ One example is in an Apocalypse manuscript from the thirteenth century now in the Pierpont Morgan Library, Morgan MS M.524, fol. 3v.

²² On the classical antecedents of these figures see Iole Carlettini, "Gli angeli dei venti nell'apocalisse di Assisi Cimabue e l'antico tra Pisa e Roma (Carlettini, 1992, pp. 255-267).



Franciscans associated Francis himself. As Bellosi noted, the angel occupies the central position on the wall, directly opposite the scene of the martyrdom of Peter on the other side of the transept. This inter-visual connection links Francis and Peter, an allusion to Francis as head of the new apostolate.²³ Both sides of the transept celebrate the friars' *vita mixta* through the prominence of the apostolic models of John the Evangelist, Peter, and Paul. The Apostles cycle offered the friars a means of journeying alongside these figures as they carried out their evangelical mission. Attention to the senses in acts of healing and conversion would encourage the friars to imagine witnessing and experiencing these episodes of sacred history firsthand. In the Apocalypse cycle, the friars' senses were activated again via Cimabue's vivid presentation of John's eschatological vision.

As in the scene of Peter Healing the Disabled discussed above, Francis is here implicated as an apostolic agent of healing and deliverance for all.

5. CONCLUSIONS: LEAD WHITE AND THE SENSES AT ASSISI

How fitting, then, that Cimabue should use lead white as a primary pigment in this and the other Apocalypse scenes. Many Christians living in Francis' time believed that the prophecies of Joachim, even though controversial, signaled that the events of the Apocalypse, including the coming of the Antichrist, were happening imminently. In response to the anxieties around this idea, Franciscan natural philosopher Roger Bacon was among the most vocal advocates of using alchemy to create tools to be used against Antichrist. Among other things, he developed a formula for an ingestible elixir that would prolong human life, in the hopes that more souls could be saved before the impending end times.²⁴

Bacon asserted that rays emanating from celestial bodies were essential to the activation of this elixir; divine light and energy combined with alchemical knowledge enabled physical and spiritual metamorphosis. With the elixir, Bacon proposed to bring the human body closer to that of the perfect resurrected

²³ Bellosi (1998, p. 196).

²⁴ See Matus (2013, pp. 323-340).



body, the body of Adam before the fall. The elixir was to transform a human's appearance, as well as his or her moral character and ability to understand God's wisdom.²⁵ Inward perfection manifested itself as outward luminosity in this paradisiacal body. Franciscan theological writings of the period show a kindred interest in this notion of physical purification. Bonaventure, for example, explains in his commentary on Peter Lombard's *Sentences* that the purified, resurrected body has the same properties as divine light or *lux*: brightness, agility, incorruptibility, and penetrability.²⁶ Both Thomas of Celano and later Bonaventure, in describing the aftermath of Francis' death, note how the saint's body radiated this kind of heavenly splendor. Sainly bodies, even as they remained on earth, were believed to be the same perfected bodies as the resurrected bodies in heaven.²⁷ Significantly, this purified body was believed to increase in whiteness. Both Celano and Bonaventure describe the luminous paleness of Francis' saintly body.²⁸ Bonaventure marvels at how 'The rest of [Francis'] skin, which before was inclined to be dark both naturally and from his illness, now shone with a dazzling whiteness, prefiguring the beauty of that glorious second stole'.²⁹ The 'second stole' Bonaventure refers to here is the biblical notion of the garment of salvation that will be given to those in heaven.³⁰

The metaphorical connections between skin and garment, as well as notions of renewal and cleanliness as signs of salvation, are also at play here. Bonaventure hints that the heavenly ascent of Francis' soul mystically transformed the saint's skin from dark to light, heightening the contrast between his white skin and the black nails of the stigmata, 'The nails appeared black against his shining skin, and the wound in his side was red like a rose in springtime so that it is no wonder the onlookers were amazed and overjoyed at the sight of such

²⁵ Matus (2013, p. 331) on resurrected bodies.

²⁶ Matus (2013, pp. 333-334).

²⁷ Bynum (1999, p. 200).

²⁸ Thomas of Celano's account highlights the brightness of Francis' skin and its contrast with the blackness of his wounds, comparing the wounds to black stones in a white pavement (Thomas of Celano, 2000, chapters 112-113, pp. 112-115).

²⁹ Bonaventure, *LM* 15:2 in Armstrong, et. al. (1999-2001, 2, p. 646).

³⁰ This garment of salvation is mentioned in Isaiah 61:10.



varied and miraculous beauty'.³¹ Francis' sanctity engendered the purifying, transformative process intended in the alchemical production of Bacon's elixir.

Such a radical, visible purification is echoed in the way artists' treatises and recipe books discuss the alchemical process for producing lead white.³² Cennino Cennini, for example, is careful to note that lead white is formed 'by alchemy' in a process that turned gray lead plates into a shining white powder. If the friars at Assisi were indeed interested in the mysteries of mutated matter, as evidenced by their emphasis on the Eucharist and Francis' stigmata, they may also have valued lead white's symbolic potential as a transformed substance. Treatises on natural philosophy and on art making from the thirteenth and fourteenth centuries underscore the fact that profound physical changes occur in the making of lead white, also known as *biacca*. In multiple sources, the making of lead white is connected specifically to alchemy, defined in the period as the art of transforming matter. Cennino Cennini, for example, is careful to note that lead white is formed 'by alchemy'.³³ Likewise, in his discussion of the nature of lead in his book of minerals, Albertus Magnus cites ancient alchemical knowledge as he details the making of lead white:

And Hermes, who has proved much about the transmutations of metals, in his Alchemy reports that, if plates of lead are suspended over a vessel containing much strong vinegar, so that the vapor of the vinegar is continually in contact with the lead plates, the vapor will condense and destroy the substance of the lead, and change it into a white powder that is called cerusa.³⁴

³¹ Bonaventure, *LM* 15:3 in Armstrong, et. al (1999-2001, 2, p. 646).

³² Although alchemy is traditionally regarded as the science of attempting to turn lead into gold, a goal certainly expressed by Roger Bacon, the field of alchemy had wider aims. As Crisciani put it, alchemy was the "... knowledge of hidden things and the art of transformation towards perfection." See Crisciani (2008, p. 4).

³³ "... bianco e un cholore archimiato di pionbo il quale si chiama biacha. . ." (Cennino Cennini, 2015, p. 85). Cennino also identifies minium, vermilion, orpiment, and verdigris as 'alchemical', but it is important to note that in his description of another yellow, *giallorino*, he mentions that it is produced 'artificially though not by alchemy', so alchemy was a distinct process. See Spike Bucklow (2016, pp. 108-117).

³⁴ Albertus also notes that that lead itself has the power to reduce lust and nocturnal emissions if worn as a belt around the hips, but also warns that it can cause madness, paralysis, and unconsciousness. Albertus Magnus, *Book of Minerals*, pp. 210-211.



Albertus makes it clear that the substance of the lead is destroyed in the alchemical metamorphosis. The resulting material is pure, white; Albertus states that the bits of powder that appear on the surface of the lead plates ‘...grow whiter because they are more thoroughly purified’.³⁵ A kindred sense of potential for dramatic change enabled by alchemy is seen in the alchemical treatise by the Franciscan friar Bonaventura da Iseo (died ca. 1273), who in his *Liber compostelle* writes:

A man expert in this kind of art, called alchimia, knows how to make many things from the beginning, if he wants, like silver and gold, salts, precious stones, dyes and colours like azure, cinnabar, white, verdigris, lacquer, and so on. He knows how to destroy many things, like all the spirits and metals, precious and non-precious stones, wood, marcasite, and so on, converting many of them to dust, clear water, oil, glass.³⁶

Bonaventura mentions the making of white pigment here in his definition of the art of alchemy, noting also the powers of creation, as well as destruction and conversion, that alchemy can enable. His description hints that alchemical work is akin to God’s own creative powers, and in this way Bonaventura’s statement reflects current thirteenth century reconciliations of alchemy within a Christian worldview. At this moment in Europe, the study of alchemy was shaped by the Augustinian idea that all living things, including matter, are created by God, but most remain ‘seeds’, and need to have their transformative potential unlocked.³⁷ Alchemy was believed to have the power to enable this potential.

Bonaventura’s comments also underline the close, longstanding connection between art making and alchemy. It is noteworthy that treatises on art making such as Cennino’s as well as more general writings on natural philosophy like the book of minerals of Albertus Magnus mention lead white’s alchemical production. Scholars now understand that much of the alchemical knowledge to survive into the Middle Ages from antiquity did so via treatises on pigments

³⁵ Albertus Magnus, *The Book of Minerals* (trans. Wyckoff, 1967, p. 211).

³⁶ Quoted in Succuro (2016, p. 213).

³⁷ For attempts to reconcile alchemy and Christianity in the thirteenth century see Matus (2012, pp. 934-945).



and dyes.³⁸ It is in such a context of shared knowledge that Cimabue's technical skills perhaps met the understandings of alchemy held by the friars at Assisi. Although I am the first scholar (to my knowledge) to attempt to connect the Franciscans' interest in alchemy to the patronage of art at Assisi, discussions of alchemy surely occurred in the Sacro Convento in the thirteenth century. Bonaventura of Iseo was only one of several prominent Franciscans of the period to author treatises on alchemy. Brother Elias of Cortona, the second Minister General of the Order who was later deposed and excommunicated, was believed to be the author of alchemical writings.³⁹ As previously mentioned, Roger Bacon was also a prolific student of alchemy, and acknowledged the production of artists' pigments in his definition of 'practical' alchemy. Although he does not mention lead white, he does include minium, a red pigment formed by burning lead white, in a short list of pigments he cites in defining the various applications of alchemy.⁴⁰ At the request of Pope Clement IV, Roger Bacon sent treatises on alchemy to the papal court.⁴¹ It is thus likely that Bacon's writings on alchemy, like his works on optics, were known to the friars responsible for Cimabue's commission at the basilica at Assisi, a papal chapel.

It seems appropriate, then, for Cimabue to have applied heavy layers of alchemically created lead white to his Apocalypse murals at Assisi. In their original condition, these dramatic narratives were further enunciated by Cimabue's bright strokes of lead white paint. The mutability of the matter of lead, its transformation from a dark substance to one that shone brightly, is a fitting metaphor for the power of Christ, mediated through Francis, to bring souls to salvation over death and darkness. In the Assisi transepts, the bold presentation of the stories of the Apostles underscored the importance of the bodily senses

³⁸ Wallert (1990, pp. 154-161).

³⁹ Several texts have been attributed to Elias, but scholarly consensus has not been reached as to their authorship. For these see Vinciguerra (2009, pp. 57-67).

⁴⁰ "Sed alia est scientia . . . de azurio, et minio, et caeteris colouribus . . . Est autem alkimia operative et practica, quae docet facere metalla nobilia, et coloures . . ." (Roger Bacon, *Opus tertium*, in Brewer, 1859, pp. 39-40).

⁴¹ Bacon's best known alchemical treatise is the *Epistola de Secretis Operibus Artis et Naturae et de Nullitate Magiae*. Alchemy is also included in his *Opus tertium* and other tracts. See. Newman (1997, pp. 317-336).



to the healing acts of the *vita mixta*. For the Franciscans, the practice of contemplation was always privileged and seen as a necessary prerequisite to good works of the *vita activa*. This insistence on contemplation can be seen in the way the Franciscan emphasized hermetic retreat.⁴² Francis' biographers detail his constant need to remove himself to the wilderness for prayer, including his ascent to Mount LaVerna that culminated in his stigmatization.⁴³ Therefore, role models for the friars, such as the Apostles and Francis were, first and foremost, contemplatives. It within this emphasis on contemplation that a viewer's sensory engagement becomes crucial, and the brightness of lead white would have contributed to that experience. The friars would have been encouraged to contemplate the scenes they viewed at Assisi actively, using their bodily senses to help them ascend to higher levels of spiritual healing and transformation.

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⁴² See the discussion in Cooper and Robson (2013, pp. 190-191).

⁴³ Bonaventure, *LM* 13:1, in Armstrong et. al (1999-2001, 2, p. 630).



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