Zarlino, Anamorphosis, and Cinquecento Italy

Edwin Li

The University of Hong Kong

Recommended Citation

Li, Edwin (2016) "Zarlino, Anamorphosis, and Cinquecento Italy," *Nota Bene: Canadian Undergraduate Journal of Musicology*: Vol. 9: Iss. 1, Article 3.

Zarlino, Anamorphosis, and Cinquecento Italy

Abstract

This paper examines the relationship between Gioseffo Zarlino's personal considerations and the socio-cultural circumstances in Cinquecento Italy on the basis of anamorphosis—the idea that an object can be understood from multiple angles. Arguably one of the most important theorists of the sixteenth century, Zarlino, although cognizant of chords as vertical constructs, deliberately disguised tonality as modality. This prompts a myriad of questions as to why he did not further develop his theory into a major-minor schema, given that he had already emphasized the Ionian and Aeolian modes in *Le Istitutioni Harmoniche*. This paper explores the reasons behind his conservatism, arguing that Zarlino's religious posts and the tumultuous religious-cultural-political climate of late-sixteenth-century Venice influenced his anamorphic inclinations. The paper also attributes his constraint to the prevalent Renaissance concept of the imitation of nature. By looking into the essential qualities of nature, notably eternity, this paper claims that the imitation of nature can explain both the perpetuation of modality and Zarlino's adoption of tonality. The paper concludes that Zarlino's belief in God can be seen as an overarching force in his theoretical formulation, positing a hierarchical relationship among the factors discussed.

Keywords

Zarlino, Anamorphosis, Cinquecento Italy, modality, tonality

Zarlino, Anamorphosis, and Cinquecento Italy

Edwin Li

Year III – The University of Hong Kong

In his analysis of Han Holbein's double portrait, *The Ambassadors* (1533), Steven Greenblatt states, "The very concept of locatable reality upon which we conventionally rely in our mappings of the world, is to subordinate the sign systems we so confidently use to a larger doubt."¹ Here, he introduces anamorphosis not only as an optical technique, but also as a conceptualization.² The complexity of Gioseffo Zarlino's (1517?–1590) treatises and compositions in Cinquecento Venice is an example of anamorphosis; they are so ambiguous yet ingeniously written that one can understand them from multiple angles.

1. Stephen Greenblatt, *Renaissance Self-Fashioning: From More to Shakespeare* (Chicago: University of Chicago Press, 1980), 20–21.

2. According to the *Oxford English Dictionary*, anamorphosis is "a distorted projection or drawing of anything, so made that when viewed from a particular point, or by reflection from a suitable mirror, it appears regular and properly proportioned; a deformation." "anamorphosis, n.," *OED Online*, March 2015, Oxford University Press, <http://www.oed.com/view/Entry/7061?redirectedFrom=anamorphosis>.

Zarlino was hailed by Hugo Riemann as the first to discover triadic harmony in *Le Istitutioni Harmoniche* (1558).³ His work can be seen as fundamental to the transition from modality and tonality. In *Istitutioni*, Zarlino stated that the combination of a third and fifth above the bass constitutes a “*Harmonia Perfetta*” (Perfect Harmony), implying that the bass—rather than the tenor—determines the harmony.⁴ This

3. Hugo Riemann, *Geschichte der Musiktheorie* (Leipzig: Hesse, 1898), 24. Subsequent scholars, such as Joel Lester and Benito Rivera, claimed that unbeknownst to Riemann, triadic theory began as early as in the thirteenth century, challenging his claim that Zarlino “discovered” it. Joel Lester, “Major-Minor Concepts and Modal Theory in Germany, 1592–1680,” *Journal of the American Musicological Society* 30, no. 2 (1977): 208–253; Joel Lester, “Root-Position and Inverted Triads in Theory around 1600,” *Journal of the American Musicological Society* 27, no. 1 (1974): 110–119; and Benito Rivera, “The ‘Isagoge’ (1581) of Johannes Avianius: An Early Formulation of Triadic Theory,” *Journal of Music Theory* 22, no. 1 (1978): 43–64.

4. Zarlino wrote “that composition is called Perfect in which every change of harmony, whether up or down, always includes a variety of sounds within its limits. And such is indeed truly the Perfect Harmony which includes in itself such Consonances; but the Tones or Consonances which can produce this diversity of feeling are two, the Fifth and the Third, or the compound of each.” Gioseffo Zarlino, *The Art of Counterpoint: Part Three of Le Istitutioni Harmoniche*, 1558, trans. Guy A. Marco and Claude V. Palisca (New Haven and London: Yale University Press, 1968), 299–300. Rivera claims that “the earliest known listing of chordal formations” is from Coussemaker’s *Ars discantus secundum Johannem de Muris*; Zarlino only brings it to a high relief. Rivera, “Harmonic Theory in Musical Treatises of the Late Fifteenth and Early Sixteenth Centuries,” *Music Theory Spectrum* 1 (1979): 84. Zarlino also writes, “Bass has such a propriety, which sustains, stabilizes, fortifies, and gives support to all the other parts.” Zarlino, *Le Istitutioni Harmoniche*, III, 293–294.

approach to musical composition was not revolutionary; Richard Crocker observed that it dates back to the thirteenth century.⁵ However, even if such tonal traits were prevalent before Zarlino's time, the earlier concept of bass-driven harmony is not the same as his use of it. That is not to say, however, that there was a dialectic between modality and functional harmony. Rather, I extend Carl Dahlhaus theory of Baroque harmony—his “coordinate structure” (*Nebenordnung*)—to Zarlino's time. In this theory, Dahlhaus describes harmony as “sonorities [that] are linked one after the other without giving rise to the impression of a goal-directed development.”⁶ It is the ambiguity between tonality and modality that features in Zarlino's treatises and compositions. Zarlino simultaneously brought bass line progressions, vertical sonorities, and dominant-to-tonic cadences to the fore of compositions, and distanced himself from them. This may

5. Richard Crocker, “Discant, Counterpoint, and Harmony,” *Journal of the American Musicological Society* 15, no. 1 (1962): 1–21. Other scholars also observe that this rule (bass ruled over tenor) was not uncommon prior to Zarlino's time. Helen E. Bush, for example, states, “There is abundant evidence that as early as the last decades of the fifteenth century the bass was often treated as the foundation of the harmony.” Helen Bush, “The Recognition of Chordal Formation by Early Music Theorists,” *Musical Quarterly* 32 (1946): 237. Edward E. Lowinsky, in addition, argues that tonal harmony is well exemplified by Dufay's chansons, and the concept of four-part harmony with bass as the root and melody the top dates back to 1480 in Italy. Edward E. Lowinsky, “Music in the Culture of the Renaissance,” *Journal of the History of Ideas* 15 (1954): 530.

6. Carl Dahlhaus, *Studies on the Origin of Harmonic Tonality*, translated by Robert O. Gjerdingen (Princeton, NJ: Princeton University Press, 1990), 141.

create a dilemma for musicologists: if Zarlino's thinking was prescient, why did he not further his theory to a major-minor schema, given that he had already emphasized the Ionian and Aeolian modes in *Istitutioni*?

John Martin describes this contradiction of one's self as a condition of Zarlino's time: "Individuals formed their sense of selfhood through a difficult negotiation between inner promptings and outer social roles...[they] looked both inward for emotional sustenance and outward for social assurance."⁷ This paper argues that although Zarlino was cognizant of chords as vertical constructs in Cinquecento Italy, he deliberately disguised the distinction between tonality and modality to allay the struggle between his inward and outward self amid the socio-cultural conditions in Cinquecento Venice.⁸ The circumstances under which his treatises and compositions were written, as well as why and how they were written, are vital to understanding his anamorphosis.

The tumultuous religious-cultural-political climate of late-sixteenth-century Venice and Zarlino's religious posts

7. John Jeffries Martin, *Myths of Renaissance Individualism* (New York: Palgrave Macmillan, 2004), quoted in Edward Muir, *The Culture Wars of the Late Renaissance: Skeptics, Libertines, and Opera* (Cambridge: Harvard University Press, 2007), 6.

8. Albion Gruber posits that Zarlino exhibits a "tonal consciousness" that prefigures that of Jean-Philippe Rameau. Albion Gruber, "Mersenne and Evolving Tonal Theory," *Journal of Music Theory* 14, no. 1 (1970): 64. Similarly, William Thomson labels it a "harmonic consciousness," although this is not specifically directed at Zarlino. William Thomson, "The Problem of Tonality in Pre-Baroque and Primitive Music," *Journal of Music Theory* 2, no. 1 (1958): 36–46.

influenced his anamorphic inclinations.⁹ Although little is known about Zarlino's life before 1541, by the 1550s he was a respected composer in Venice; he published two motet books in 1549 and his *Istitutioni* in 1558, before he was appointed *maestro di capella* at San Marco in 1565.¹⁰ There, he studied various subjects including music, Greek, and philosophy under the tutelage of Adrian Willaert, Cristoforo de Ligname, and Guglielmo Fiammingo, among others.¹¹

Zarlino's appointment at San Marco coincided with the end of the Italian Wars and the Council of Trent. At that time, Italy was embroiled in religious and political turmoil, and all

9. Italy was relatively peaceful after Habsburg domination and the overthrow of the Florentine Republic; however, beneath this veneer, Italy was only peaceful in the sense of not having war, but its restlessness in political, religious and cultural turmoil brought about a period of, I will call, "disguised peace." George Holmes, *The Oxford Illustrated History of Italy* (New York: Oxford University Press, 1997), 83–85.

10. According to Palisca, "Archival documents give the dates of his religious promotions: the first tonsure on 14 April 1532; minor orders on 3 April 1537; and a deaconship on 22 April 1539 (from which his presumed date of birth is deduced on the basis of a regulation that one had to be 22 to be eligible for this position)." Claude Victor Palisca, "Zarlino, Gioseffo," *Grove Music Online* (Oxford University Press), accessed April 2, 2016, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/30858>. One of the most prominent myths about Zarlino is that he was ordained as a priest and an organist at Chioggia cathedral before moving to Venice.

11. For more biographical information of Zarlino, see Palisca, "Zarlino, Gioseffo"; Cristle Collins Judd, *Reading Renaissance Music Theory: Hearing with the Eyes*, (Cambridge: Cambridge University Press, 2000), 184–188; Judd, "'To Discourse Learnedly' and 'Compose Beautifully': Thoughts on Gioseffo Zarlino, Theory, and Practice," *Society for Music Theory* 19, no. 3 (2013): 4–15.

dissidents were suppressed by the Roman Catholic Church.¹² Persecutions, terror, and systematic censorship were prevalent; any suspicious acts were reported to the Church and, ultimately, eradicated by the Inquisition.¹³ This explains why Zarlino did not abandon modality in his theoretical treatises and compositions. Against the backdrop of “religious despotism,” Zarlino, although aware of tonality, could not renounce modality due to the mandates of the Catholic Church, where modality had been used in liturgical services since ancient Rome.¹⁴ Embracing tonality would have placed him in opposition with the Church, a dangerous position for one to assume in the sixteenth century.

Given the consequences of discarding modality, it is perhaps surprising that Zarlino even published his treatises and compositions. Zarlino’s personal reasons may help explain his move to tonality. Cristle Collins Judd argues that “Zarlino may well have used...all his publications, as a means to career advancement and to cultivate and enhance his image as both a

12. Lauro Martines, *Power and Imagination: City-States in Renaissance Italy* (New York: Alfred A. Knopf, 1979), 335.

13. There was even an *Index of Prohibited Books*. Martines, *Power and Imagination*, 335. An inquisition, as described by William Hunt, is “a system of religious courts, spies, police, judges, and executioners,” aiming at eradicating heresies. Hunt, *History of Italy* (London: Macmillan, 1908), 186. Also see, Paul F. Grendler, *Culture and Censorship in Late Renaissance Italy and France* (London: Variorum reprints, 1981), IX, 48–65. Lion’s Mouths was set up to report to the Council of any suspicious acts. John Harold Plumb, *The Italian Renaissance* (New York: Mariner Books, 1985), 26.

14. Grendler, *Culture and Censorship*, 50.

practical musician and learned composer.”¹⁵ Because Zarlino’s former teacher, Adrian Willaert, was in poor health, it is possible that Zarlino wished to prove his suitability as Willaert’s successor.¹⁶ Using his treatise and compositions, Zarlino promoted himself as a musician, composer, and academic. His *Istitutioni* followed shortly after the publication of Nicola Vincentino’s *L’Antica musica ridotta alla moderna practtica* in 1555 and the establishment of the *Accademia Veneziana* in 1557. Vincentino’s and Zarlino’s treatises provided similar analyses of ancient Greek sources; however, published three years after Vincentino’s treatises, Zarlino’s works can be considered as an attempt to supplant the earlier publication as the authoritative theoretical treatise of its time.¹⁷ The *Istitutioni* can also be considered in relation to the *Accademia Veneziana* as evidence of his abilities and justification for his membership. If the presupposition that Zarlino wanted to enhance his public image was true, admittance to the Academy of Fame (*Accademia della Fama*; another name for *Accademia Veneziana*) would have helped to challenge any criticisms against him and to establish his social status in Venice, if not all of Italy.¹⁸

15. Judd, *Reading Renaissance Music Theory*, 192.

16. This was mentioned in Willaert’s wills of 1561 and 1562. Ibid., 196. According to Judd, Zarlino’s motet book of 1566 (published after he took over the post of maestro) was written to “[cement] his credibility...during the ‘probationary period.’” Judd, “Thoughts on Gioseffo Zarlino, Theory, and Practice,” 7.

17. Judd, “Thoughts on Gioseffo Zarlino, Theory, and Practice,” 7.

18. Ibid., 6.

Nonetheless, the relationship between Zarlino's personal intentions, tonality, and modality is nebulous. As a pious person, he would not have vied for fame for its own sake, but his authoritative public image as a musician, theorist, composer, and academic supported his anamorphic expression in his treatises and compositions.¹⁹ His social status allowed him to facilitate the transition from modality to tonality, and it was only a matter of time until the masses accepted tonality as prominent. Zarlino sacrificed theoretical progression in order to establish himself as a transitional figure.

Personal intentions aside, the social function of Zarlino's treatises and compositions, particularly *Istitutioni*, could also have been a factor in their anamorphic expression. Following the Italian Wars, Italians were reconsidering their forms of government, religion, and art. They mocked priests and opposed taxations.²⁰ Some Italian humanists, including Melanchthon and Peter Martyr, followed Martin Luther's lead and established alternative religious institutions, separating themselves from the Catholic Church.²¹ As the *Signory*, the ruling assembly in Renaissance Italy, believed that art was a form of propaganda, Zarlino may have been asked to publish his treatises and compositions as a means of social regulation.²² Zarlino's works were exemplars to counterbalance those of his contemporaries who displayed explicit allegiance to non-Catholic religions; hopefully, Zarlino's compositions would redirect these revolutionaries back to the Catholic Church by

19. Judd, *Reading Renaissance Music Theory*, 248.

20. Grendler, *Culture and Censorship*, 150.

21. Plumb, *The Italian Renaissance*, 150.

22. *Ibid.*, 112.

virtue of his social authority. From this perspective, Zarlino's demonstration of tonal awareness, and his simultaneous disguise of it, was a means of exhibiting his loyalty to the Church.

Zarlino's treatises and compositions were also particularly influenced by the concept of "*imitazione della natura*" (imitation of nature), which was also a driving force of his anamorphosis.²³ According to Armen Carapetyan, this concept was prevalent in the Renaissance and it was the genesis of all arts inasmuch as "human passions are a part of nature."²⁴ These arts did not attempt to recreate the appearance of nature, but rather its "essential qualities," such as eternity.²⁵ Zarlino's *Istitutioni* can be considered an intimation of nature. He states, "the opposite universal forces of love and strife continually combine and separate the four substances—earth, air, fire and water—which is why each actual mixture is a balance and harmony of two separate cosmogonic forces."²⁶ He also addresses the four substances in relation to the harmonic importance of the bass:

And as the Earth is held to be the fundament of all the other elements; so the Bass has such a propriety, which

23. Armen Carapetyan, "The Concept of 'Imitazione Della Natura' in the Sixteenth Century," *Journal of Renaissance and Baroque Music* 1, no. 1 (1946): 47–67.

24. Ibid., 57.

25. Ibid., 50.

26. Zarlino, *Istitutioni*, 10, quoted and translated in Paolo Gozza, ed., *Number to Sound: The Musical Way to the Scientific Revolution* (Dordrecht: Kluwer Academic Publishers, 2000), 11.

sustains, stabilizes, fortifies, and gives support to all the other parts...But as when an Element of the Earth is missing (and this may be possible) which may ruin the good order of things and spoil the worldly and the human Harmony, so when the Bass is lacking, the whole song is filled with confusion and dissonance and everything goes to ruin.²⁷

This explains why Zarlino adopted tonality and treated chords as vertical entities. He promoted this idea by integrating the dialectical meaning of nature. The progression from dissonant to consonant intervals was originally an Aristotelian concept wherein “the Imperfect *by nature* strives for the Perfect.”²⁸ As Edward E. Lowinsky observes, “[In the Renaissance] the wealth of new musical means was born from the overwhelming desire to express and paint in tones the outer world of nature and the inner reality of man.”²⁹ Zarlino used chords to imitate nature, both as a natural order and as an emotional experience, as he believed that this was the function of nearly perfect music

27. Zarlino, *Istitutioni*, Cap. 58, 293–294, quoted and translated in Robert W. Wienpahl, “Zarlino, the Scenario, and Tonality,” *Journal of the American Musicological Society* 12, no. 1 (1959): 38. Note that, according to Bush, the association of the bass and earth does not originate from Zarlino, but Luigi Sentic. Bush, “The Recognition of Chordal Formation by Early Music Theorists,” 237.

28. Carl Dahlhaus, “Ist Rameaus *Traité de l’harmonie* eine Harmonielehre?” *Musiktheorie* 1 (1986): 126, quoted in David E. Cohen, “Harmonic Progression, Directed Motion and Aristotelian Physics,” *Music Theory Spectrum* 23, no. 2 (2001): 146. Emphasis by author.

29. Lowinsky, “Music in the Culture of the Renaissance,” 552.

(Zarlino did not believe that music could surpass the perfection of nature).³⁰

Eternality, as an essential element of nature, may explain Zarlino's frequent references to ancient Greek philosophers, including Plato and Aristotle, in his theoretical treatises. Ostensibly, Zarlino's treatises are mere representationalism, constructing an immortal, miniature replica of the Hellenic world. However, as Peter Burke argues, "Contemporaries [in the sixteenth-century] generally claimed to be imitating the ancients and breaking with the recent past, but in practice they borrowed from both traditions and followed neither completely."³¹ People of the Renaissance thought that a utopian society would arise from social regulation, as discussed by Plato in the *Republic*; Zarlino's retention of modality was one such means of social regulation.³² On closer inspection, however, representationalism is the precondition for his demonstration of individualism, or even mannerism—that is, his adoption of tonality.

Ultimately, Zarlino's belief in God can be seen as an overarching force in his *Istitutioni*. As Claude Palisca states,

30. Zarlino claims that music can excel if it "sia stato buono imitatore della Natura, la quale (quando non è depravata) riduce tutte le cose alla loro perfettione" (is excellent imitator of nature, which (when it is not evil) reduces all things to their perfection). Zarlino, *Istitutioni*, III. Cap. 59, 289 (1573 ed.), quoted in Carapetyan, "The Concept of 'Imitazione Della Natura' in the Sixteenth Century," 61. My translation.

31. Peter Burke, *The Italian Renaissance: Culture and Society in Italy* (New Jersey: Princeton University Press, 1986), 17, 242–243.

32. Paul F. Grendler, "Utopia in Renaissance Italy: Doni's 'New World'," *Journal of the History of Ideas* 29, no. 4 (1965): 479.

“[*Istitutioni*’s] mathematical underpinning and theological overtones won it the acclaim of both the pseudo-scientific and religious.”³³ References to God abound in Zarlino’s writing. For instance, after Zarlino introduced *Scenario* (chord of nature) mathematically, he stated, “Since, in His activities, God had never needed time, the great prophet Moses, in describing the great and wonderful fabric of the world, chose the number scenario.”³⁴ As much as God is the sole determiner of nature, mathematics, and music, Zarlino was perhaps self-conscious of presenting both modality and tonality, as if believing that they were both God’s creations.

Thus, in Zarlino’s theoretical treatises and compositions, anamorphosis encompasses not only modality and tonality, but also personal and social function; individualism and representationalism; art and science; and God and men’s will. The question of modality and tonality, in Zarlino and Cinquecento Italy, is itself an anamorphosis.

33. Claude Palisca, *Scientific Empiricism in Musical Thought* (Princeton: Princeton University Press, 1961), 103.

34. Zarlino, *Istitutioni*, I, 13, 23, quoted in Jairo Moreno, *Musical Representations, Subjects, and Objects* (Bloomington: Indiana University Press, 2004), 39.

Bibliography

- “anamorphosis, n.” *OED Online*. Oxford University Press, March 2015.
<http://www.oed.com/view/Entry/7061?redirectedFrom=anamorphosis>.
- Burke, Peter. *The Italian Renaissance: Culture and Society in Italy*. New Jersey: Princeton University Press, 1986.
- Bush, Helen E. “The Recognition of Chordal Formation by Early Music Theorists.” *Musical Quarterly* 32, no. 2 (1946): 227–243.
- Carapetyan, Armen. “The Concept of ‘Imitazione Della Natura’ in the Sixteenth Century.” *Journal of Renaissance and Baroque Music* 1, no. 1 (1946): 47–67.
- Cohen, David E. “Harmonic Progression, Directed Motion and Aristotelian Physics,” *Music Theory Spectrum* 23, no. 2 (2001): 139–169.
- Crocker, Richard L. “Discant, Counterpoint, and Harmony.” *Journal of the American Musicological Society* 15, no. 1 (1962): 1–21.
- Dahlhaus, Carl. *Studies on the Origin of Harmonic Tonality*. Translated by Robert O. Gjerdingen. Princeton, NJ: Princeton University Press, 1990.
- Gozza, Paolo, ed. *Number to Sound: The Musical Way to the Scientific Revolution*. Dordrecht: Kluwer Academic Publishers, 2000.
- Greenblatt, Stephen. *Renaissance Self-Fashioning: From More to Shakespeare*. Chicago: University of Chicago Press, 1980.
- Grendler, Paul F. “Utopia in Renaissance Italy: Doni’s ‘New World.’” *Journal of the History of Ideas* 29, no. 4 (1965): 479–494.

Nota Bene

- . *Culture and Censorship in Late Renaissance Italy and France*. London: Variorum Reprints, 1981.
- Gruber, Albion. “Mersenne and Evolving Tonal Theory.” *Journal of Music Theory* 14, no. 1 (1970): 36–67.
- Holmes, George. *The Oxford Illustrated History of Italy*. New York: Oxford University Press, 1997.
- Hunt, William. *History of Italy*. London: Macmillan, 1908.
- Judd, Cristle Collins. *Reading Renaissance Music Theory: Hearing with the Eyes*. Cambridge: Cambridge University Press, 2000.
- . “‘To Discourse Learnedly’ and ‘Compose Beautifully’: Thoughts on Gioseffo Zarlino, Theory, and Practice.” *Society for Music Theory* 19, no. 3 (2013): 1–15.
- Lester, Joel. “Root-Position and Inverted Triads in Theory around 1600.” *Journal of the American Musicological Society* 27, no. 1 (1974): 110–119.
- . “Major-Minor Concepts and Modal Theory in Germany, 1592–1680.” *Journal of the American Musicological Society* 30, no. 2 (1977): 208–253.
- Lowinsky, Edward Elias. “Music in the Culture of the Renaissance.” *Journal of the History of Ideas* 15, no. 4 (1954): 509–553.
- Martines, Lauro. *Power and Imagination: City-States in Renaissance Italy*. New York: Alfred A. Knopf, 1979.
- Moreno, Jairo. *Musical Representations, Subjects, and Objects*. Bloomington: Indiana University Press, 2004.

- Muir, Edward. *The Culture Wars of the Late Renaissance: Skeptics, Libertines, and Opera*. Cambridge: Harvard University Press, 2007.
- Palisca, Claude Victor. *Scientific Empiricism in Musical Thought*. Princeton: Princeton University Press, 1961.
- . “Zarlino, Gioseffo.” Grove Music Online. Oxford Music Online. Oxford University Press. Accessed April 2, 2016, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/30858>.
- Plumb, John Harold. *The Italian Renaissance*. New York: Mariner Books, 1985.
- Riemann, Hugo. *Geschichte der Musiktheorie*. Leipzig: Hesse, 1898.
- Rivera, Benito V. “The ‘Isagoge’ (1581) of Johannes Avianius: An Early Formulation of Triadic Theory.” *Journal of Music Theory* 22, no. 1 (1978): 43–64.
- . “Harmonic Theory in Musical Treatises of the Late Fifteenth and Early Sixteenth Centuries.” *Music Theory Spectrum* 1 (1979): 80–95.
- Thomson, William. “The Problem of Tonality in Pre-Baroque and Primitive Music.” *Journal of Music Theory* 2, no. 1 (1958): 36–46.
- Vicentino, Nicola, and Lowinsky, Edward E. *L'antica Musica Ridotta Alla Moderna Prattica*. New York: Bärenreiter, 1959.
- Wienpahl, Robert W. “Zarlino, the Scenario, and Tonality.” *Journal of the American Musicological Society* 12, no. 1 (1959): 27–41.

Nota Bene

Zarlino, Gioseffo. *The Art of Counterpoint: Part Three of Le Istitutioni Harmoniche* [1558]. Translated by Guy A. Marco, and Claude V. Palisca. New Haven and London: Yale University Press, 1968.