

Canon as a Pedagogical Tool: Applications from Sixteenth-Century Wittenberg¹

Ralph Lorenz

The sixteenth-century German pedagogues composed and collected teaching pieces that were especially appropriate for their students, including the category of canonic pieces. The rich repertoire of these pedagogical pieces provides valuable material for practice and demonstration in modern classes dealing with sixteenth-century counterpoint, music history of the Renaissance, style-based music theory, early music performance, the history of theory, and so on.² The whole spectrum of sixteenth-century musicianship training can be addressed by these examples.³

Canon offered many benefits in the training of musicians, including great flexibility in performance. A full SATB choir was not required,

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²Music history and the history of theory are included in this list because I believe that classes are more interesting and subject matter is more tangible when students take an active part in studying the music.

³I am particularly interested in aspects that concern training in aural skills.

so the pieces could be realized by boys of the same age. Printing costs for the pedagogical materials were also minimized through the compact display of canons. Heinrich Faber commented on the pedagogical value of canons for beginners in his treatise *Compendiolum musicae pro incipientibus*:

In order that beginners be better exercised in these note-figures, let them add at this point two examples in which two voices sing out of one. For this sort of singing together in my opinion is extremely well suited to beginners. For the unskilled, as they follow the lead of others, can at the same time be shown how one should sing.⁴

Indeed, canons provided an extremely efficient way to introduce polyphony; students were able to practice and master the monophonic versions before making the relatively easy transition into polyphony. Many of these benefits are still applicable to modern pedagogy, as I shall demonstrate. Issues concerning the performance of canons bring insights regarding the training of aural skills.

Sixteenth-century Wittenberg is an especially fruitful resource for teaching materials; music as a school subject in Wittenberg received an unusual emphasis on practical skills such as singing and counterpoint.⁵ This practical branch of study, *musica practica*, was emphasized because leaders such as Martin Luther and Philipp Melanchthon recognized the important role music should play in education, and they felt the need to develop not only professional musicians but church members who could take an active part in congregational singing. Pedagogues who studied and/or taught in Wittenberg during this time

⁴Heinrich Faber, *Compendiolum musicae pro incipientibus* (Brunswick: n.p., 1548); facs. ed., in *Bibliotheca musica Bononiensis*, vol. 2, no. 20 (Bologna: Forni, 1980), fol. A 8v; trans. Bruce Bellingham in "The Bicinium in the Lutheran Latin Schools during the Reformation Period" (Ph.D. diss., University of Toronto, 1971), 158.

⁵A more detailed account of Wittenberg's establishment as a center of *musica practica* may be found in my forthcoming dissertation, "Pedagogical Implications of *musica practica* in Sixteenth-Century Wittenberg" (Indiana University, 1995).

include Adam von Fulda, Andreas Ornithoparchus, Nicolaus Listenius, Heinrich Faber, Hermann Finck, Adrianus Petit Coclico, Jan Blahoslav, and Jan Josquin.

Our modern definition of canon differs from that of the Renaissance; the latter evolved from the original Greek meaning of the word: law or rule. During the Renaissance, this rule, an inscription indicating the method of realization, often enigmatic in nature, determined how a piece was to be performed. Johannes Tinctoris defines canon in his *Terminorum musicae diffinitorium* (c. 1472-73) as “a rule showing the purpose of the composer behind a certain obscurity.”⁶ In a general sense, a canon connotes a composition accompanied by a rule that determined all or part of the realization. Ornithoparchus defines it as follows:

A *Canon* therefore is an imaginarie rule, drawing that part of the Song which is not set downe out of that part, which is set downe. Or it is a Rule, which doth wittily discover the secrets of a Song. Now we use *Canons*, either to shew Art, or to make shorter worke, or to try others cunning. . . .⁷

Finck’s definition may have been adapted from Ornithoparchus: “Canon is an imaginary precept drawing from the things that have been set down a [vocal] part of the song that has not been set down; Or, it is a rule that cleverly unveils the secret of a song.”⁸ Thus, the purpose of using this kind of musical structure was threefold: it demonstrated craft in composition, allowed for concise notation, and could serve as

⁶Johannes Tinctoris, *Terminorum musicae diffinitorium*, trans. Carl Parrish as *Dictionary of Musical Terms* (London: The Free Press of Glencoe, 1963), 13.

⁷Andreas Ornithoparchus, *Musice Active micrologus* (Leipzig: Valentin Schumann, 1517), trans. John Dowland as *His Micrologus, or Introduction* (London: Thomas Adams, 1609), 48.

⁸“Canon est imaginaria praeceptio, ex positis non positam cantilenae partem eliciens: Vel, est regula argute revelans secreta cantus.” Hermann Finck, *Practica musica* (Wittenberg: Georg Rhaus Erben, 1556); facs. ed., in *Bibliotheca musica Bononiensis*, vol. 2, no. 21 (Bologna: Forni, 1969), fol. Bb 4v.

a musical puzzle. The term *fuga* denoted what we now consider to be a canonic piece, one in which strict imitation occurs throughout the composition.

Definitions in the sixteenth century, however, could be somewhat controversial. In a letter dating from 1529 from Italian theorist Giovanni del Lago to Giovanni Spataro,⁹ del Lago tells Spataro that his definition of *fuga* is erroneous in not requiring similarity of solmization syllables. Spataro's definition of *fuga* reads as follows:

. . . the *fuga* calls for at least two parts, one of which follows the footprints of the other at the unison, fourth, fifth, and octave and their compounds. *Fuga* consists in the similarity of the intervals, rising and falling, and not in the similarity of solmization syllables, placed as one wishes with the sounds.¹⁰

An interesting issue arises here regarding the function of solmization. Del Lago objects to Spataro's example of *fuga* at the fourth, in which the solmization of the two voice parts is not always identical and therefore the intervallic imitation is not always exact. Spataro may not have fully understood del Lago's argument, but he counters that the passage in question could be solmized at least three different ways, and that solmization was only invented as an aid for singers in remembering intervals.¹¹ He then disputes the idea that *fuga* calls for identical solmization; apparently Spataro believes that the preservation of the exact shape of a line is enough to fulfill the requirements for *fuga*.¹²

⁹Bonnie J. Blackburn, Edward E. Lowinsky, and Clement A. Miller, eds., *A Correspondence of Renaissance Musicians* (Oxford: Clarendon Press, 1991), no. 28.

¹⁰*Ibid.*, no. 28, par. 4.

¹¹*Ibid.*, no. 29.

¹²Contrary to Blackburn's (et al.) claim (*ibid.*, 413 n. 21), this confirms Karol Berger's statement that del Lago and Spataro disagree on whether the consequent in a *fuga* must preserve the exact intervals; see Karol Berger, *Musica ficta: Theories of Accidental Inflections in Vocal Polyphony from Marchetto da Padova to Gioseffo Zarlino* (Cambridge: Cambridge University Press, 1987), 158.

For my purposes, I will adhere to del Lago's three conditions for *fuga* since the Wittenberg examples reflect these criteria: similarity in syllables, form, and note values.¹³ I will examine both canon and *fuga*, and in order to distinguish between the two, henceforth the terms will be used in their generally accepted sixteenth-century understanding.

Many of the Wittenberg pedagogues, including Finck, Faber, Listenius, Coclico, Blahoslav, and Jan Josquin, made significant use of canons and *fugae* within their treatises. It was obviously a popularity that grew after the first part of the sixteenth century, for early on Ornithoparchus (1517) defines canon almost incidentally within his discussion of augmentation and diminution, and Adam von Fulda (1490) is even antagonistic toward the "antiquated" genre of canonic compositions.¹⁴ After mid-century, *fugae* and measured polyphonic examples replaced the simple contrapuntal pieces in the teaching books.¹⁵

Although modern students are exposed to *fugae* in current anthologies of sight singing, students can still receive unique benefits from practice with examples from the Wittenberg repertoire. One benefit comes through their obvious compatibility with hexachordal solmization. The use of this system naturally reinforces sixteenth-century concepts of counterpoint and *musica ficta* and provides insights into the ways Renaissance musicians thought. A comparison between modern and sixteenth-century systems of solmization will show the advantages of following the latter. Here the use of strict imitation is an important consideration. Excerpts from a *fuga* by Josquin, from Rhau's collection of *bicinia*, are transcribed and labeled with various systems of solmization in Example 1.¹⁶

¹³Blackburn et al., no. 28, par. 9.

¹⁴Adam von Fulda, "De musica," in *Scriptores ecclesiastici de musica sacra potissimum*, ed. Martin Gerbert (St. Blaise: Typis Blasianis, 1784), 3:354.

¹⁵See Bellingham, 153-54.

¹⁶Georg Rhau, *Bicinia gallica, latina et germanica*, 2 vols. (Wittenberg: G. Rhau, 1545); ed. Bruce Bellingham in volume 6 of Georg Rhau: Musikdrucke (St. Louis, MO: Concordia Publishing House, 1980), 101-2 [vol. I, no. 74].

Example 1. Various solmizations of Josquin's *fuga*

- (a) = fixed do
- (b) = moveable do (minor do)
- (c) = moveable do (minor la)
- (d) = relative solmization
- (e) = hexachordal solmization

	1	2	3	4	5
(a)	la	do ti	re do ti	la ti do re	mi la mi
(b)	do	me re	fa me re	do re me fa	sol do sol
(c)	la	do ti	re do ti	la ti do re	mi la mi
(d)	re	fa mi	sol fa mi	re mi fa sol	la re la
(e)	re	fa mi	sol fa mi	re mi fa sol	la re la

(a)	re	fa	mi	sol	fa mi re mi	fa	sol	la	re	la
(b)	do	me	re	fa	me re do re	me	fa	sol	do	sol
(c)	la	do	ti	re	do ti la ti	do	re	mi	la	mi
(d)	re	fa	mi	sol	fa mi re mi	fa	sol	la	re	la
(e)	re	fa	mi	sol	fa mi re mi	fa	sol	la	re	la

	19	20	21	22	23
(a)	la	ti do re ti	do re mi la	mi re	mi fa re mi
(b)	do	re me fa re	me fa sol do	sol fa	sol la fa sol
(c)	la	ti do re ti	do re mi la	mi re	mi fi re mi
(d)	re	mi fa sol mi	fa sol la re	la sol	la [fa] sol la
(e)	re	mi fa sol mi	fa sol la re	la sol	la [fa] sol la

(a)	re	mi	fa	sol	mi	fa	sol	la	re	la	sol	la	ti	sol	la
(b)	do	re	me	fa	re	me	fa	sol	do	sol	fa	sol	la	fa	sol
(c)	la	ti	do	re	ti	do	re	mi	la	mi	re	mi	fi	re	mi
(d)	re	mi	fa	sol	mi	fa	sol	la	re	la	sol	la	[fa]	sol	la
(e)	re	mi	fa	sol	mi	fa	sol	la	re	la	sol	la	[fa]	sol	la

Example 1. (continued)

25 26 (#) 27 (#) (#) (#) 28 (#)

(a) mi re mi fa sol fa sol mi fa mi fa sol la fa mi
 (b) sol fa sol la te la te sol la sol la te do la sol
 (c) mi re mi fi sol fi sol mi fi mi fi sol la fi mi
 (d) la sol la ti do ti do la ti la ti do re ti la
 (e) re ut re mi fa mi fa re mi re mi fa sol mi re

(a) la sol la ti do ti do la ti la ti do re ti la
 (b) sol fa sol la te la te sol la sol la te do la sol
 (c) mi re mi fi sol fi sol mi fi mi fi sol la fi mi
 (d) la sol la ti do ti do la ti la ti do re ti la
 (e) re ut re mi fa mi fa re mi re mi fa sol mi re

Line a shows the fixed-do solmization. Line b exhibits the modern subsystem of moveable do, equivalent to the number system, in which the tonic in a major or minor key is always labeled do.¹⁷ Here the Mode 2 final, D, is equated with tonic. Line c illustrates the subsystem of moveable do in which the tonic in any minor mode (Dorian, Phrygian, or Aeolian) is labeled la.¹⁸ Line d shows another modern system of moveable do, referred to as “relative solmization,” in which the various modes are solmized according to their relationship to the

¹⁷For a proponent of this system, see, for example, Timothy A. Smith, “A Comparison of Pedagogical Resources in Solmization Systems,” *Journal of Music Theory Pedagogy* 5 (1991): 21.

¹⁸Users of this system include many proponents of Zoltán Kodály’s approach to music education; see, for example, Lois Choksy, *The Kodály Method: Comprehensive Music Education from Infant to Adult*, 2d ed. (Englewood Cliffs, NJ: Prentice-Hall, 1988), 14, 133.

major-scale collection of pitches. Thus, in this framework Modes 1 and 2 use re scales, Modes 3 and 4 mi, Modes 5 and 6 fa, and Modes 7 and 8 sol.¹⁹ Hexachordal solmization is provided in line e.

In the original notation of this *fuga*, only one voice is given, with instructions that the consequent should imitate at a perfect fifth above and a semibreve later. The use of identical syllables in the consequent will maintain the exact intervallic pattern of the guide and will provide greater efficiency in teaching the piece; students can learn the original voice together, and those who sing the consequent will then apply the same pattern of syllables at a fifth higher.²⁰ Fixed do does not use

¹⁹Proponents of this approach include Micheál Houlahan and Philip Tacka, who call it “relative solmization,” and Edwin E. Gordon, who calls it “tonal solfege”; see, for example, Houlahan and Tacka, “Continuing the Dialogue: The Potential of Relative Solmization for the Music Theory Curriculum at the College Level,” *Journal of Music Theory Pedagogy* 8 (1994): 222; Edwin E. Gordon, *Learning Sequences in Music: Skill, Content, and Patterns*, rev. ed. (Chicago: G. I. A. Publications, 1993), 262.

Cristle Collins Judd uses comments by Glarean (*Dodecachordon* [1547]) to support her theory of tonal coherence in Renaissance sacred vocal polyphony, in which tonal categories are classified by hexachordal function as *Ut*, *Re*, and *Mi* tonalities; see Cristle Collins Judd, “Modal Types and *Ut*, *Re*, *Mi* Tonalities: Tonal Coherence in Sacred Vocal Polyphony from about 1500,” *Journal of the American Musicological Society* 45 (1992): 428-67.

²⁰The question of whether a *fuga* must always maintain exact intervallic imitation is not quite clear. James Haar remarks that maintaining exact intervallic imitation in the consequent voices can muddle or even transpose the mode. But as Benito Rivera notes, Zarlino specifies that one voice, the *soggetto* (which can be either a *cantus firmus* or a freely composed line), defines the mode; everything else is subordinate. See James Haar, “Zarlino’s Definition of Fugue and Imitation,” *Journal of the American Musicological Society* 24 (1971): 248-49; Benito V. Rivera, “Finding the *Soggetto* in Willaert’s Free Imitative Counterpoint: A Step in Modal Analysis,” in *Music Theory and the Exploration of the Past*, ed. Christopher Hatch and David W. Bernstein (Chicago: The University of Chicago Press, 1993), 73-102. Jim Levy and Akane Mori, who use hexachordal solmization to explain the intervallic relationships that result between the guide and consequent voices of *fugae* in similar and contrary motion, point out that imitation at the perfect intervals does not insure maintenance of mode in a *fuga* in contrary motion; see Jim Levy and Akane Mori, “The Diatonic Basis of Fugue in Zarlino,” *In Theory Only* 9 (1986): 33-46. Robert Gauldin recognizes the duplication of syllables: “. . . the solmization syllables for the imitating parts will remain constant, provided that the imitation takes place at some perfect interval. Note that as a result E-F (Mi-Fa) will be

identical syllables between the guide and consequent, while hexachordal solmization does. The moveable-do systems (lines b, c, and d) would not use the same syllables between guide and consequent if the modern convention of equating one pitch class to tonic is followed. However, these systems can be easily modified for a *fuga* by using the same syllable pattern for the consequent, as illustrated here.

Most of the modern systems cannot properly handle the requirements of *ficta*. Josquin's *fuga* is in Mode 2 (plagal Dorian), which assumes B \natural unless context calls for B \flat . The only systems that would consistently apply the convention *una nota supra la semper est canendum fa* in passages such as m. 22 of the guide, where B \flat must be realized instead of B \natural , are the last two, relative solmization and hexachordal solmization. Systems b and c would then mistakenly apply F \sharp to the consequent in m. 23, if the same syllables are used. All systems except fixed do would correctly apply the F \sharp s in mm. 26-28 of the consequent.

Another distinction, though less crucial, is that hexachordal solmization only needs to use its six standard syllables in this example. Moveable do (minor do) requires the use of te, while moveable do (minor la) requires much use of fi.

Of the modern systems, only relative solmization serves this music well. Historical and practical aspects of sixteenth-century theory and convention are best served by line e, the sixteenth-century system.²¹

To demonstrate how a teacher in Wittenberg might sing a given voice and expect that students be able to imitate what they hear (or have learned) by repeating the same solmization pattern, try the

imitated by A-B \flat (also Mi-Fa).'' See Robert Gauldin, *A Practical Approach to Sixteenth-Century Counterpoint* (Englewood Cliffs, NJ: Prentice-Hall, 1985), 34.

²¹Other reasons for using hexachordal solmization arise with more complex examples. For example, *musica ficta* is very naturally employed by the guideline in hexachordal solmization that melodic leaps of perfect intervals should be solmized with identical syllables.

Margaret Bent has argued that overall pitch standards could change during the course of a piece; see Margaret Bent, "Diatonic *Ficta*," *Early Music History* 4 (1984): 1-48. Fixed do would not be equipped to handle this change.

following simple two-voice examples. In Example 2a, the leader sings a simple *cantus firmus*, which the followers imitate in unison, two notes later. Example 2b adds the challenge of imitating at the interval of a perfect fifth.

Example 2. "Improvised" *fuga*:

(a) Unison

Students ("by ear")

Leader

re mi fa sol fa mi re

(b) Perfect fifth

Students ("by ear")

Leader

(b)

re fa mi re la sol fa la sol re

This is an excellent exercise both in memory and in sensitivity to other parts. It can be used before and after students have learned how to read music. Modern classes may benefit from similar exercises.

Fugae were used by the Wittenberg pedagogues to illustrate numerous facets of theory and practice, and many of these examples make excellent teaching pieces for the modern theory teacher. The most basic examples serve to illustrate the vocables. Example 3 is a five-voice *fuga* that Jan Josquin provides for practice in the vocables and as an illustration of *signum concordantiae* (the signs that indicate the starting point for each voice part) and fermata (the signs representing the ending point for each voice part);²² it is adapted from a five-voice *fuga* by Listenius.²³

Example 3. Jan Josquin: *fuga* for practice in vocables



²²Jan Josquin, *Musika* (1561), trans. Thomas Sovík, *Czech Documents in Translation* (n.p.: Czech Historical Society, 1991), fol. E 6r. Sovík notes two errors: the third *signum concordantiae* should be shifted to the following rest, and there should be a fermata above the eleventh pitch. See *ibid.*, 66, n. 33. Syllables are abbreviated by their first letter.

²³Nicolaus Listenius, *Musica* (Nuremberg: Johann Petreius, 1549); facs. ed., in *Veröffentlichungen der Musik-Bibliothek Paul Hirsch*, vol. 8 (Berlin: Verlag von Martin Breslauer, 1927), fol. A 6v. The artistic value of this diverse group of canonic examples varies widely. Listenius composed his own *fugae*, many of which should be relegated to the lower end of the artistic spectrum, even when taking into consideration that theorists such as Zarlino gave more license in canonic writing because of inherent difficulties. Listenius' examples are often characterized by many similar intervals in succession, emphasis on fifths and octaves, and much uninteresting stepwise motion. Yet, even these simple examples can be useful to us for mastering the fundamentals of sixteenth-century theory and for increasing fluency in solmization and the hexachord system.

All pitches in this example are contained within the hard hexachord. It is a very simple melody, and yet students have the opportunity to sing in five parts. The notation is “quasi-mensural” with only two types of durations, thus easing the transition from chant to mensural music.

Example 4a shows a more extensive *fuga* that Blahoslav provides for practice in the vocables.²⁴ The tenor is imitated a fifth above by the discant and a fourth below by the bass. The passage is adapted from the *Agnus Dei II* of Josquin des Prez’s *Missa Hercules Dux Ferrariae*. The transcription in Example 4b shows the beginning of the original version from Josquin’s mass.²⁵ The Blahoslav example has been transposed, perhaps to suit the range of the boy students, or perhaps to afford practice in the soft hexachord.

Example 4a. Blahoslav: *fuga* for practice in hexachord solmization

²⁴Jan Blahoslav, *Musica* (1558), trans. Thomas Sovik, *Czech Documents in Translation* (n.p.: Czech Historical Society, 1991), fols. B 8r-8v.

²⁵The source for the transcription is *Werken van Josquin des Prés*, 55 vols., ed. A. Smijers (Amsterdam: G. Alsbach, 1950), 2:35.

Example 4b. Josquin des Prez: *Missa Hercules, Agnus Dei II*

50

55

Example 5 is one of nine *fugae*, all for two voices, that Faber provides in *Compendiolum musicae*.²⁶ This example represents a progression in difficulty in that it is designed for practice in mutation (between the hard and natural hexachords). The normal directive is

²⁶Faber, fol. A 5v. Points of mutation are indicated in brackets.

given to mutate at *re* ascending and *la* descending.²⁷

Example 5. Faber: *fuga* for practice in mutation

ut fa mi ut re ut fa sol la fa mi [la] sol sol la mi fa sol fa

mi ut re mi fa sol mi [re] mi fa mi [sol] fa sol

Example 6, Ornithoparchus' illustration of canon, gives occasion for some observations concerning notation and skills development.²⁸ Benefits in using the Wittenberg repertoire can be gained by adhering to the original notation; performances become more stylistically

²⁷Examples that contain mutation help students develop the ability to change tonal orientation. This skill is useful to modern students of moveable-do solmization in learning to handle passages that involve tonicization or modulation.

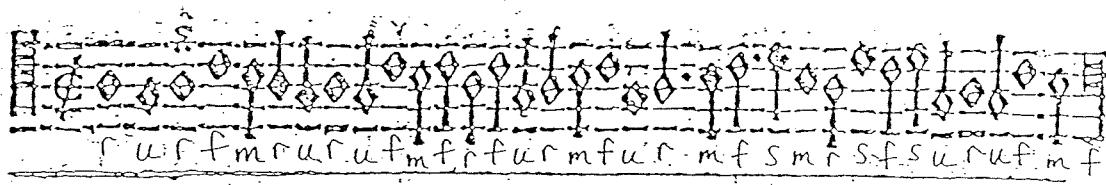
²⁸Ornithoparchus, trans. Dowland, 48. This is a true canon as originally conceived, but Dowland omits in his translation Ornithoparchus' "rule" stating that the bass imitates the tenor a fifth below. See Ornithoparchus, facs. ed. (Hildesheim: Georg Olms, 1977), fol. F 5r.

accurate when free from the metric connotations inherent in modern notation.²⁹ The visual and psychological effects that result from seeing no bar lines and reading original, rather than halved or quartered, note values contribute to a smoother and more sustained vocal line and enhance the linearity and rhythmic independence of parts. A comparison of Examples 6a and 6b makes that obvious.

²⁹Knud Jeppesen and Edward Lowinsky, however, argue that bar lines are appropriate for this music because of regular accentuation. See Knud Jeppesen, "Et Par notationstekniske Problemer: Det 16. Aarhundredes Musik og nogle dertil knyttede Iagttagelser (Taktinddeling-Partitur)," *Svensk Tidskrift för Musikforskning (Studier Tillägnade Carl-Allan Moberg)* 43 (1961): 171-93; Edward E. Lowinsky, foreword to *Musica Nova*, ed. H. Colin Slim, *Monuments of Renaissance Music*, vol. 1 (Chicago: The University of Chicago Press, 1964), vi. Lowinsky comments, "The single voice is free of regular metric patterns and can therefore be written without bar-lines. The whole of the music, however, obeys a harmonic pulse that is as regular in its arrangement of consonance and dissonance as the individual voice is irregular in stress. Therefore, a score, i.e., the visual presentation of the simultaneous harmonic result of the various parts, is presented in regular divisions of time. . . . If we are clear about the function of the bar-line, if we do not interpret the first beat of the bar as a point of inevitable and incontestable stress, regular barring not only does justice to the harmonic rhythm but, indeed, brings out the beautiful divergence and convergence of these two kinds of rhythm: the rhythm of the individual voices constantly opposing, modifying, challenging the bar-line, while the harmonic rhythm gathering the voices together at cadence points confirms the bar-line by allowing cadences only on the first and third beat of the measure. Irregular barring deprives us not only of the symbol for regular harmonic rhythm but also of the exciting spectacle of the constant challenge of the bar-line by individual voices. Moreover, it obstructs unnecessarily the study of dissonance treatment of the period." See Edward Lowinsky, "Early Scores in Manuscript," *Journal of the American Musicological Society* 13 (1960): 158. Charlotte Smith states, "The study of melody and rhythm should make clear that the bar line is used for facilitating reading and should not affect metrical design or stress." See Charlotte Smith, *A Manual of Sixteenth-Century Contrapuntal Style* (Newark: University of Delaware Press, 1989), 19. While these sentiments are appreciated, notated bar lines might suggest metrical stress to twentieth-century performers.

Example 6. Ornithoparchus: demonstration of canon:

(a) Original notation



(b) Possible modern transcription, one voice



Use of the original notation also brings singers in contact with the various clefs then used (C, F, and G clefs). An added benefit of working with these clefs is their usefulness in transposing modern music. At one time this skill was commonly included in the training of musicians; A. Tillman Merritt argued this point as justification for incorporating the various clefs in the study of sixteenth-century counterpoint: “. . . a thorough knowledge of the clefs is essential for transposing music at sight, or for reading orchestral scores in which transposing instruments have a part.”³⁰ Perhaps it is a skill whose acquisition is still justified.

³⁰A. Tillman Merritt, *Sixteenth-Century Polyphony: A Basis for the Study of Counterpoint* (Cambridge: Harvard University Press, 1939), xvi.

Another important factor regarding the notation is that sixteenth-century performers used part notation. There are important differences in the listening skills required of singers working without full scores; without the visual aid of seeing how parts line up, performers must have a heightened aural sense of how parts relate to one another. This practice has great value in improving skills used in ensemble performance, an area in which students can always stand improvement. Many instances calling for *musica ficta* must be recognized aurally in the vertical domain.

Advanced students who have received training in counterpoint can benefit from some of the Wittenberg canonic puzzles. Since John Dowland has omitted Ornithoparchus' inscription for Example 6, performers must use their knowledge of counterpoint to determine the interval of imitation. At first glance, there appear to be a couple of possible solutions. But the rules of counterpoint eventually point to only one option: imitation at the fifth below. Errors in Examples 7a (imitation at the fourth above) and 7b (at the octave) are indicated with an "x." For ear training purposes, students can develop their "vertical" listening skills by attempting to aurally identify these contrapuntal problems while singing through the various possibilities.

Example 7. Unsatisfactory resolutions of Ornithoparchus' example:

(a) Imitation at a fourth above

The image shows a musical score for two staves, both in treble clef and 2/4 time. The notation consists of five measures. In the second measure, a dashed vertical line connects a note on the upper staff to a note on the lower staff, with an 'X' above it, indicating an unsatisfactory resolution. The notes in the first measure are G4 (upper) and G4 (lower). In the second measure, the upper staff has a G4 and the lower staff has a C5. In the third measure, the upper staff has an A4 and the lower staff has a D4. In the fourth measure, the upper staff has a B4 and the lower staff has an E4. In the fifth measure, the upper staff has a C5 and the lower staff has an F4.

Example 7. (continued)

(b) Imitation at an octave above

Another interesting consideration is that *fugae* in modern anthologies such as Ottman's³¹ tend to be imitative only at the unison and octave, while many of the Wittenberg examples feature imitation at the fourth or fifth. Although the same solmization syllables can be used for each voice, imitative parts at the intervals of a fourth or fifth must of course be performed at a different pitch level than the given voice. It would be possible to realize the answering voices through visual transposition, but this is not necessary, because singers are not tied down to absolute pitch. Aural transposition will suffice. This difference in pitch level adds a level of difficulty in performance.

More advanced examples were used by Coclico and Finck. Whether or not Coclico's claim that he was a student of Josquin des Prez is true, his *Compendium musices* exhibits a clear pedagogical method, in which *fugae* are an important resource. He provides over twenty-five *fugae* for various purposes, some to illustrate the eight-mode system. His treatment of the art of diminution includes a *fuga* in basic and ornamented versions, reproduced in Example 8a.³² The reductive graph

³¹Robert Ottman, *Music for Sight Singing*, 3d ed. (Englewood Cliffs, NJ: Prentice-Hall, 1986).

³²Adrianus Petit Coclico, *Compendium musices* (Nuremberg: Johann Berg und Ulrich Neuber, 1552); facs. ed., in *Documenta musicologica*, vol. 1, no. 9 (Kassel: Bärenreiter, 1978), fol. I 3v. A diminution is an embellished melodic figure, so called because it breaks relatively long notes into figures of notes with shorter duration. Sixteenth-century

in Example 8b shows how the figurations consist largely of passing notes and neighbor notes.³³

Example 8. Coclico: *fuga* with diminutions:

(a) Basic and ornamented versions

Aliud exemplum, Fuga quatuor uocum ex una,

Tendit ad artus uirtus.

ELEGANS.

Tendit.

(b) Reductive graph

singers with advanced training were to be able to improvise diminutions in chamber performance.

³³Notes from the original version are beamed; durational values of these notes are halved. Additional notes from the ornamented version are represented as unbeamed closed noteheads. Barlines are added to demonstrate the triple meter.

Advanced students versed in the application of diminutions can benefit from the use of simple *fugae* as experimental vehicles for improvised ornamentation.

Example 9 shows a *fuga* for seven voices with an unusual emphasis on notes of short duration.³⁴ It comes from the last section of Coclico's treatise in which he demonstrates the art of composing for many voices. He provides several of these pieces but does not explain specific techniques for composing them. This particular example is notable for providing practice in syncopation.

Example 9. Coclico: seven-voice *fuga*

Fuga septem uocum.

Ambulate dum lucem habetis, ne tenebra uos com-
prehendant. ij

None of the treatises in the Wittenberg group gives instructions for composing *fugae*, but there is evidence that this subject was a part of advanced studies. In the notebook of Georg Donat, a student who matriculated at the University of Wittenberg in 1542, lecture notes show that the discussion of composition included the topic of *fugae*.³⁵

Perhaps the most interesting treatment of canon is provided by

³⁴Ibid., fol. P 3r. One of the voices is a drone. Many of Coclico's examples contain a greater variety of rhythm than is found elsewhere.

³⁵Donat's notebook is discussed in Adolf Aber, "Das musikalische Studienheft des Wittenberger Studenten Georg Donat (um 1543)," *Sammelbände der internationalen Musikgesellschaft* 15 (1913): 68-98.

Finck. His treatise *Practica musica*, arranged in five books, is quite unusual in that an entire book is devoted to canon; in it are explanations and examples of twenty-five rules.³⁶ The pieces resulting from these rules are what we now term mensuration and imitation canons. His treatise is a valuable source of the various types of *fugae* that result from these canons and represents composers such as Josquin, Ockeghem, Obrecht, and Pierre de la Rue. Finck gave significant attention to canon even when it was no longer a standard structural element of contemporaneous composition.

Finck's twenty-five canonic formulas are listed and explained in groups, as some of them have equivalent meanings. The rules generate pieces in two ways: they may prescribe some alteration of the actual notation (e.g., mensuration canons, or instructions to sing every other note); or they may simply dictate the interval of imitation (e.g., imitation canons). The "antiquarian interest" of Finck is exhibited by the inclusion of enigmatic canons, of which nine are by Josquin and one each by Ockeghem, Obrecht, Moulu, and de la Rue. Finck's list is a valuable resource for scholars and performers attempting to decipher sixteenth-century canonic rules.

These pedagogical pieces have supplied many insights into skills training. The strict imitation of *fuga* is an important factor in making hexachordal solmization the most appropriate system for this repertoire. *Fugae* taught by rote offer unique exercises in memory and ensemble skills. *Fugae* at the fourth or fifth entail aural transposition, which may develop skills in vertical awareness. Use of the original notation helps to ensure accurate stylistic interpretation, and use of part notation provides opportunity to develop vertical listening skills.

The typical modern-day class in sixteenth-century counterpoint tends to be small, with an unpredictable distribution of vocal parts; it can benefit from the ensemble flexibility of *fugae*, much as the sixteenth-century schools in Wittenberg did. With the wide range of pieces available in this repertoire, any aspect of sixteenth-century skills training can be addressed. Yet, several of these same benefits will extend to other courses in which *fugae* are chosen from additional

³⁶Finck, *Practica musica*, Book Three.

stylistic periods. Incorporation of the Wittenberg examples into the mainstream theory curriculum can provide variety in the daily training routine. Finck's strong recommendation that young composers study the best models serves as an appropriate close:

It then proceeds as in the common proverb: whatever is generally pleasing to a person, by such will he be moved. Thus, if a person delights in the compositions of the finest composers, familiarizes himself with them by frequently singing and carefully studying them, it can not be but that he will form his judgments in accordance with them and afterwards the clausulas in his memory will unconsciously come forth when he composes.³⁷

³⁷Finck, fol. Rr 2v; trans. Frank Kirby in "Hermann Finck's *Practica musica: A Comparative Study in Sixteenth[-]Century German Musical Theory*" (Ph.D. diss., Yale University, 1957), 288.