

MARCHETTO OF PADUA AND  
GIOTTO'S SCROVEGNI CHAPEL FRESCOES

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Marchetto of Padua's *Pomerium* (1318/1319), a widely read treatise that laid the groundwork for music-notational practice in Italy, contains a passage suggesting the author's knowledge of the latest developments in trecento painting.<sup>1</sup> He writes:

Art imitates nature as far as it can (as Aristotle said in Book II of the *Physics*). I shall prove this with an example: he who paints a lily or a horse strives as far as he can to paint it so as to resemble a horse or a lily in nature.<sup>2</sup>

Marchetto's use of the phrase "in nature" epitomizes the "new," naturalistic painting style that emerged during the first decades of the fourteenth century. The Florentine Giotto, who decorated the Scrovegni Chapel in Padua, was the innovator of this style, and his fame in this regard was widely acknowledged by his contemporaries.<sup>3</sup>

In explaining the Italian notational system, Marchetto compares the artist's ability to capture nature in painting to the use of specific notational devices, such as the addition of "tails to the notes." He writes:

Since, therefore, the written notes pertain to the art of music, although music is in itself an accepted science, it was right that the tails be added to the notes, which were written because of the need to hand down the music, should be added to them in accordance with the perfections found in man himself, who instituted this art; for in man is found,

in origin, the right and the left [. . .] Therefore the tails added to the written notes are rightly added to them on the right and the left, as with respect to man.<sup>4</sup>

Marchetto argues that the written notes should capture the intentions of the composer as closely as possible "because of the need to hand down the music" and for that reason, tails be added to the notes. For Marchetto, the expression of musical time "via naturae" refers to semibreves without stems, while "via artis" designates those with stems since the addition of a stem on a semibreve changes its natural value within the tempus.<sup>5</sup> As with painting, therefore, musical notation must faithfully reproduce on paper the sounds of the music that are "in nature."

The purpose of this study is to explore the complex relationship between the composition and musical theories of Marchetto and the representation of music making in Giotto's Scrovegni Chapel frescoes. For example, Marchetto's motet *Ave regina celorum/Mater innocencie* has compositional links—in both text and music—to Giotto's *Wedding Cortege* and *Annunciation*.<sup>6</sup> Furthermore, Giotto repainted musical instruments in these paintings. The artist changed louder instruments to softer ones by shortening their lengths and generally toning down the "musical" sound in his pictures. I posit that these alterations may have been made at Marchetto's suggestion.

The connection between Giotto and Marchetto is revealed through a consideration of Marchetto's motet *Ave regina celorum*. Based on the presence of acrostics found in the texts, Alberto Gallo argues that the mo-

tet was written for the opening ceremonies of the Scrovegni Chapel on March 25, 1305.<sup>7</sup> The *triplum* contains Gabriel's salutation to the Virgin Mary (Luke 1:28) while the *duplum* contains Marchetto's name:

*Triplum*

AVE regina celorum,  
pia virgo tenella.  
MARIA candens flos florum,  
Christi(que) clausa cella  
GRACIA que peccatorum  
dira abstulit bella.  
PLENA odore unguentorum,  
stirpis David puella.  
DOMINUS, rex angelorum  
Te gignit, lucens stella.  
TECUM manens ut nostrorum  
tolleret seva tela.  
BENEDICTA mater morum,  
nostre mortis medela.  
TU signatus fons ortorum,  
manna (das dulcinella,  
IN te lucet) lux cunctorum  
quo promo de te mella.  
MULIERIBUS tu chorum  
regis dulci viella,  
ET vincula delictorum  
frangis nobis rebella.  
BENEDICTUS (futorum)  
ob nos potatus fella.  
FRUCTUS dulcis quo iustorum  
clare sonat cimella.  
VENTRIS sibi parat thorum  
nec in te corruptella.  
TUI zelo febris horum  
languescat animella.

*Duplum*

(M)ater innocencie,  
Aula venustatis,  
Rosa pudicie,  
Cella deitatis.  
Vera lux mundicie,  
Manna probatis.  
Porta obediencie,  
Arca pietatis.  
Datrix indulgencie,  
Virga puritatis.  
Arbor fructus gracie,  
Nostre pravitatis.  
Virtus tue clementie  
Me solvat a peccatis.

[Hail, Queen of the Heavens, tender and pious Virgin Mary, white flower among flowers, sealed cell of Christ; grace that relieved the sinners of cruel struggles. Filled with the perfume of sweet smells, daughter of the line of David. The Lord, King of Angels, has made you a shining star and remains within you in order to remove the cruel arrows from us. Blessed Mother of virtue, medicine for our death. Chosen fountain of the garden, you sweetly have the manna. In you the light of everything is lit; from you I take the honey. For the women you lead the chorus with a suave viella [vielle] and for us you breath the rebellious chains of sins. Blessed is he who drinks the bile for us, sweet fruit for whom it plays with clarity, the cimella [chalu-meau] of the just. In you he prepares the nuptial bed, and there is no immorality. The little soul of the creator of these objects should languish for the love of you.]

[Mother of innocence, hall of the beauty. Rose of chastity, cell of divinity. True light of charity, manna of honesty. Door of obedience, tomb of mercy. Bestower of indulgence, rod of chastity. Fruit tree of grace [against] our wickedness. The strength of your mercifulness shall dissolve me from sins.]

Both the *triplum* and *duplum* texts are lauds of the Virgin Mary. The *triplum* is an amalgamation of two chant antiphons associated with the *Annunciation*—the *Ave regina gratia plena* and *Benedicta tu in mulieribus*—and speaks directly of the nuptial bed and the *Annunciation*.<sup>8</sup>

Marked similarities arise from a comparison of the structure of Marchetto's motet *Ave regina celorum* and the numerical framework of Giotto's frescoes.<sup>9</sup> Marchetto's motet alludes to the thirty-nine scenes in Giotto's narrative (Fig. 1) that concern the life of the Virgin and Christ. The motet consists of 39 *longa* measures,<sup>10</sup> and the tenor of the piece, which seems to be newly composed, curiously juxtaposes the num-

bers 6 and 5. The *talea* (or length of rhythmic unit that repeats throughout the baseline) of the tenor measures 6 and consists of 5 pitches.<sup>11</sup> In the fascimile, there are 5 pitches—3 in ligature and 2 *longa*—between rests (Fig. 2). This reflects the same grouping in the chapel, for Giotto has painted 3 groups of 6 on the left-hand wall. In the top row of the opposite wall are 6 more scenes beneath which are 2 groups of 5 images. This curious juxtaposition of numbers is necessitated by the windows on the right-hand side. The motet consists of 6 × 6 measures of the *talea* (the *color*—or length of the repeating melodic pattern—consists of 18 measures), arriving at the number 36. Marchetto concludes the piece with 3 mea-

EAST WALL

13.  
Angel Gabriel is Entrusted  
with Mission to the Virgin

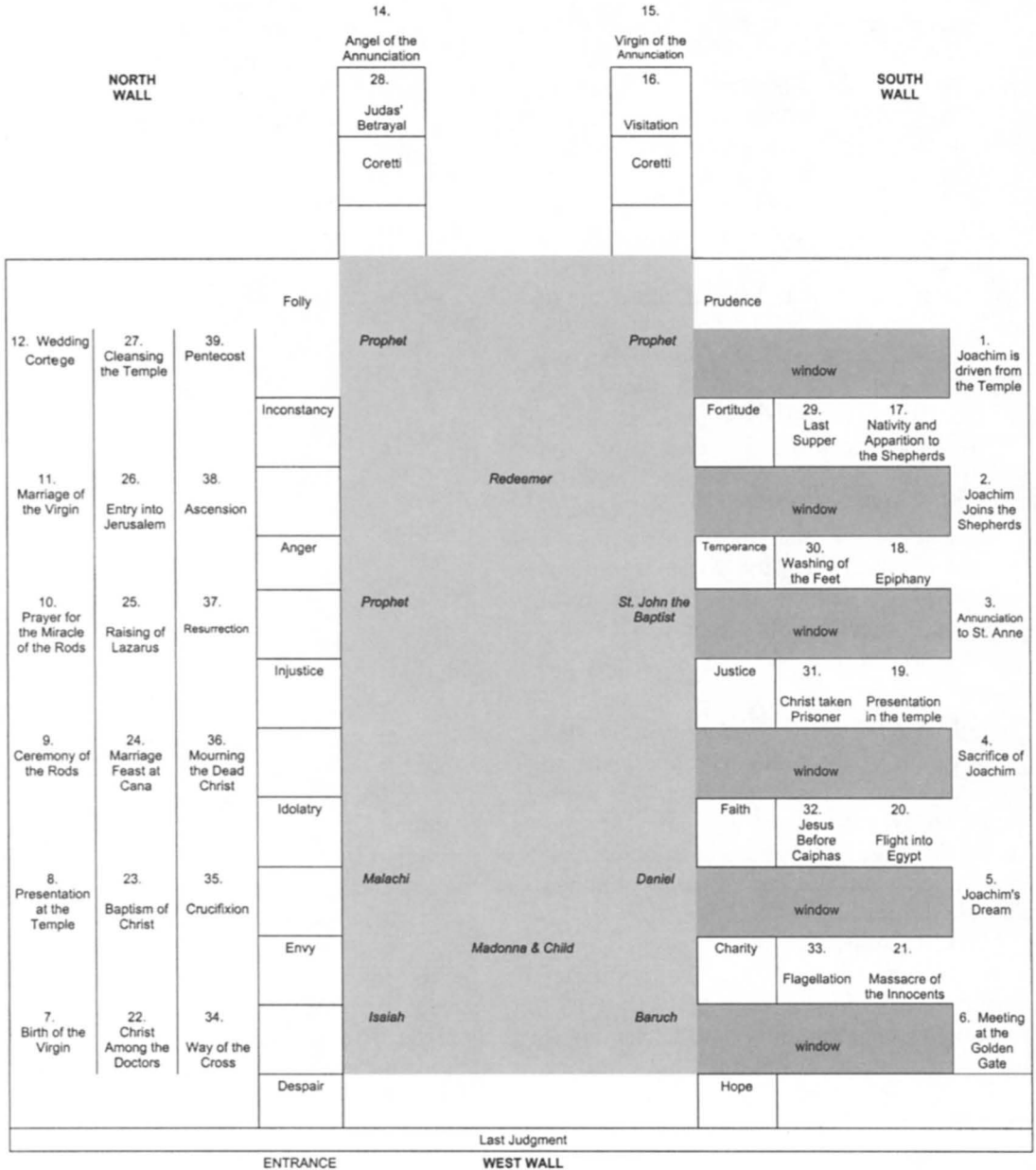
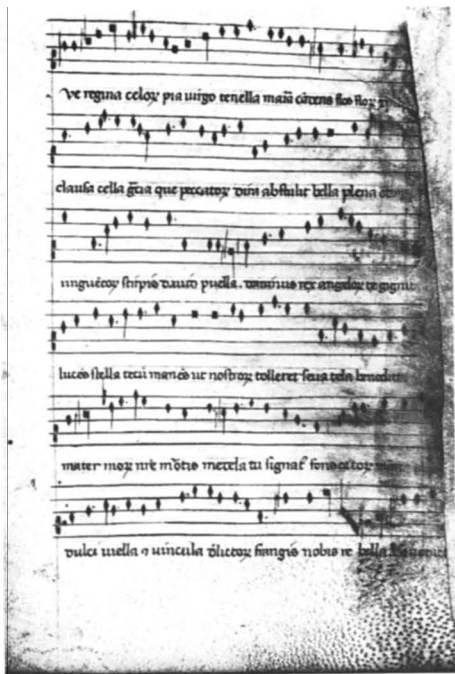
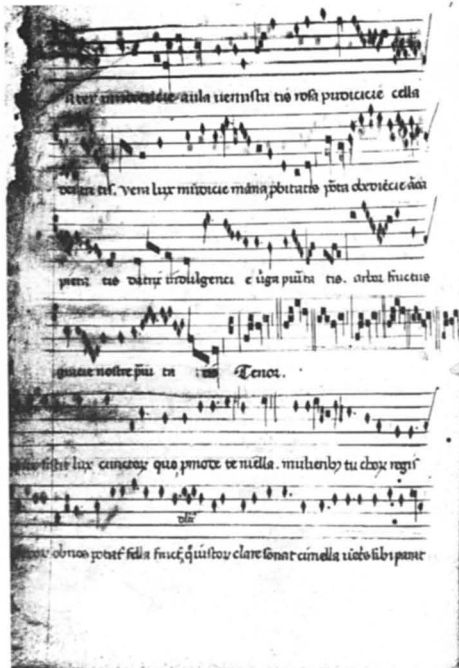


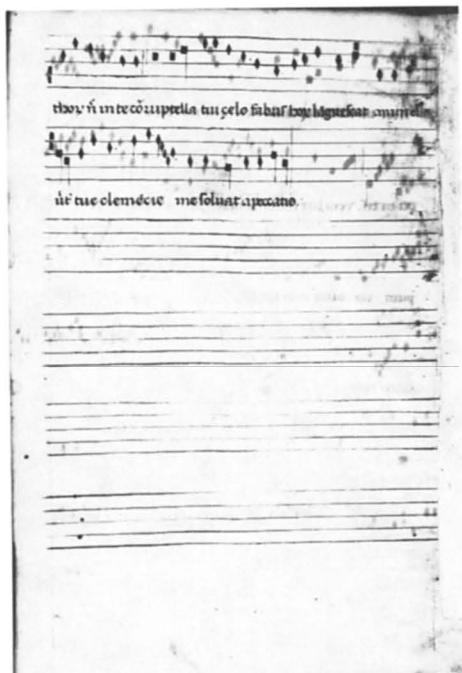
Fig. 1 Diagram of Giotto's frescoes in the Scrovegni Chapel. Courtesy of Lynn Catterson



a. Folio 61v



b. Folio 62r



c. Folio 62v

Fig. 2 Marchetto of Padua, *Ave regina celorum/Mater innocencie*.  
 Bodleian Library, MS Canon. Class. Lat. 112, fols. 61v, 62r, and 62v.  
 (Photos: Bodleian Library, Oxford)

tures, whose tenor contains a kind of cadence and whose upper voices slow down in time adopting the slower movement of the tenor. Perhaps the three extra scenes allude numerically to the unique tripartite *Annunciation* on the triumphal arch, consisting of the episodes *God the Father Dispatching Gabriel* and the *Annunciation* proper (*The Angel Gabriel* and *The Virgin*).

The text of Marchetto's *Ave regina celorum* also contains several striking references to music that recall Giotto's frescoes, most notably the *Wedding Cortege of the Virgin* (Fig. 3), which is on the left top tier of the wall just to the left of the *Annunciation*. The scene is multidimensional in time. In one movement, Mary and her attending ladies come upon a group of musicians. The second movement captures the musicians playing their instruments before the women arrive.<sup>12</sup> One man plays a stringed instrument while others play wind instruments. The musicians wear shorter draperies than the other participants and have wreaths on their heads. The upper part of the picture has been badly damaged, and what remains is a balcony with a large leafy branch, a sign of the Virgin's forthcoming pregnancy.

In lines 19–20 of the *triplum*, we read: “MULIERIBUS tu chorum regis dulci viella,” the same as the instrument in Giotto's painting. Marchetto says that the *viella* leads a chorus of virgins, which echoes Mary leading a chorus of women. Mary does not actually do the playing (she is never portrayed playing musical instruments, though music accompanies her on many occasions), but she can appear as a conduit for the harmony of the music played by the instrumentalists. Through Mary, the women hear the music of the *viella* and are ruled by its strains. The interpre-

tation is made clear by Mary's placement near the center of the scene as an intermediary between the players and the women. She guides them by the metaphor of her implied music. This may account for her placid demeanor that has been traditionally viewed as extraordinarily musical by later commentators.<sup>13</sup>

Music was allied with virginity in the Middle Ages.<sup>14</sup> Describing the Lamb on Mount Sion, Revelation 14:2–4 provides the Christian source of this belief:

And I heard a voice from heaven like the sound of many waters and like the sound of loud thunder; the voice I heard was like the sound of harpers playing on their harps, and they sing a new song before the throne and before the four living creatures and before the elders. No one could learn that song except the hundred and forty-thousand who had been redeemed from the earth. It is these who have not defiled themselves with women, for they are chaste; it is these who follow the Lamb wherever he goes.

Related to Giotto's frescoes is the chaste quality of the followers who hear the song of God. It is reminiscent of the group of women following Mary in the *Wedding Cortege*. Thomas Connolly notes that the virgins sing a kind of “inner” song, one that is not heard. Quoting the *Passio* of the Roman virgin Saint Cecilia, we find that she “sang in her heart to God alone.”<sup>15</sup> The “new song” will help to clarify why Mary does not play the *viella* in the picture, but leads the choir of virgins with the *viella* in Marchetto's poem.

The notion of the “new song” versus the “old song” originates in Psalms. Numerous lines exhort believers to sing a new song.



Fig. 3 Giotto, *Wedding Cortège of the Virgin*. Scrovegni Chapel, Padua. (Photo: Alinari/Art Resource, New York)

For example, in Psalm 32 (i.e., the Hebrew/Reformed Psalm 33), we read, “Praise the Lord on the cithara, sing to him with the psaltery of ten strings! Sing to him a new song, sing to him well” (lines 2–3). Christian commentators on the Psalms, notably Augustine, have devised intricate allegorical interpretations into Christian doctrine. Therefore, we read Augustine’s explanation of Psalm 33 as “Divest yourself of what is old; you have learnt a new song. A new man, a new testament, a new song.”<sup>16</sup> The “new song” becomes linked with celestial

melody, and the old with melodies of the flesh.<sup>17</sup> In addition, Psalm illuminators included images of the difference between the old and new song in their texts. Raucous musicians with unsavory demeanors and tumbling dancing figures were shown with the old, and calm, serious, pious with the new.<sup>18</sup> In Giotto’s fresco, then, we are reminded of the women’s chastity and their connection to the music in heaven. Their calm bearing represents the “new song.” However, although Mary is often depicted as the leader of a virginal choir, the mention

of the *viella* is unique and further confirms the relationship between Marchetto's words and Giotto's picture.

A connection also exists between the *viella* player and Christ. The stringed instrument has been linked to the lyre, the principal instrument of Apollo on Parnassus.<sup>19</sup> Apollo was aligned with Christ because he "could well be employed [by Christians] as a personification of justice, both as god of music, which like justice, reduces strife and discord to harmony, and as the god of the sun," as Christ was the figure of light and healing.<sup>20</sup> The notion of justice and music continues in the musical reference in lines 25–26, "FRUCTUS dulcis quo iustorum clare sonat cimella," where the playing of the *cimella* instrument represents the "just." Justice is a central theme in Giotto's frescoes since its patron, Enrico Scrovegni, commissioned the chapel in hopes of achieving salvation. In the *Last Judgment*, on the entrance wall, trumpeting angels border the seated Christ.<sup>21</sup> Furthermore, in the dado, Giotto placed the seated Virtue of Justice above a marblelike predella scene of three women: one plays tambourine, one sings, while a third dances.

Marchetto's lines 25–26 contain a second allusion to Giotto's *Wedding Cortege*—namely, to the *cimella* (Latin), or *ciaramella* (Italian), or *chalumeau* (English).<sup>22</sup> The instruments in the Giotto are small single-reed ones though certainly not bagpipes. In fact, it is difficult to identify these instruments exactly because Giotto changed his mind about the types of instruments he wished to represent. Indeed, a photograph taken after a restoration in the 1960s shows that what appear to be two short, recorder-like instruments were originally long-barreled trumpets. These are the same kind of instruments blown by the angels surround-

ing God in the *Annunciation*, to which we will return.<sup>23</sup>

The position of the players' heads reveals Giotto's *pentimento*. Their heads are tilted upward, indicating that Giotto first intended them to play trumpets since the positioning of long instruments in this scene requires that the head be tilted up just past horizontal. If Giotto had originally intended to paint recorder players or shawm players, he probably would have tilted their heads downward. This is true of the famous recorder player in a fresco by Simone Martini in the St. Martin Chapel at Assisi. At some point after the *Wedding* had dried, Giotto changed to softer instruments *in secco*.

Giotto made numerous changes in the Scrovegni Chapel frescoes,<sup>24</sup> both by applying new plaster (*intonaco*) or *fresco secco*. At least one change in the *Wedding Cortege* has been noted by Tintori and Meiss in the clothing of the figure in front of the Madonna.<sup>25</sup> They note that Giotto wished to maintain a sense of movement by inclining the lower hem of the garments upward to the right. He achieved this motion by painting in the background color below them, and then added a flowing red line from the bottom left up to the knee. In this way, he changed a heavy cape into a light mantle. The same change to a "lighter," airier, and more appropriate mood is achieved by changing the representation of long trumpets to higher wind instruments. Giotto may have wanted the instruments to correspond to Mary's serene demeanor. Trumpets are traditionally loud outdoor instruments played in processions, while the fiddle and short reed instruments are more intimate.

Giotto's initial decision to represent trumpets may have been influenced by the fact that he witnessed Paduan festivities



accompanied by loud instruments. According to Gennaro Gennari, a decree was passed concerning the “*accompagnamento delle spose novelle*.”<sup>26</sup> He cites the Paduan tradition in which parents and friends accompany the bride to the house of her husband with great festivity of “*suoni e canti*.” The citizenry believed that these processions created commotion and confusion, and were generally public nuisances. A law passed in 1277 ordained that no more than twenty people per side of the family were allowed to march in procession. Gennari writes, “Wise decree, because these populous gatherings could be suspected to be machinations against the state.”<sup>27</sup>

It is possible that Giotto saw the Paduan ceremony dedicated to the Annunciation to the Virgin Mary.<sup>28</sup> The *Annunciation* fresco has a compositional structure that recalls the placement of the Virgin and Gabriel in compartments from which they spoke the lines of the dramatic office. Trumpets were traditionally used in the Paduan processions that accompanied the characters:

Mary and the angel were placed upon two platforms and carried to the Arena, preceded by trumpet players of the city and Paduan clerics. They were followed by the Podesta and all the citizens. The Angel was to salute Mary in the courtyard of the Arena. This was to be done without payment by the city or the clerics. The salaried trumpet players were to play their trumpets and playing accompany the angel and Mary to the palace of the Arena without additional funds.<sup>29</sup>

Giotto may also have chosen trumpets as a recurring motive. The long lines of the trumpets echo the lines in architecture that permeate the entire fresco cycle. They also

appear above the *Annunciation* in the prologue *God the Father Dispatching Gabriel* (where, interestingly, several also seem truncated) and in the *Last Judgment*. However, in choosing to truncate the trumpets not only in the *Wedding Cortege*, but also in the overture to the *Annunciation*, Giotto has softened the tone of the scene to fit the demeanor of the *Virgin* better.

The third musician in the *Wedding* has not raised his instrument to his lips, but seems poised to play while his companions are playing. This may account for the singular *ciaramella* in the text. Marchetto does not mention trumpets at all, but rather the “new” instruments painted by Giotto. They seem to be an invention used specifically to fit the existing outlines created by the shortened trumpets. This has interesting implications. It is possible that Marchetto, who enjoyed the distinguished reputation of philosopher and greatest musician in Padua, may have inspected the frescoes or been asked about the suitability of the trumpets. Tintori and Meiss confirm that Giotto painted in the traditional manner from the top down, so that the *Wedding Cortege* would have certainly been complete during the earliest phase of painting, early enough for Marchetto to suggest changes and write his motet text.<sup>30</sup>

Marchetto’s motivation for reflecting the fresco in this motet is understood in the context of his concern for the reproduction of music as if captured from reality. In this case, Marchetto not only reproduces on paper the notes he wishes his singers to produce, but also, in a visual/musical play, Giotto’s complex matrix of frescoes. Marchetto renders Giotto’s frescoes with precision in the numerology of his notation and the subtlety of his text, with its acrostics and descriptions of the images. Such inter-



a. Left

Fig. 4 Giotto, *Annunciation*. Scrovegni Chapel, Padua. (Photo: Alinari/Art Resource, New York)



b. Right

disciplinary decorations were not unique at this time in Padua. Giotto's paintings inspired a miniaturist to decorate an antiphoner for the cathedral dating from c. 1306.<sup>31</sup> Giotto is also credited with having decorated the walls of the Sala della Ragione, the program of which has been ascribed to Peter of Abano, the philosopher, music theorist, and astronomer.<sup>32</sup>

The final point to be considered is the representation of implied music in the *Annunciation* (Fig. 4). The scene is divided into two parts: the upper, which represents *Gabriel's Mission*, and the lower, which takes place on earth. In Giotto's sequence of frescoes, the *Annunciation* follows the *Wedding Cortege*. Gabriel kneels on the left, while Mary hears his words on the right. God is surrounded by legions of angels, some of whom play instruments. In the left background, two angels play a lute and a tambourine, mirrored by two angels who play psaltery and cymbals in the right foreground. Others appear to be singing. In the right foreground, an angel plays the "trumpet," which, like the *Wedding Cortege*, seems to be cut off by the frame, while a second plays what Howard Brown describes as a double recorder.<sup>33</sup> The choice of instruments is typical of medieval angel choirs.<sup>34</sup> Marchetto acknowledges the image of the angel choir in the first part of his *Lucidarium* when he quotes Remigius: "The vastness of music encompasses all that lives and all that does not live; thus the choir of all the angels, archangels, and saints sings without end, chanting 'Sanctus, Sanctus' before the eyes of God."<sup>35</sup>

Marchetto was familiar with the classification of sound in three general groups, all of which are represented in Giotto's picture. He describes them in Book 1, Chapters 7–13, of his *Lucidarium* as three "species of

music" (p. 89).<sup>36</sup> The first is designated as "harmonic" music, which is produced by the voice of human beings or animals—i.e., singing. This is created by "sound of air set in vibration by the breath" (p. 91). The second is "organic" music produced by the breath of humans as in "trumpets." Then he notes the instruments "cimellis, and pipes, organs and the like" (p. 97). He refers to the same instrument (*cimella*) that Brown describes as a "single-reed" instrument. The third and final category is "rhythmic" music, which Marchetto contends consists of all sound that is not voice as in the "monochord, the psaltery, the bell and similar instruments" (p. 101). This tripartite distinction in musical sound is found in Augustine's *De ordine* 2.39.

Each of these categories of musical sound types is represented in Giotto's fresco. Furthermore, the representation of the *Annunciation* in two parts—unprecedented in the history of art—accentuates the musical quality or motion of the scene. In the midst of the heavenly music, God sends Gabriel to announce the birth of Christ to Mary.<sup>37</sup> There is implied musical transmission in this scene that corresponds to the musical drama of the Annunciation practiced in Padua at this time. In celebration, clerics, dressed as Mary, Anne, Joseph, and Joachim and carrying silver books, walked in a cortege from the sacristy around the cathedral. A small boy chorister, dressed to represent Gabriel and sitting on a chair, was carried from the baptistery and taken into the church; the clerics stopped in the middle of the church to represent a choir. The subdeacon paused after the readings, and the words "Et egressus angelus ad eam dixit" were spoken. At this point, Gabriel came forward, kneeled, holding up two fingers of his right hand, and began the antiphon *Ave*

*Maria gratia plena*. These are the words of Marchetto's acrostic, and perhaps the motet was sung at this point, to replace the singing of the antiphon. The connection to the Giotto is further noted because in his painting Gabriel is kneeling with two fingers raised. While receiving the spirit (symbolized by a dove), Mary arises and sings the antiphon *Ecce ancilla*. Marchetto was familiar with this antiphon since he used it in the *Lucidarium*.<sup>38</sup> Thus, heavenly music is transmitted to earth in the figure of Mary, who, in the earlier scene, guides the chorus of believers accompanied by the sound of the *viella*.

The movement in Giotto's fresco from heavenly to earthly music reflects the interest in the representation of earthly phenomena as experienced in nature. A similar progression appears in Marchetto's two theoretical treatises. The *Lucidarium* begins with several chapters outlining the history of music and its meaning, while the *Pomerium* concerns music as a strictly physical property.<sup>39</sup> The *Pomerium* contains no allusions to past writers about music—Boethius, Cassiodorus, or Augustine—as in the first treatise. Rather, when describing the properties of intervals, Marchetto chooses to quote the scientific Aristotle and his treatise *The Physics*. Another important claim to a return to nature is Marchetto's choice

of definition for the word *music*. In Book 1, Chapter 6, he notes that “music derives from *moys*, which means ‘water,’ since music was discovered by the waters, as Remigius reports; for just as water cannot be touched without its being moved, so can there be no music without it being heard” (p. 87).<sup>40</sup> The same words recur in Peter of Abano's *Expositio Problematum Aristotelis* of c. 1310.<sup>41</sup> Peter was the leading proponent of the Aristotelian natural school, stressing the scientific appreciation of objects based on observation.<sup>42</sup>

The notational practices of Marchetto and the painting of Giotto in the Scrovegni Chapel show a strong affinity for the representation of nature. Giotto captures the details of flora, fauna, facial expressions, and musical instruments. Marchetto captures the spirit of the Annunciation in the colorful language of his motet text and the symbolic notation. Together they epitomize the prevailing intellectual and artistic spirit in the city of Padua and its dedication to a scientific understanding of natural objects. Both represent the pinnacle of medieval thought: Giotto as the master of expression and form, and Marchetto the last breaths of linearly driven music just prior to the adoption of a more harmonic, texturally driven language.

## NOTES

1. An expanded version of this paper appears in the journal *Early Music* 27, no. 1 (February 1999): 7–23.

2. Marchetto of Padua, *Pomerium*, ed. Giuseppe Vecchi (Rome: 1961), pp. 50–52: “Ars imitatur naturam in quantum potest (per Phylosophum, secundo Physicorum). Probatio per exemplum: nam qui depingit lilium vel equum, nititur ipsa depingere in

quantum potest ad similitudinem equi seu lilii naturalis.” The translation is by Karen Eales, in F. Alberto Gallo's *Music of the Middle Ages II* (Cambridge: 1985), pp. 115–116.

3. See Day VI, story 5, of Boccaccio's *Decameron* (1348–1350), trans. G. H. McWilliam (Harmondsworth: 1972), p. 494.

4. Marchetto of Padua, p. 51. “Cum igitur ipsae

notae scriptae ad artem musicae pertineant, licet ipsa musica de se sit accepta scientia, oportuit ergo quod proprietates additae notis ipsis, scriptis propter necessitatem modi tradendi, adderentur eisdem secundum perfectiones repertas ab ipso homine, qui instituit talem artem. In homine autem primo et principaliter invenitur dextrum et sinistrum.”

5. *Ibid.*, ch. 3, I ff. When there are three semi-breves in a measure of imperfect time (roughly equivalent to the modern conception of a two-beat measure), the last breve naturally is assigned the greater value. So we read ♪♪♪. When a stem is added to the first breve (“via artis”) the measure is read ♪♪♪. For more on this, see Willi Apel, *The Notation of Polyphonic Music, 900–1600* (Cambridge: 1953), pp. 368–384.

6. Gallo has hypothesized that the theorist wrote the motet *Ave regina celorum/Mater innocencie* for the opening ceremonies of the chapel in 1305. See “Marchettus de Padua und die ‘franco-venetische’ Musik des frühen Trecento,” *Archiv für Musikwissenschaft* 31 (1974):42–56.

7. *Ibid.*, 42–44.

8. *Ibid.*, 47.

9. Several studies have been written exploring the complex relationship between number symbolism and the structure of motets. The most famous example is Charles Warren’s “Brunelleschi’s Dome and Dufay’s Motet,” *Musical Quarterly* 59 (1973):92–105. See also Wulf Arlt, “Trinita denariis—Musik und Text in einer Mottette des Roman de Fauvel über dem Tenor *Victimae paschali laudes*,” in *Pax et Sapientia: Studies in Text and Music of Liturgical Tropes and Sequences in Memory of Gordon Anderson*, vol. 29 of *Acta Universitatis Stockholmiensis* (Stockholm: 1985), pp. 97–113.

10. Gallo’s count is of thirty-nine; “Marchettus de Padua,” 48.

11. For a discussion of the structure and edition of Marchetto’s motet, see *ibid.*, 48–49 and 54–56.

12. In the *Republic* (ed. Francis Cornford [Oxford: 1941], p. 263), Plato describes the “nuptial number” derived from  $3^3 + 4^3 + 5^3 = 216$ , or the gestation period of a human child. Add  $3 \times 4 \times 5 = 60$  for a nine-month-old child. These numbers are prominent in Giotto’s scene since there are 3 musicians + Mary = 4, and 3 musicians + 2 male onlookers = 5.

13. See Cesare Gnudi, *Giotto* (London: 1959), p. 144.

14. See Thomas Connolly, “The Legend of St. Cecilia, II: Music and the Symbols of Virginity,” *Studi Musicali* 9 (1980):3–44.

15. Connolly, 19, notes that Saint Cecilia, the famous virgin of Rome, was depicted with instruments beginning in the fourteenth century—a statue by the Master of Saint Anastasia (c. 1325), now found in the Museo Castelvecchio of Verona. See his “The Cult and Iconography of S. Cecilia before Raphael,” in *Indagini per un dipinto: La Santa Cecilia di Raffaello* (Bologna: 1983), p. 129.

16. Translation of commentary and text of Psalm 32 in Giulio Cattin, *Medieval Music I*, trans. Steven Botterill (Cambridge: 1984), pp. 162–163. The complete translation of Augustine’s commentary on all the Psalms is found in *Expositions on the Book of Psalms by St. Augustine, Bishop of Hippo*, 6 vols. (Oxford: 1848).

17. D. W. Robertson, *A Preface to Chaucer* (Princeton: 1963), pp. 127–132.

18. Psalter from the Abbey of St. Remigius, Reims (twelfth century). Cambridge, St. John’s College, MS B 18, fols. I, 182, reproduced in Robertson, pls. 29, 30.

19. Trecento thinkers certainly knew of Apollo’s connection to music. For more, see my “Music in the Cornice of Boccaccio’s *Decameron*,” *Medievalia et Humanistica* 24 (1997):35.

20. Christ could be associated with Apollo as god of light, justice, and music. See Erwin Panofsky, *Renaissance and Renaissances in Western Art* (Almqvist: 1960), p. 204, and Mary Edwards, “Apollo and Daphne in the Arena Chapel,” *Bollettino del Museo Civico di Padova* 77 (1988):15–35. However, the connection between Giotto’s fiddler and Christ could just as easily be made if the figure is read as Orpheus, who was able to resurrect the dead with the sound of his instrument.

21. Jonathan Riess, “Justice and Common Good in Giotto’s Arena Chapel Frescoes,” *Arte Cristiana* 72 (1984):69–80. See also my *Singing in the Garden: Music and Culture in the Tuscan Trecento*, vol. 3, Biblioteca Musicologica, ed. Tilman Seebass (Lucca: Libreria Musicale Italiana Editrice, 1998), pp. 111–112.

22. Howard Mayer Brown has suggested that the *cimella* is a chalumeau, or single-reed instrument. See Jan Herlinger, *The Lucidarium of Marchetto of Padua* (Chicago: University of Chicago Press, 1985), p. 97.

23. For restoration of the frescoes, see Giorgio Fabbri Colabich, Alessandro Prosdocimi, and Gianantonio Saccomani, *I recenti lavori di restauro alla Cappella degli Scrovegni* (Padua: 1964).

24. Leonetto Tintori and Millard Meiss, *The*

*Painting of the Life of St. Francis in Assisi, with Notes on the Arena Chapel* (New York: 1962).

25. *Ibid.*, p. 165.

26. Giuseppe Gennari, *Annali della Città di Padova*, 3 vols. (Bassano: 1804), III, p. 24.

27. *Ibid.*, p. 24: "Saggio ordinamento, perchè le adunanze troppo numerose potevano essere sospette di macchinazione contro lo stato."

28. Bruno Brunelli, in his "La Festa dell' Annunciazione all' Arena e un affresco di Giotto," *Bollettino del Museo Civico di Padova* 18 (1925): 100–109, notes that the angel and Mary are placed in "luoghi deputati," or special theatrical chambers used in the dramatic representation of the Annunciation in Padua.

29. A. Dall'Acqua, *Cenni storici sulle famiglie di Padova* (Padua: 1842), pp. 104–105.

30. Tintori and Meiss (p. 160) explain: "The overlapping of the patches of intonaco prove beyond any question that on both nave walls as well as on the triumphal arch Giotto worked in the normal and practical sequence from top to down."

31. For more, see Claudio Bellinati, "La Cappella di Giotto all' Arena e le miniature dell' Antifonario 'Giottesco' della Cattedrale, 1306," in *Da Giotto al Mantegna*, ed. Lucio Grossato (Milan: 1974), pp. 23–30.

32. Graziella Federici Vescovini, "Pietro d' Abano e il salone di Padova," *Labyrinthos* 9 (1986): 57. Giuseppe Vecchi, "Medicina e musica: Voci e strumenti nel *Conciliator* (1303) di Pietro da Abano," *Quadrivium* 8 (1967): 5–22. Peter's writings about music appear most prominently in *Differentia* 83 of the *Conciliator* and *Problemata* 19 of the *Expositio*.

33. Howard Brown, "A Catalogue of Trecento Instruments," *Imago Musicae* 2 (1985): 214.

34. See Reinhold Hammerstein, *Die Musik der*

*Engel: Untersuchungen zur Musikanschauung des Mittelalters* (Bern and Munich: 1962).

35. All subsequent translations of Marchetto's *Lucidarium* are by Herlinger, *The Lucidarium*. Page numbers in the text refer to the Herlinger edition. Herlinger (p. 77) notes that this passage is not in Remigius, but is approximated, rather, in Macrobius, *Somnium Scipionis* 2.3.11. The Latin reads: "Magnitudo musice capit omne quod vivit et quod non vivit; hanc concentus angelorum, archangelorum, sanctorumque omnium ante conspectum Dei Sanctus, Sanctus dicentes since fine decantant."

36. Herlinger, p. 89.

37. See Carl Young, *The Drama of the Medieval Church*, vol. 2 (Oxford: 1933), pp. 248–250. Also see John Stevens, *Words and Music* (Cambridge: 1986), pp. 308–311.

38. Herlinger, p. 489.

39. Musical treatises from the late thirteenth and fourteenth centuries were often paired, as may be seen in the works of Garlandia, de Muris, and Philippe de Vitry. The *Lucidarium* concerns fundamentals, the *Pomerium*, mensuration (Herlinger, pp. 5–6).

40. For the tradition of music deriving from the word *water*, see Noel Swerdlow, "Musica Dicitur a Moys, Quod est Aqua," *Journal of the American Musicological Society* 20 (1967): 3–9.

41. Peter of Abano, *Expositio Problematum Aristotelis* (Mantua: 1475), 189r. For more on this, see F. Alberto Gallo, in *Music Theory and Its Sources*, ed. Andre Barbera (South Bend: 1990), pp. 190–196.

42. Franco Alessio, "Filosofia e scienza," *Storia della cultura veneta*, vol. 2 (Vicenza: 1976), pp. 171–206. For more on Abano's *Commentary*, see Luigi Olivieri, *Pietro d' Abano e il pensiero neolatino* (Padua: 1988).