Review of Lionel Pike, *Hexachords in Late-Renaissance Music* (Aldershot: Ashgate, 1998).

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ABSTRACT: Attempting to appreciate the layers of musical meaning that would be apparent to late-Renaissance expert listeners, Dr. Pike contributes to an interpretation of the repertory of that time that takes into account the meaning of the texts set to music, the circumstances of composition and performance, the musical structure, and the listeners' expectations. However, Dr. Pike's hypothesis of the Guidonian hexachord as a diatonic segment with cognitive implications for late-Renaissance composers and listeners overlooks important aspects of the status of hexachord as described in Renaissance music theory and raises questions about the relationship between hexachord, mode, and counterpoint.

[1] How did late-Renaissance composers use their music to communicate with their audiences? Was there a set of shared aural expectations between composers and listeners that governed the relationship between text and music, the inner dynamics of the individual parts within a polyphonic complex, and even the perception of intervals, counterpoint, and modes? In which specific ways did the various levels of expertise that 16th-century listeners brought to a musical performance affect their understanding of a madrigal by Marenzio or Wert? These are some of the general questions that inform Lionel Pike's *Hexachords in Late-Renaissance Music*. The main goal of this study is to re-appreciate some of the techniques and procedures by which the particular "language" of late-Renaissance music was able to convey meaning from composers to listeners (or, to use Dr. Pike's terms, from an "encoder" to a "decoder" [p. 1]). The study is addressed to those modern readers/listeners who are already trained in Renaissance music and wish to acquire a fuller understanding of this repertory: "The present-day listener has lost touch with some of the important elements of the language of late-Renaissance music: changing patterns of education and changes in musical style have led to the disappearance of at least two fundamental elements—rhetoric and the hexachord—which are essential to a true understanding of this music. The present book is concerned with the second of these elements" (p. 1).

[2] The book is articulated into five main chapters preceded by a general introduction. The first two chapters, "Voces Musicales I" and "Voces Musicales II," illustrate basic hexachordal techniques, such as the *soggetto cavato*, the *inganno*, and the practice of using different hexachords for expressive purposes ("hexachord color"). The two following chapters, "Emulation and Parody I" and "Emulation and Parody II," compare different madrigals set to the same text, such as "Mia benigna fortuna" (by Arcadelt, Lasso, Rore, Wert, and Marenzio) and "Cruda Amarilli" (by Wert, Marenzio, Pallavicino, and

Monteverdi), in an attempt to understand how certain composers utilized solmization for the purpose of "emulating" or "outdoing" the works written by other composers before them. The final chapter, "Sorrow and Secularism," contains analyses of vocal music by Tallis ("Lamentations") and keyboard music by John Bull, Alfonso Ferrabosco II, Byrd, Sweelinck, and others.

[3] Dr. Pike is particularly concerned with describing what he calls the "More Abstruse Uses of the System" (p. 67), namely those advanced hexachordal techniques that composers invented for the delight of restricted circles of aristocratic amateurs (the *cognoscenti*), while also trying to appeal to less educated ears (p. 12). For example, the section "Marian symbolism" (in "Voces Musicales II") suggests that motivic procedures in the motet "Gaude Maria virgo" by Peter Philips (1612) associate the Virgin Mary with the moon (*luna*), a symbolism which is shown to have theological and iconographical resonances (pp. 73–80). A later section discusses Gesualdo's "Moro lasso" as an extreme example of the use of "The [Hexachordal] Circle of Fifths" in order to convey the dramatic intensity of the text (pp. 89–92). Finally, Dr. Pike interprets several instances of "hexachordal inversion" in Marenzio's "Cruda Amarilli" as a deliberate "upsetting of the hexachord system" which would illustrate "the topsy-turviness occasioned by the suffering" in the text (pp. 142–150).

[4] As these necessarily condensed notes indicate, musical rhetoric actually figures prominently in *Hexachords in Late-Renaissance Music*, in spite of the author's own statement of intentions to the contrary. To Dr. Pike's credit, he analyzes musical structure as a way to appreciate the meaning(s) of certain compositions and repertories (primarily, Italian secular music and British keyboard music) viewed as historically situated acts of communication. Thus, Dr. Pike deals with music as rhetoric often in an original and profound way. For example, a close analysis of the texts of Tallis's "Lamentations" leads him to interpret these pieces as devotional music to be performed in the privacy of English Catholic houses. Focusing more specifically on text/music relations, Dr. Pike captures the rhetorical sense of the opening episode of the second "Lamentation", which begins on the word "Gimel" (a Hebrew letter), by acutely observing that "The letter becomes like an illuminated capital in a manuscript, set off from the rest of the text by its colourful treatment" (p. 187). In a similar manner, Dr. Pike's discussion of various settings of "Cruda Amarilli" reveals some of the subtle ways in which these settings dialogue and "compete" with one another by reusing some of the same melodic materials while experimenting with voice leading and dissonance treatment.

[5] Paradoxically, Dr. Pike's claims are more problematic when he deals with the subject that he intentionally sets out to explore in his book, namely the relevance of hexachordal structures in polyphonic music written around 1600, as the following discussion will show.

[6] It is clear from the very title of this study that Dr. Pike subscribes to a "strong" view of the Guidonian hexachord, thus following a line of argument that has been proposed in the last thirty years or so by scholars such as Gaston Allaire, Richard Crocker, and Eric Chafe, among others. [(1)] In brief, Dr. Pike interprets the six syllables as a fundamental diatonic structure with cognitive implications for Renaissance musicians and listeners. In the introduction to the book, for example, Dr. Pike presents his study as "dealing with the period just prior to the disappearance of the hexachord as a force for the organization of musical structure" (p. 12); in several later passages, the hexachord is presented as "fundamental to the learning of music" (for instance, at pp. 13, 15, and 172). Because of this, various hexachordal procedures such as mutation and the *soggetto cavato* "became second nature to any musician of the time as the notes of the scale are to us today " (p. 15).

[7] A dose of skepticism is in order here, because it is not clear on what evidence some of these assertions rest. Indeed one wishes that Dr. Pike had examined the musical treatises with the same attention that he dedicates to the lyrics of "Cruda Amarilli" and "Mia benigna fortuna." The occasional references to a handful of theorists, such as Vicentino, Zarlino, Galilei, Artusi, and Morley, are painfully inadequate to support the nature and the scope of Dr. Pike's hexachordal theories, which call for detailed surveys of topics such as hexachordal mutation and the relationship between the seven letters-names and the six Guidonian syllables, as understood in the 16th century. Ironically, Dr. Pike describes Karol Berger's *Theories of Chromatic and Enharmonic Music in Late 16th-Century Italy* (Ann Arbor: UMI, 1976 and 1980) as providing "a splendid treatment of the theorists of the period" (p. 17, footnote 24), although Berger's study is not concerned at all with the issue of hexachordal solmization.

[8] More importantly, the role of the hexachord within the musical systems described by Renaissance theorists—even those

mentioned by Dr. Pike—is a matter of debate: Zarlino, for example, presents the gamut with the seven hexachords in Book II, ch. 30, of his *Istitutioni harmoniche* (1558, 1573), but in the same chapter he also praises Guido for introducing the seven letter-names (A to G) that reflect octave equivalence. Furthermore, Zarlino hardly refers to any Guidonian syllable at all in the sections of the *Istitutioni harmoniche* dedicated to counterpoint (book 3) and the modes (book 4), preferring instead to refer to intervals species (such as *quarta, quinta, diapason, diatessaron*) when dealing with counterpoint and to letters alone—with occasional reference to Greek pitch terminology, such as *trite synemmenon*—when dealing with mode (he writes, for instance, that "The eleventh mode comes into being from the third species of diapason, C to c, mediated harmonically by the note G").[2] On the other hand, in his *Dimostrationi harmoniche* (1571) Zarlino did renumber the modes beginning with those ending on C, instead of D, in such a way as to mirror the order of the Guidonian syllables within the hexachord.[3] In a similarly ambiguous way, in his *Dodecachordon* (1547) Glareanus customarily refers to the diatonic species of fourths and fifths with Guidonian syllables, but he also indicates the pitch boundaries of the twelve modes using either the seven letters only, or the Greek pitch terminology (particularly in book 2, chapters 1–37). Furthermore, Glareanus often refers to pitches by means of single letters in his numerous commentaries of monophonic and polyphonic pieces (respectively in the chapters mentioned above and in book 3, chapters 13–24).[4] On the other hand, Glareanus also documents the presumably common practice of naming the modes only with the Guidonian syllables ut, re, and mi.[5] Thomas Morley, in his *A Plaine and Easie Introduction to Practicall Musicke* (1597), explains the nuts and bolts of Guidonian solmization at the very beginning of "The First Part" of the treatise, which is significantly titled "Teaching to Sing," although the hexachordal syllables once again play only a minimal role in the lengthy "Second" and "Third" parts of the treatise dedicated to the teaching of various compositional techniques.[6] Morley *does* refer to the hexachordal syllables in these later sections too, but these syllables—in the context of Morley's treatise—seem to function as conventional attachments to letter-names, rather than as signposts of some underlying hexachordal structures. Furthermore, it is interesting to notice that in the "Annotations" to the "First Part" of his treatise Morley inserts a passage that is slightly critical of the Guidonian system. He writes that Guido "added a fifth tetrachord [to the Greater Perfect System], including in the scale (but not with such art and reason as the Greeks did) seven hexachords or deductions of his six notes." According to Alec Harman, what Morley dislikes about the Guidonian system is the "uneven overlap" of the seven hexachords when compared with the linear simplicity of the Greater Perfect System.[7] Finally, it could be argued that the Guidonian hexachord plays an all but marginal role in the writings of Vicentino and Artusi.

[9] But in spite of the unclear status of the hexachord in Renaissance theory, one may still acknowledge the possibility that the Guidonian syllables, as Dr. Pike argues, could have been used by composers as "a means of communication" with the performers, as well as with those listeners who were at least minimally familiar with the system.

[10] A good example of the way in which such a communication would take place is provided by the opening measures of Marenzio's madrigal "Mi fa lasso languire," where the textual incipit is made to correspond to the Guidonian syllables mi–fa–la–sol–la–mi–re:

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mi fa la    sol la    mi   re
E   F  a    G♯  a      E    D
Mi fa las - so  lan - gui - re
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Upon singing (or simply hearing) the notes E–F–a–G♯–a–E–D, performers and (expert) listeners would immediately think of (thus somehow also "hear") the syllables mi–fa–la–sol–la–mi–re and appreciate the wit of the correspondence between these syllables and the first verse of the madrigal. In this way, the Guidonian hexachord adds an extra layer of meaning to the musical setting of a poetic text. For Dr. Pike, this technique of text setting by means of "hexachord sounds" was more common than scholars thus far have suspected, and many of his examples are dedicated to illustrating this point.

[11] It is of course true that Renaissance musicians enjoyed "extracting" musical subjects from the syllables of the text, as several compositions with *soggetti cavati* or *fatti sulle vocali* demonstrate. In these cases, however, the syllables of the text are normally made to correspond with the most obvious solmization of the passage, so as not to leave any doubt about the composer's intentions. Unfortunately, Dr. Pike extends this kind of interpretation to cases in which the correspondences between textual syllables and hexachordal sounds appear to be all but accidental. Even more problematic are those cases in

which Dr. Pike takes the textual syllables to be the primary indicator of the hexachordal position of the corresponding notes. For example, Dr. Pike's solmization of the opening of Frescobaldi's "Se la doglia e'l martire" (1608) is as follows:

CANTUS

sol   la

a   b   c   c   b   a   G♯

Se   la   do - glia e'l mar - ti - re

ALTUS

sol la

E   F♯   G   G   F   E   E

Se   la   do - glia e'l mar - ti - re

Here Dr. Pike is concerned with associating the article "la" of the text with the "la" of the hexachord. As a consequence, he reads the first two notes of the Cantus as part of a D hexachord (D–E–F♯–G–A–B), presumably followed by a mutation to the G hexachord (G–A–B–C–D–E); in a similar way, he interprets the first two notes of the Altus as part of an A hexachord (A–B–C♯–D–E–F♯) that soon mutates into the C hexachord (C–D–E–F–G–A) on the first G. Needless to say, this strategy flies in the face of customary rules of solmization. Singers were taught to select the correct hexachord on the ground of the intervals to sing, not of the syllables to pronounce; in other words, reducing the number of mutations was no doubt preferable to maximizing the concordances between the two kinds of syllables—indeed the choice was not even an issue. One of the most common rules of solmization, for example, dictated that singers choose the syllables ut, re, and mi for singing ascending intervals and fa, sol, la for singing descending ones. It is simply not a good idea to solmize the first note of an ascending scale on sol or la—no matter what the corresponding textual syllable is—because doing so forces a singer to perform unnecessary mutations. By the same token, it is unlikely that performers would start Marenzio's (or Monteverdi's) "Cruda Amarilli" on ut simply because of the assonance with "Cru-," as Dr. Pike suggests (pp. 143; 163). Instead, it seems plausible to assume that these singers, having internalized the standard rules of solmization, would instinctively select one of the descending syllables, since all of their parts begin with a descending interval.

[12] But the analysis of Frescobaldi's madrigal is problematic in other ways. Dr. Pike suggests that, by introducing "hexachords on the sharp side of durum—on D and A," Frescobaldi provides a musical image of the "harshness of 'martire'." Dr. Pike also speculates that "The performers are unlikely to miss the point, though it is doubtful if non-performing listeners (should there be any) would be likely to understand." Indeed, the ability to appreciate this musical image of "harshness" seems to rest on some notion of absolute pitch, i.e., on the listeners' realization that the first two notes of the Cantus belong to the hexachord on D and not, for example, to the one on C. Even acknowledging this possibility, I see no reason to believe that the second syllable of the text would lead performers and listeners to mentally process the first two notes of their parts as belonging to a diatonic structure that begins a fifth below. It seems plausible, for example, that an hexachordally trained listener would understand the first two notes of the Altus (E–F♯) as the re and mi of the D hexachord established by the Cantus, again following the principle of economy of mutation.

[13] To give Dr. Pike's solmization the benefit of the doubt also raises the issue of the significance of the rather different hexachordal changes that take place in the two parts after the second note: whereas the Cantus mutates to the next adjacent hexachord on the "flat" side, on G, the Altus mutates from the three-times-durus A hexachord to the natural C hexachord (perhaps a case of "remote mutation?"). Thus, the theory that hexachords possessed "strong" cognitive implications for Renaissance performers and listeners soon forces us to reconsider the very notion of polyphonic imitation: can we still maintain that the segment E–F♯–G in the Altus imitates the segment A–B–C of the Cantus at the fourth below, if it turns out that the two head-motives mutate to different levels of the hexachordal circle of fifths?

[14] Dr. Pike should have considered the possibility that Frescobaldi used counterpoint, rather than the melodic shape of the individual parts, in order to illustrate the "harshness of 'martiri'." This alternative may sound obvious, but it is hard not to associate the double dissonance (seventh + dim. fifth) at the incipit of measure 2 and the clash of second in the middle of

the same measure with the "pain and torture" of the text, just as it is difficult not to believe that at least the educated listeners of the Renaissance would have appreciated the musical significance of such events. Indeed, the repercussions of two dissonant intervals on the slightly awkward syllable "-glia e'l" in measure 2—the tongue ever pushes on the aching tooth—make Frescobaldi's strategy all the more clear.

[15] To emphasize the structural role of counterpoint, however, means necessarily to downplay the cognitive significance of the Guidonian hexachord. Taken as basic diatonic structures, the two systems can hardly have been equally relevant to Renaissance listeners because they operate in two different kinds of musical space and thus may have triggered different kinds of sound processing. On the one hand, the rules of counterpoint operate in a cyclical space that stretches without seams from the lowest to the highest pitch (and vice versa), and that is expressed by the seven letter names. From the point of view of this musical space, the hexachord is an all but marginal element. Indeed, the labels customarily attached to it by medieval and Renaissance theorists when dealing with intervals and counterpoint (*diapente cum tono, diatessaron con ditono, exaden maior*) reflect its status as a derivative segment, less perfect than the octave, the fifth, and the fourth.

[16] On the other hand, the Guidonian system outlines primarily a segmented musical space where each pitch is assigned to one or more overlapping and discrete sets of six elements. In this case it is the octave that appears as a derivative segment because two pitches an octave apart belong necessarily to two different hexachords (though they may still correspond to the same syllable). Instead, as Dr. Pike points out, the determining factor in the Guidonian system is the central position of the semitone mi–fa within each segment. It is true that the strong presence of the Guidonian syllables in medieval and Renaissance music treatises seems to indicate that the centrality of the semitone within the hexachord must have had unequivocal implications for contemporary listeners. To use Dr. Pike's words, "The symmetry of the system, with each hexachord revolving around its most characteristic interval, must have appealed strongly to the Medieval and Renaissance mind" (p. 13). However, the hexachordal space is also, in a way, cyclical, although each cycle (say, from mi to mi) begins in one segment and ends in another and encompasses only four or five *voces*. Thus it remains to be determined whether for Renaissance listeners the symmetry and the *length* of the hexachord were cognitively more relevant than the *position* of the hexachords within the system of *musica recta* (a fourth, a fifth, or an octave from each other), or rather the other way around. In relation to this question, it should be noted that Guidonian solmization was a practical application of the medieval theory of *affinitas* at the fifth between the pitches of the gamut. As to the cognitive weight of the theory of affinity at the fifth, it was probably not a heavy one, to judge from chapter 9 of Guido's *Micrologus*, titled "Also on the resemblance of notes, which is perfect only at the diapason."[8]

[17] Because one of Dr. Pike's primary interests is to show how late-Renaissance composers used solmization to illustrate the meaning (or the sound) of the text, his analyses tend to focus on the horizontal, rather than the vertical, aspect of this repertory. Occasionally, he does take into account the contrapuntal relations between the voices (for example, in his discussion of various settings of "Mia benigna fortuna" and "Crudele acerba" by Arcadelt, Rore, and Lasso)—again for the main purpose of understanding the music as an image of the text. In these pages, however, the presence of the hexachord as a "basic structure" seems to fade away, substituted by a more conventional focus on the dynamics of consonance and dissonance or on mode. A more detailed discussion of how counterpoint and the modes relate to the hexachord, conceived as a basic diatonic structure, would have clarified the ways in which the two horizontal and vertical approaches pursued in the book support each other.

[18] There are several points in the book at which such a discussion would have been appropriate. In the introduction, for example, the reader will find frequent references to the differences between modality and tonality and to the role of chromaticism in the dissolution of the modal and the hexachordal systems, but there is no treatment of the functional relation between the modes and the Guidonian *voces* (p. 3). In a similar way, the later section on "Hexachords" seems to have no bearing on the previous presentation of the modal system (pp. 13–16). Yet the very nature of Dr. Pike's argument warrants a discussion of these functional relations: does mode establish hexachord, or does hexachord establish mode, and how? Is one necessarily the correlate of the other, and why? How do hexachordal scale degrees relate to modal scale degrees? For example, how important is it that in the cases of the Protus and Deuterus modes the *finalis* does not fall on the first degree of the hexachord? How important is it that it does in other modes? How significant was the fact that at least one of the modal constituents, the second species of fifth E–b, "embodied" an hexachordal mutation? Finally, a discussion is needed

on the extent to which a melodic structure such as hexachord can account for the polyphonic complex of a piece—a problem that scholars have often raised about mode.

[19] To be sure, Dr. Pike does explore hexachord in the context of mode in the section "Hexachord Color," in the chapter "Voces Musicales I," where he argues that late-Renaissance composers were able to broaden their tonal palette by transposing the hexachord either to the "mollis" or to the "durus" side in an attempt to make their music more suitable to express the emotional colors of the text. We are told that, because the molle hexachord was "colored" by the B flat, "it was thought of as 'soft' or 'sweet', and so it was particularly appropriate for the illustration of sweetness or similar ideas" (p. 32). Later in this section Dr. Pike explains that "All transposition of sixteenth-century polyphonic modes was by a fourth up (adding one flat to the key signature) or by a seventh up (adding two flats): this accurately reflects the fundamental notes of the three hexachords" (p. 33).

[20] The idea of "hexachord color," though, is problematic. It is not clear which theorists Dr. Pike has in mind when he argues that the flat hexachord "was thought of" as "'soft' or 'sweet'," but the fact remains that theoretical discussions of musical affects and the relationship between text and music in the Renaissance are centered on mode, not on hexachord. I am aware of no music theorist who directly links the "three properties of singing" (*per natura, per B quadro*, and *per B molle*, which modern scholars—somewhat erroneously—are used to calling natural, soft, and hard hexachords) to the expression of "softness," "harshness," and the like. Equally unsubstantiated is the claim that common patterns of transposition in the Renaissance follow a hexachordal scheme. On the one hand, the very notion of "hexachordal transposition" is not easily found in musical treatises from the Renaissance, if by "hexachord" one means a diatonic segment of six pitches, rather than a series of six pitch names. On the other hand, theorists quite understandably presented modal transposition and modal change as the result of a swapping of the constituent diatonic species, not—most emphatically—in hexachordal terms. In some cases, humanistically inclined theorists would discuss these issues in reference to the Greek tetrachords. Book IV, ch. 16, of Zarlino's *Istitutioni harmoniche*, for example, carries the following characteristically verbose title: "Whether by removing the tetrachord diezeugmenon [B–C–D–E] from any composition and putting in its place the synemmenon [A–B♭–C–D] while the other tetrachords remain immovable, one mode can be changed into another." It should be mentioned that not a single Guidonian syllable appears either in this chapter or in the following one on the "Transposition of Modes."

[21] Dr. Pike neglects to mention that mode maintained its character and affect regardless of transposition, although it is also true that composers would introduce flat or sharp sonorities for affective or rhetorical reasons—such as madrigalisms—as illustrated in some of Dr. Pike's analyses. Certain specific notes, or chords, may have signalled a particular affect even when considered in isolation; still, much of the affective flavor of these notes or chords depends on the intervallic or harmonic context in which they occur. Once again, Zarlino is able to cast some light on this issue. In the famous chapter where he divides the fifth to generate the "major" and the "minor" chords, he is careful to point out that the different character of the two combinations is given not by the nature of the intervals involved, but rather by the *position* of the two thirds within the fifth. It is worth quoting Zarlino's passage in full: "While the extremes of the fifth are invariable and always in the same ratio, . . . the extremes of the thirds are placed differently within the fifth. I do not mean that such thirds differ in proportion but in location . . . when the major third is below, the harmony is gay, and when it is above, the harmony is sad. *So from these diverse positions of the thirds placed in counterpoint between the extremes of the fifth—or above the octave—comes harmonic variety.*" [(9)] It seems to me that Zarlino's argument can easily be applied to Dr. Pike's theory of "hexachordal color." Granted that the hexachord (read: major sixth) may contain pitches that are "colorful" *per se*, it is also important to consider its position within the octave. In other words, it seems that the affective connotations of the "molle hexachord" depend a great deal on whether the mi–fa semitone (A–B♭) falls between the first two pitches of the mode, or rather between the third and fourth pitches—nor is it recommended to disregard the location of the other semitone within the octave.

[22] Thus we are confronted with the same problem that I have already discussed above, namely, how to accommodate Dr. Pike's "strong" view of the hexachord as a basic cognitive structure with other normative systems that took the octave as their ruler, such as mode. One cannot emphasize the latter without relegating the former to a marginal role. Yet too often Dr. Pike gives the impression that he is trying to have it both ways. In his analysis of J.P. Sweelinck's keyboard fantasy on the theme *Ut, re, mi, fa, sol, la a 4 voci*, for example, he claims that the piece is based "around the F hexachord (F major), though a number of statements move to naturale" (p. 208). But the concepts of "F hexachord" and "F major" seem mutually

exclusive, rather than interchangeable: to argue that the piece is based "around the F hexachord" implies that the pitch E is somehow outside the main structural element, whereas this is obviously not the case from the perspective of a reading of the piece in "F major," "transposed Ionian," or "fifth mode." In the ensuing discussion, Dr. Pike highlights Sweelinck's ability in creating a sense of climax by carefully balancing ascending and descending statements of the hexachords on C, F, and B♭ with frequent overlaps. From a tonal point of view, however, it is also interesting to observe that these statements of the subject occur in ever changing contrapuntal contexts, sometimes starting from the fifth of the mode, sometimes on the finalis. Furthermore, the subject in its various expositions may be articulated sometimes as a *diapente cum tono*, sometimes as a *tonus cum diapente*, and sometimes even as a *diatessaron con ditono*. Again, the structural weight of the hexachordal subject cannot be considered independently of the *position* of that subject within the octave. Whereas contemporary listeners would certainly understand each presentation of the subject as beginning on some ut or la, it is difficult not to imagine that they would also hear those subjects as modally located on, say, the final or the confinal. Dr. Pike seems to believe that a Renaissance listener, upon hearing ut on the fifth of the mode, would still process that sound as the first scale degree of the corresponding hexachord. However, we cannot rule out the possibility that some listeners would assign cognitive priority to that pitch heard as the fifth of the mode, while realizing that it also coincides with the lowest note of the subject.

[23] In conclusion, Dr. Pike's study—in spite of the valuable insights into the repertory that it offers—is problematic not only because the hypothesis of a "strong" hexachord creates more problems than it resolves, but also because of a more general methodological weakness: in his attempt to capture what is "hidden," "abstruse," and "sophisticated" in late-Renaissance music by relying almost exclusively on unmediated analyses of musical scores, Dr. Pike reaches conclusions that too often seem self-confirming. On the one hand, the subtleties of musical structure that he brings to light through musical analysis are to account for the experience of listening of the Renaissance *cognoscenti*; on the other hand, unconfirmed hypotheses about the listening skills and mental musical processes of the *cognoscenti* are supposed to justify the validity of the analyses. But the historical question of the relevance of Guidonian solmization for Renaissance composers cannot be answered satisfactorily through music analysis alone; instead, a much wider perspective is required, in which a variety of historical, theoretical, and cognitive issues about the origin, transmission, and function of the Guidonian system are brought to bear on one another. In particular, the often made facile equation of hexachord as a pedagogical tool and hexachord as a cognitive structure needs to be placed under intense critical scrutiny. It may turn out that hexachord, far from being the key element of a distinct musical language, was little more than a local inflection within the long history of Western diatonic music.

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Footnotes

1. Gaston Allaire, *The Theory of Hexachords, Solmization and the Modal System* (American Institute of Musicology, 1972); Richard Crocker, "Perche Zarlino diede una nuova numerazione ai modi," *Rivista Italiana di Musicologia* 3 (1968): 48–58; id., "Hermann's Major Sixth," *Journal of the American Musicological Society* 25 (1972): 19–37; Eric Chafe, *Monteverdi's Tonal Language* (New York: Schirmer, 1992). See also the contributions by Christian Berger, *Hexachord, Mensur und Textstruktur: Studien zum franzoesischen Lied des 14. Jahrhunderts* (Stuttgart: F. Steiner, 1992) and David Crook, "Tonal Compass in the Motets of Orlando di Lasso," in *Hearing the Motet: Essays on the Motet of the Middle Ages and Renaissance*, ed. Dolores Pesce (Oxford: Oxford University Press, 1997), pp. 286–306.
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2. Gioseffo Zarlino, *On the Modes*, Part Four of *Le Istitutioni harmoniche*, 1558, trans. Vered Cohen (New Haven: Yale University

Press, 1983), p. 83. For Zarlino's theory of counterpoint, see *The Art of Counterpoint*, Part Three of *Le Istitutioni harmoniche*, 1558, trans. Guy A. Marco and Claude Palisca (New York: Norton, 1968).
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3. On this topic, see R. Crocker, "Perche Zarlino," cited in footnote 1.
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4. Heinrich Glarean, *Dodecachordon*, trans. Clement Miller (American Institute of Musicology, 1965), pp. 103–205; 247–270. Thus, when Dr. Pike argues that "notes were known by their solmization names rather than by letters (though sometimes a letter-name for a note was prefixed—E la mi, or A la mi re, for example)," he disregards those theorists who customarily refer to diatonic species and/or individual pitches with letters only. See, for example, the widely influential *Lucidarium* of Marchetto of Padua (ca. 1317), Johannes Ciconia's *Nova musica* (ca. 1410), Johannes Gallicus' *Ritus canendi* (ca. 1460), in addition to the works by Zarlino and Glareanus mentioned above.
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5. See Cristle Collins Judd, "Modal Types and *Ut, Re, Mi* Tonalities: Tonal Coherence in Sacred Vocal Polyphony from about 1500," *Journal of the Aerican Musicological Society* 45.3 (1992): 428–467.
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6. These parts carry the titles "Treating of Descant" and "Treating of Composing or Setting of Songs."
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7. Thomas Morley, *A Plaine and Easie Introduction to Practicall Musicke* (London, 1597), edited by Alec Harman with a foreword by Thurston Dart (London: Norton, 1973), p. 104.
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8. Hucbald, Guido, and John on Music: Three Medieval Treatises, trans. Warren Babb, ed. with introduction by Claude V. Palisca (New Haven: Yale University Press, 1978), p. 65.
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9. Zarlino, *The Art of Counterpoint*, pp. 69–70 [emphasis mine].
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