

*Gendering the Semitone, Sexing the Leading Tone: Fourteenth-Century Music Theory and the Directed Progression**

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Johannes, the eleventh-century glossator of Guido of Arezzo, is the earliest of several theorists who indirectly associate the semitone with cross-dressing, using a Vergilian citation about Phrygian men. Taking this as a starting point, this paper explores the gendered nature of sub-tonal intervals. The femininity of the semitone is initially a theoretical commonplace drawn from Greek antiquity, but in the context of medieval antifeminism on the one hand and the new placement and tuning of semitones afforded by the directed progression on the other, the ethical precariousness of *ars nova* music leads a number of music theorists to highly gendered and revealing discussions of their own contemporary musical practices. This paper discusses the theoretical positions of Marchetto of Padua and Johannes Boen in the context of the gendered discourse that surrounded intervals smaller than a tone. It can be argued that fourteenth-century counterpoint represents a point of origin for music-theoretical associations between chromaticism, exoticism, femininity and the sexually alluring East.

Keywords: Medieval Music Theory, Gender, Leading Tone, Semitone, Orientalism

ONE OF THE MOST BASIC AND PRACTICALLY USEFUL early tasks in Western music theory was to theorize the division of the pitch continuum into discrete steps. The intervals that fixed the notes within the octave were all predicated on integer ratios expressed using the tetrad 12:9:8:6, which was commonly reported as having been discovered by Pythagoras. This tetrad contains ratios that give the intervals of the octave (12:6 = 2:1), the fifth (9:6 or 12:8 = 3:2), the fourth (8:6 or 12:9 = 4:3), and the difference between these, the tone (9:8). All of these ratios

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are of a kind known to Pythagorean mathematics as “superparticular” (or *epimere*), that is, their ratio is $x+1:x$.¹ However, neither the fourth nor the fifth could be subdivided entirely into whole-tone steps; the ratio-based mathematics of the octave thus demanded the presence of a step smaller than a tone. As the square root of a superparticular ratio is not a ratio of two whole numbers this could not be literally half a semitone and remain within the ratio-based mathematics of medieval music.²

In the fourteenth century, a change in musical style meant that the semitone became a fundamental contrapuntal resource. The mid-fourteenth century theorist Johannes Boen

1 See Mathiesen 2002 and Nolan 2002.

2 This was known to the early Pythagoreans and, through Martianus Capella and Boethius, to the Middle Ages. See Wasserstein 1958, 173, Friedlein 1867, III.1–4 and Boethius 1989, 88–95.

is at pains to explain why a whole tone is divided into unequal parts in human music-making:

But it is proved by experiment that if there were an intermediate string that was to AK as GK was to it [i.e., on a monochord, giving a division of the tone into two equal parts], its sound would not constitute a degree compared with that of the other strings, since up to the present such a sound has not given pleasure, at least when produced by us, who stand by the diatonic genus (about the song or harmony of the heavenly bodies and angels or birds we do not know how to guess).³

The implication of Boen's disclaimer is that equal semitones, not being proper to the diatonic genus, are not proper to human music-making, but might conceivably belong to other musics, whether to that of the celestial spheres or to the other non-human singing creatures that inhabit the superlunary (the angels) and sublunary zones (the birds) respectively. As we shall see below, Johannes Boen can be seen as, at least in part, some kind of apologist for the novel successions of melodic semitones that resulted from contemporary practices of *musica ficta*. Other theorists were not so equivocal, frequently using terms inherited from antique Greek theory which, although only the diesis is actually gendered feminine in grammatical terms, imply that music rich in intervals smaller than a tone is effeminate, effeminizing and, by extrapolation, of a morally dubious nature. Because of the inadmissibility of an equal division of the tone, semitones were forced to be of different sizes. This suspicion was even focused on the note B \flat in chant theory, which was seen as soft, less regular, round in shape, lascivious, and even dangerously sweet.⁴ This perhaps surprising metaphorical

association between femininity and the semitone can be seen, for example, in the way the prefix "semi" modifies the word "tone." Many authors feel compelled to justify the use of the prefix "semi" to mean something other than "half," explaining instead that it means "incomplete." Johannes, the eleventh-century glossator of Guido of Arezzo, is the earliest of several theorists who indirectly associate the semitone with cross-dressing, as he explains that the semitone is so called:

because it is not a full tone but an imperfect one, not, as some ignorant people say, because it is exactly half of a whole tone. Thus Vergil speaks of *semiviri Phryges*—that is, incomplete Phrygian men—because they garb themselves like women.⁵

These cross-dressed men are male in body but female in dress and thus incompletely male in appearance. Vergil means that they are eunuchs, but it is difficult to know whether this implication was present in medieval texts.⁶ Certainly the men are viewed as "effeminate" in so far as they look—in dress at least—like women, and also because women were, by the Aristotelian definition prevalent in the later Middle Ages, incomplete men. The *Summa musice* (c. 1300) makes a similar statement, citing Vergil and Statius as authorities.⁷ In the fourteenth-century Gobelinus Person also explains "semi" using Vergil's *semiviri Phryges*, and the theorist Guy de Saint Denis combines the Vergilian quotation with an earlier justification, Martianus Capella's fifth-century example of the semivowel, which had been used in the ninth century by

commentator on this treatise and the theorist Johannes (see van Waesberghe 1955, 137; van Waesberghe 1950, 60 and van Waesberghe 1957, 137). She posits the origin of this in the association of the planet Venus with the Greek note corresponding to the medieval note B \flat , as reported in Boethius and repeated by many later theorists.

3 Translation by Leofranc Holford-Strevens; see Frobenius 1971, 44: "Sed ad experientiam probatur, si aliqua esset corda media que se haberet ad cordam AK sicut GK ad illam, quod sonus illius non faceret gradum aliquem comparatus ad sonum aliarum cordarum, quia usque ad hec tempora non placuit talis cantus saltem a nobis prolatus, qui dyatonico generi insistimus (de cantu seu armonia corporum celestium et angelorum seu volucrum nescire [*recte*: nescimus?—LH-S] divinare).

4 Blackburn 2004 cites Guido *Micrologus* ch.8: ".b. vero, quod minus est regulare, quod adiunctum vel molle dicunt," as well as the anonymous

5 Palisca 1978, 111 van Waesberghe 1950, 69, "quod sit non plenus tonus sed imperfectus, non ut quidam imperiti resolvunt dimidius tonus. Virgilius semiviri Phryges, id est non pleni viri, quia more feminarum se vestiunt." The reference is to *Aeneid* 12.99.

6 See the comments in Blackburn 2004.

7 See Page 1991, 164, translation 81. As argued in Bernhard 1998, this treatise probably dates from c. 1300.

Regino to explain the semitone.⁸ The definition of “semi” as meaning “incomplete” continues to provoke reference to cross-dressed Phrygians well into the fifteenth century.⁹

The use of Vergil as an authority (along with reference to modal ethos and the three Greek melodic genera, which will be discussed below) exemplifies the medieval inheritance of terms, concepts, and written authorities from classical antiquity. Much has been written about the construction of gender and sexuality in Greek and Roman Antiquity, revealing its historical and cultural specificity.¹⁰ However, the focus of the present essay is the rather different context of the later Middle Ages, whose writers viewed antiquity through their own rather “presentist” Christian lenses. Thus everything that was available—writings of antiquity, commentaries, and earlier medieval theory—was treated as having ongoing contemporary relevance, even if this required reinterpretation. The connotations of “semiviri” for Johannes were probably rather different from those of Vergil. For instance, constructions of gender in the Middle Ages were influenced by Christianity.¹¹ Understandings of gender, sexuality and specific sexual behavior are located in specific cultures, which are geographically and chronologically delimited; they tend to be contested and unstable. Nevertheless, the masculine-feminine binary opposition is one of the most fundamental for writers in all periods, and it permeates music theory, being applied to modal ethos, the music of the spheres, voice types, and intervals. What the following analysis proposes is not that there was a monolithic understanding of certain traits as masculine and feminine (compare any two indepen-

dent descriptions of modal ethos to see the incompatible variety of traits ascribed to the same mode). Rather I argue that femininity, and its association in received learning (deriving from antiquity) with the chromatic genus, was readily used to discuss the small interval whose presence became so central to the counterpoint of the fourteenth century because the forward thrust of the directed progression—what we might term its tension-resolution patterning—was felt to depict a sensual appetite whose ethicality was questionable. Further, I suggest that the particular strand of musical understanding that employed gendered categories in this way may have been the progenitor of a trope of chromaticism in Western music of later periods.

Cross-dressing in men carried particularly negative associations in the Middle Ages, when it was commonly believed that the only reason that men would want to adopt the outward appearance of women would be the illegitimate one of gaining irregular sexual access to them.¹² More centrally, however, the quotation from Vergil taps into two deeply rooted discourses inherited from ancient Greek theory: the association of Phrygia—a province on the eastern edge of the Greek empire—with classic orientalist tropes of irregular sexual behavior, and the idea of small intervals, especially those smaller than a tone, as feminine. Connecting the two is an easy slippage between a musical trait considered feminine and the effeminate East.

The first discourse outlined above is one highly familiar in humanities scholarship since Edward Said’s classic study, *Orientalism* (1978).¹³ In music it is typically thought to start with the vogue for Turkish or Chinese opera settings in the seventeenth and eighteenth centuries.¹⁴ However, in music

12 See Greene 1956; Anson 1974; Bullough and Bullough 1993, 225; Bullough 1996; Crane 2002, 662.

13 Said 1978.

14 Ralph P. Locke “Orientalism” at <http://www.grovemusic.com>.; see also idem “Exoticism,” where he reports that active cultivation of the exotic really got going in the sixteenth to early eighteenth centuries, “after flirting occasionally with the exotic during the Middle Ages and Renaissance.”

8 Müller 1907, 184. van de Klundert 1998, 2:10. Citing Martianus, *The Marriage of Philology and Mercury*, II, 1, Regino states that “the term [semitone] is not to be understood as meaning that the tone is halved any more than among letters we take a semi-vowel to stand for half the vowel,” LeRoux RSM 1965, 50.

9 For example, in Adam of Fulda and Johannes Gallicus.

10 See, for example, Halperin 2002; Halperin, Winkler and Zeitlin 1990; Golden and Toohey 2003.

11 See the excellent discussion of gender and sexuality in Karras 2005, 1–27.

theory it takes its cue from classical antiquity, for which Phrygia served much the same function as Turkey or China to Western Europe in the Enlightenment. As Phrygia is a province at the easternmost edge of both the ancient Greek and medieval Christian worlds, the naming of the Phrygian mode as the impetus to irrationality represents an early musical manifestation of one of the most enduring tropes in Western thought—the association between femininity, the East, and sexual corruption. Phrygia is specifically associated with transgressive sexual acts: homosexual sex because Ganyমেদে, abducted by Jupiter to be his cupbearer and lover, is described as “the Phrygian youth,” and adultery because Troy—in Phrygia—had fallen because of the adulterous love of the “Phrygian” Paris for Helen. The terms denoting origin in Phrygia “take on unflattering suggestions of effeminacy in the mouths of those hostile to the Trojans in both Vergil and Ovid themselves.”¹⁵ In medieval Christian readings of Vergil and Ovid, these stories simply exemplify sinful sexual behaviour and were regularly copied and translated with appended moralizing Christian exegesis.¹⁶

Despite giving its name to one of the church modes, Phrygia bore its overtones of sexual corruption well into the later Middle Ages. Boethius’s proem to Book 1 of his *De institutione musica*—one of this central source’s most excerpted sections in post-ninth century music theory—illustrates the power of music over bodies both with comforting stories of

music’s ability to cure disease, and with cautionary tales in which the Phrygian mode makes a youth already derationalized by drink (and thus not receptive to verbal persuasion), act in a frenzied way (usually involving violence and sexual acts).¹⁷ In his satirical *Policraticus* (before 1159), John of Salisbury, like Boethius, starts with music’s praises before also going on to warn about its dangers. He effects the link between praise and blame by commenting that “The Phrygian mode, by decree of the philosophers, had long before been banished from the court of Greece, and all such melodies as lead to the abyss of lust and corruption.”¹⁸ He calls the man who is dignified, moderate, and modest yet likes such song a *rara avis* on the grounds that even the 100-eyed, super-vigilant, panoptical Argus was enchanted by a mere pipe.¹⁹ The “rare bird” is the black swan of Juvenal *Satires* VI, 165, the chaste and perfect wife. This satire is concerned with the modern period’s loss of chastity, although the speaker in Satire VI goes on to say he’d rather not marry the chaste matron he is offered. This subtext is suggestive, but, as with so much of John’s work, the satirical nature of the text makes it very difficult to pin him down to a single, moralizing meaning. The fourteenth-century French translation and updating of this text shifts the focus of this passage specifically to the church: “But the style/mode [*maniere*] of Phrygia and the other dissolutions, attracting [*listeners*] to corruption by means of foolish pleasure, are not useful to holy institutions, but declare the malice of those who abuse them.”²⁰

The association between femininity and small intervals in antique theory is far less widely known within modern scholarship, and the topic of gender in medieval music theory (whose terms and concepts, but not necessarily their interpretations, derive at least in part from those of ancient Greece) has received remarkably little attention, especially

15 *Aeneid*, 9.614–620 and Ovid *Fasti*; see Littlewood 1981, 389 and fn.48.

16 The discussion of the correct Christian interpretation of the Ganymede tale is central to Alan of Lille’s twelfth-century prosimetrum *De planctu Naturae*, which was particularly popular in the fourteenth century. The whole of Ovid’s *Metamorphoses* was translated and moralized in French in the thirteenth century. The first tale sung by Orpheus in the *Metamorphoses* is that of Ganymede, and the moralized Ovid treats Orpheus’s death for renouncing the love of women and giving it instead to young boys with particular medieval Christian distaste. It seems likely that these stories were enjoyed for their racy content as well as their newly appended edifying moral Christian context. See Häring, 1978; Alan of Lille, 1980; De Boer, 1915–38; and Holsinger 2001, Chapter 7.

17 Boethius 1989, 6–7. Friedlein 1867, 178–87.

18 *Policraticus*, I, 6. Pike 1938, 33. Brucker 1994, 115, lines 25–26.

19 *Policraticus*, I, 6.

20 Brucker 1994, 115, VI, lines 25–26.

considering its pervasiveness. In the fourteenth century in particular, a set of gendered associations was refocused on the “coloring” of melodies with irregularly placed and perhaps also irregularly sized sub-tonal intervals that animate and make more compelling the *ars nova*'s typical tension-resolution cadence figures. The contrapuntal tension understood as an imperfect sonority which is “seeking” completion in a perfect sonority, where that desire for perfection is relieved by a very small interval, in combination with both the music theoretical understanding of semitones as feminine and feminizing, and with clerical and scholastic opinion that saw women as particularly susceptible to sexual desire and likely to inspire it,²¹ seem to have created a degree of moral panic about this musical reality—the “directed progression”—whose traces survive in music theorists’ varied responses. In short, the “leading note” could potentially lead astray not only the singer (who would depart from the regular theoretically sanctioned steps within the octave) but also the listener (whose moral fiber would be mollified by such unethical semitones).

The “leading note” also became associated with another aspect that dominates the orientalist music of later centuries, chromaticism. This chromaticism is not necessarily chromatic movement as such (although Marchetto of Padua does provide some examples of melodic motion of this kind). Instead, conceptual and theoretical associations of intervals smaller than a tone with the feminine and immoral chromatic genus of ancient Greek theory had ethical and theoretical (if not practical) implications for fourteenth-century polyphony.²² Before considering in detail some key fourteenth-century writings, it is first useful to observe the gendering

of musical ethos—especially in relation to small intervals and the chromatic genus—already present at the outset of Boethius’s treatise.

GENDER IN BOETHIUS’S BOOK I PROEM

Gender in European cultures usually reflects moral judgment, with the feminine being less rational and thus less human, good, etc. than the masculine. A concern with these issues occupies Boethius’s proem to *De institutione musica*. Summarizing Plato’s strictures in the *Republic*, Boethius defines music of the highest character as “temperate, simple, and masculine (*modesta, simplex, masculata*), rather than effeminate, violent, or fickle (*effeminata, fera, varia*).”²³ Although later medieval music theorists apply these Greek-derived terms to their own quite different music, they preserve the key organizing trope of gender and its attendant characteristics. In addition to the three pairs of terms given by Boethius in his summary of Plato, the terms *durus* and *mollis* (hard and soft) are applied to masculine and feminine music respectively. According to Calvin M. Bower, these Latin terms translate two Greek ones that connote musical character: soft music is tender and effeminate; hard music is firm, austere, and masculine.²⁴

Of course, this construction of musical gender transcends the actual grammatical gender of these particular adjectives at any given time. That these qualities are part of what medieval medical science saw as woman’s natural disposition is underlined in Isidore of Seville’s etymology for the words for man and woman: “Man drew his name (*vir*) from his force (*vis*), whereas woman (*mulier*) drew hers from her softness

21 See in particular Cadden 1993 but also Beer 2003; Bullough and Bullough 1993; Bullough 1996; Gaunt 1995; Ziolkowski 1985. On thirteenth and early fourteenth-century attitudes, see Chapters 4–5 of Page 1989.

22 The intervals sung imply a chromatic division of the conceptual pitch space; this does not mean that chromatic intervals as such (for example, F to F#) are often sung. See the comments in Bent 1984.

23 Boethius 1989, 3. Friedlein 1867, 181. These terms are almost universally repeated in music theory and encyclopedia entries on music after Boethius. For some citations made between c. 1270 and c. 1325 see Cserba 1935, 37 (late thirteenth century), Göller 1959; Hentschel 2000, 89 (thirteenth century), Bragard 1955–73, 59 (early fourteenth century).

24 Boethius 1989, 3 fn 7.

(*mollities*).²⁵ At the same time as she is soft, cold, moist, and tender, woman is more libidinous, as her other name seems to tell: “The word *femina* comes from the Greek derived from the force of fire because her concupiscence is very passionate: women are more libidinous than men.”²⁶ Although these are not linguistic etymologies in the scientific sense recognized today, such exegetical etymologies of names were thought to give epistemic access to the things themselves and are thus deeply indicative of the world view of their medieval authors.²⁷ The idea that feminine music is not *modesta* is often shown in reference to “effeminate” music as *lasciva*. Although this adjective has a range of meanings, which includes the more neutral senses of merry and playful, many music theorists use it with sexual overtones.²⁸ Lascivious or wanton music in turn is referred to as soft (*mollis*) in opposition to *durus* (hard, or, as Bower translates, “rough”).

In their original context in Greek music theory, the terms that are translated into Latin as *mollis* and *durus* (μαλαχός and σκληρός) also had more technical meanings in terms of interval content. In this sense soft, effeminate music has intervals that are small and compact (especially various types of semitones and notes smaller than a semitone), whereas hard, masculine music is made of notes that are broader and more expansive, such as tones.²⁹ Small intervals were associated by the Greeks with the chromatic and enharmonic gen-

era, two of three ancient musical genera—the diatonic, chromatic, and enharmonic—each of which represents a particular tuning of the tetrachords in an octave.³⁰ These three genera were the three kinds of tuning of the notes within the octave that were available in ancient Greek theory and which are described thus by Boethius:

The diatonic is somewhat more austere and natural [*durius et naturalius*], while the chromatic departs from that natural intonation and becomes softer [*in mollius decedens*]; the enharmonic is very rightly and closely joined together.³¹

The diatonic is so called from having two consecutive tones in its tetrachords, each tetrachord being semitone, tone, tone. The chromatic genus is viewed as the first mutation from the “natural intonation” of the diatonic.³² It is called chromatic (“colored”) because it is considered a different shade of the diatonic. (Bower explains that the word “chroma” can also mean complexion or surface.) Each tetrachord of the chromatic genus comprises two semitones and then a “trihemitone” (an interval of three semitones, which may not be subdivided). Moreover, as Boethius explains later in his treatise, the exact tuning of these semitones according to Aristoxenus could be of three types: half a tone, a third of a tone or 9/24 of a tone.³³ Boethius reports alternative divisions of the tetrachord; that of only Archytas has no variation in the size of semitones in the chromatic genus.³⁴ This available internal variation in the exact tuning of the semitones contributes to this genus’s perceived femininity: it is

25 Cited in Salisbury 1996, 86. For an edition see Lindsay 1911, Etymologies 11.2.

26 Salisbury 1996, 86 citing *Etymologies* ch. 11. The paradox that the moister woman’s name derives from the force of the fire of her concupiscence is a feature of these medieval descriptions, akin to her characterization as voracious but also passive and submissive. Writers who comment on this seeming contradiction usually say that woman’s coldness (linked to her moistness) seeks its opposite, and that damp wood takes longer to catch fire but also burns for longer once alight. See *ibid.*, 93.

27 See the comments in Sullivan 1999, 8.

28 See Blackburn 2004.

29 See Bower’s introduction in Boethius 1989, 3 fn 7.

30 See Mathiesen 1999.

31 Boethius 1989, 40. “Sunt autem tria: diatonum, chroma, enarmonium. Et diatonum quidem aliquanto durius et naturalius, chroma vero iam quasi ab illa naturali intentione discedens in mollius decedens, enarmonium vero optime atque apte coniunctum.” Friedlein 1867, 212–13.

32 The enharmonic consists of two dieses (each half a semitone) and a ditone; see Boethius 1989, 40.

33 Friedlein 1867, V. 16 and Boethius 1989, 176.

34 Friedlein 1867, V. 15–18 and Boethius 1989, 174–79. In the division by Ptolemy the semitone is of variable size in all three genera.

soft (*mollis*), fickle (*varia*), and feminine (*effeminata*). Conversely the diatonic is not only “natural” but in later medieval traditions is often explicitly representative of an Aristotelian virtue as the mean between two extremes: the soft, feminizing chromatic and the hard, dull enharmonic. For example, one of the texts in the late-medieval tradition of Johannes Hollandrinus recounts that the “Diatonic, however, keeps to the mean between soft and hard; it is also known as natural; it is produced, as it were virtuous, being in the middle, in that it is made from notes that are not too soft or too hard, but middling. That is why the monochord of the entire hand, the entire harmony of the art of music, is made up of hard and soft notes together.”³⁵

In this context it is no wonder that the chromatic genus is implicated in a central cautionary tale about the dangerous power of music. Boethius’s proem cites (authoritatively, in Greek) an order that details the expulsion of Timotheus of Miletus from Lacedaemonia.³⁶ Timotheus is said to have steered the youths of Sparta away from the “moderation of virtue” by altering the structure of the pitches within the octave to that of the chromatic genus, which is soft (*mollius*)—that is, it has some of its notes very close together.³⁷ In some later medieval retellings of the story the feminizing power of the chromatic mode is further emphasized. For example,

in the widespread tradition of Johannes Hollandrinus, the theorist uses the verb *effeminare* and integrates this story as an exemplum directly into a technical account of the three genera, from which it is widely separated in Boethius’s original text:

Chromatic music is that which is measured through the fourth, which proceeds by minor semitones. That is to say between the first and second strings three semitones sound, but between the second and third one semitone sounds. The inventor of this music is said to have been a Milesian, who by his wonderful and sweet-sounding singing made young men effeminate, and thus induced them into sexual activities [*dulcisono iuvenes effeminabat, et ita ad actus venerios deducebat*], for which reason he was thrown out of and expelled from Athens.³⁸

If the chromatic genus’s very nature is soft and feminine and, as music, it has the power to make an unwitting listener’s nature accord with its own, it will “de-nature” its male listeners. Given the subordinate position of women in medieval society and science, feminization means becoming inferior, being softened and made more passive; in short, becoming effeminate. As women represent the “less rational part of the soul,” closer to the appetites of the body, effeminacy, like drunkenness, is associated with a dulling of the rational faculties.

The role of social construction in gender was barely acknowledged in the Middle Ages, at which time masculine and feminine traits were deemed to be bound to male and female biology in a natural and immutable way. The moral analysis of adopting opposite gender characteristics is most acutely present in medieval reactions to cross-dressing. In

35 Translation Leofranc Holford-Strevens. “Dyatonica autem tenet medium inter molle et durum que alio nomine naturalis dicitur tamquam virtuosa in medio existens elicitur, quia ipsa ex vocibus non nimis mollibus nec nimis duris, sed mediis construitur. Hinc est, quod monochordum tocius manus, tota armonia artis musice ex duris vocibus simul et mollibus complectitur.” See von Bartha 1936, 194.

36 Leofranc Holford-Strevens (personal communication) has pointed out that Timotheus’s very toponym significantly associates him with a town famed in the ancient world for its production of pornographic literature and quality dildos.

37 See Boethius 1989, 5. “Timotheo Milesio Spartiatas succensus, quod multiplicem musicam reddens puerorum animis, quos acceperat erudire, officeret et a virtutis modestia praepediret, et quod armoniam, quam modestam susceperat, in genus chromaticum, quod mollius est, invertisset.” Friedlein 1867, 183–84.

38 Translation Leofranc Holford-Strevens. “Chromatica musica est, quae per diatessaron mensuratur, quae procedit per semitonia minora. Sic scilicet quod inter cordam primam et secundam tria semitonia resonant. Sed inter secundam et tertiam unum resonat semitonium. Huius autem musicae inventor dicitur fuisse Milesius, qui suo canto mirifico et dulcisono iuvenes effeminabat, et ita ad actus venerios deducebat, propter quod fuit ab Athenis eiectus et expulsus.” Feldmann 1938, 161. Note the change from Sparta to Athens. On the tradition of Johannes Hollandrinus, see the Introduction in Rausch 1997.

a discussion of cross-dressing in medieval culture, Vern L. Bullough has argued that the condemnation of adopting opposite gender characteristics operates mainly in terms of men acting like women, as female cross-dressing is equated with women aspiring to something better—indeed, such aspirations were almost encouraged in celibate female religious by early writers such as St Jerome.³⁹ In the period of the new Aristotelianism, gender theories were influenced by Aristotle’s “scientific evidence” of female inferiority, both intellectual and moral. Male domination was, for Aristotle, the will of nature and not to be challenged. Although Christian commentators such as Thomas Aquinas balked at considering women—who, for him, are also part of God’s plan—as misbegotten men, they nevertheless placed them squarely in subjection:

For good order would have been wanting in the human family, if some were not governed by others wiser than themselves. So by such a kind of subjection woman is naturally subject to man, because naturally in man the discretion of reason predominates.⁴⁰

The interesting disjunction here is in the relation between reason and nature. Whilst reason is natural to humans (it is part of their character), nature (including the world of animals other than man) is irrational. Women are closer to nature in being less rational than men, but their femininity makes them unnatural as models for male characteristics. Many medieval writers recognized the multiple senses of “nature,” which functions as a moral middle term between rationality and the unnatural.⁴¹ Effeminate men are willfully abasing themselves, unnaturally suppressing their superior rationality, something which, it was suspected, would only

be done for the ulterior purpose of easier sexual access to women, the desire for which itself reflects moral decadence.

APPROPRIATING THE CHROMATIC GENUS IN THE LATER MIDDLE AGES

As a fact of musical practice, the chromatic genus had no meaning for the Middle Ages. Because the Greek tuning system had no *practical* presence in medieval music, its name is a theoretical vestige, a remnant of past wisdom. As well, it was a repository of certain gendered terms that are associated with technical and moral judgment on musical material. Most medieval theorists report the three Greek genera but claim that only the diatonic genus is still in use as the ancients had rejected the chromatic as too corrupting.⁴² The diatonic genus is also considered as natural to boys and men, and represented a virtuous mean between the unnatural extremes of the other two genera, as represented here in the mid-fourteenth-century *Quatuor Principalia*:

But since the chromatic genus is excessively soft, and leads to wantonness through corrupting good morals, [and] the enharmonic, which is too hard and rough brings tedium to the hearing, therefore as Boethius says in the proem of his first book, [Plato] instructed the people that boys and men should be educated in diatonic music, which is modest and of good morals, and it is called modest because it is the mean between over-wanton and over-rough sounds, it is called of good morals because it teaches morals, and although this genus is hard, yet it is natural. Thus the aforesaid two genera, as if unnatural, have fallen out of use.⁴³

39 Bullough 1996, 225, 227.

40 Thomas Aquinas, cited in Bullough 1996, 225. See Aquinas *Summa*, part 1 Q92, “The production of women,” Article 2.

41 See White 2000, 63–67. The multiple senses of “nature” were often enumerated by medieval scholars; see for example, Hugh of Saint Victor’s *Didascalicon* Bk. 1, ch. 10 (Buttimer 1939, 1.10 and Hugh of Saint Victor 1961, 56–57).

42 See Palisca 1978, 107.

43 Translation Leofranc Holford-Strevens of the version in British Library, Additional 4909, ff. 20v–26v, on f.24r, “Sed quia genus chromaticum nimis est mollis, et ad lasciviam deducit corumpendo bonos mores. Genus enarmonicum quod est nimis durum et asperum tedium inducit ad auditum, ideo ut tangit Boicius in prohemio primi libri, praecepit populo ut pueri et homines in Diatonica Musica informentur quae modesta est et bene morata, et dicitur modesta quia medium est inter nimis lascivos et nimis asperos sonos, Dicitur autem bene morata quia mores informat, et licet hoc genus durum sit tamen est naturale,

This conclusion is also contained in a widely copied treatise, which credits the neglect of the enharmonic to laziness and the chromatic to condemnation:

But the chromatic genus, since its softness made many men effeminate, was condemned by former generations; the enharmonic, owing to its difficulty and human laziness, retired from the court long ago, and only the diatonic just about remained in use.⁴⁴

Apart from its implication that not only the addressees of this treatise but also those makers and consumers of music that count are exclusively men, the analysis of the continued use of only the diatonic genus makes some sense because the modal octave of the medieval church contained only two semitones, all other intervals being tones; and each species of tetrachord thus contained two tones and a semitone, as in the description of the antique diatonic genus. Elsewhere in the *Quatuor Principalia*, the author criticizes singers who sing semitones at cadences where there should be tones (*sol-fa-sol* or *re-ut-re*) because they “confuse the diatonic genus and falsify the plainsong.”⁴⁵

However, in a number of sources from the fourteenth century, the group of terms that pertain to the chromatic genus—complete with its gendered ethos—surface in application to a new musical reality. One author even refers to

Sic vero praedicta duo genera, quasi innaturalia ab usu recesserunt.” Available via *Thesaurus Musicarum Latinarum*: <<http://www.indiana.edu/tml/start.html>> (hereafter TML). The same text is in *De origine et effectu musicae*, London, British Library, Lansdowne 763, 56r. See II, 15 of *Quatuor Principalia*; Aluas 1996.

44 Translation Leo Franc Holford-Strevens. “Sed chromaticum genus, quia eius mollities multos effeminavit, ab antiquioribus est damnatum. Enharmonium vero propter eius difficultatem et hominum desidiam iam dudum ab aula recessit, vixque diatonicum in usu remansit.” The text is the *Tractatus de musica* in Biblioteca Medicea-Laurenziana, 29.9, ff. 143v–145r, on f.143v, in Krakow, Biblioteka Jagiellonska, 754, ff. 43v, 42r–v, and 44r, on f.43v, and in Munich, Bayerische Staatsbibliothek, Clm 28186, ff. 258r–259v on f.258v, accessed through the TML.

45 III: 56: “sic genus diatonicum confundunt, ac planum cantum falsificant,” Aluas 1996.

the oversharpening of pitches that forms part of this new practice as the result of a chromatic semitone, providing a specific link to the terminology of the Greek melodic genera. This new practice, called by Sarah Fuller the “directed progression,” is a sequence of two dyadic sonorities in which there is a clear sense of movement from one two-note “chord” to the other. Fuller has shown that this kind of cadence is equally as likely to shape the opening of phrases as to signal closure, and can be said to be an important artistic resource of late-medieval polyphony.⁴⁶ The sense of motion from one dyad to another is driven by a very small interval separating two consecutive notes in a single part, usually the highest text-carrying voice. This voice effectively makes one sonority actively “seek” another in a manner that is so familiar from leading notes in later functional tonality—a functionality driven by exactly this kind of “voice leading”—that the progression is often referred to in modern parlance as a “leading-tone cadence” (or, when harmonized in three parts, as a “double leading-tone cadence”).

The smallness of the interval in the upper voice could be the result of two situations:

(1) It could be a semitone present in the medieval system of notes identified by letter-name (*littera*) and solmization syllable (*vox*) in the three regular overlapping hexachords—pitches that can be written down and are thus proper to rational, literate human music-making, in short, *musica recta*. These pitches are not only “lettered,” but their relative places—their dividing intervals—within the octave have mathematical foundations that can be understood though whole number ratios. These pitches would operate to effect directed progressions to *b-fa*, *f* or *c*, each of which already has a semitone below it *within* the Guidonian hand. All these semitones are minor semitones. Although the major semitone or apotome can be described within the Guidonian gamut—being the difference between *b-mi* and *b-fa*—it is never used in chant. However, the minor semitone was considered the

46 See Fuller 1992.

most feminine interval in chant's ordinary pitch-set because of what Bonnie J. Blackburn has termed "the lascivious career of B \flat ."⁴⁷

(2) The small interval may result because the first cantus note is solmized *mi* or *fa* when *mi* or *fa* do not regularly fall on that letter-name note within the Guidonian gamut. Such a pitch would result not from the workings of *musica recta* or *musica vera* but that of *musica ficta* or *musica falsa*. The earliest theoretical treatments of this practice tend to refer to it as *musica falsa*. As such it can fall within a larger range of erroneous or derogated practices lumped together as *musica falsa*, which include incorrect solmization, miscopying of music in manuscripts, and faulty composition or improvisation.⁴⁸ There is evidence that the semitone between the penultimate and ultimate notes of the voice part affected by fictive *mi*-signs (sharps) was smaller than those semitones occurring in the regular gamut and may not have been solmized "*mi*" at all.⁴⁹

What the evidence seems to suggest is that the tension-resolution patterning of the directed progression provided an aural analogue (a "phonologue") of desire and satisfaction that was later made more acute by stretching the interval of the penultimate sonority to give a greater sense of drive. Femininity and potential lasciviousness had, in the context of chant, sometimes been associated with the note $b\flat$ (*b-fa*) on account of its shape and its designation as "soft" or "round" b .⁵⁰ Although semitones were thus available in the *recta* gamut, at least one of these was already considered feminine. Those outside the gamut were even more feminized (as false or fictive), a feature exaggerated when the sub-tonal interval of resolution was made even smaller.

The binaries *falsa/vera*, *ficta/recta* would have been clearly gendered in the context of widespread medieval antifeminism; they tap into popular medieval notions of women as fickle and gossipy with untruths. While the scholarship on this in vernacular literature is especially vast, even within the relatively circumscribed corpus of Latin music theoretical writing this equivalence is shown by some of the glossing of earlier texts. For example, in a later writer's rendering of Boethius's idea that "A lascivious disposition takes pleasure in more lascivious modes or is often made soft and corrupted [*emollitur, ac frangitur*] upon hearing them," "frangitur" (corrupted, or is broken) is replaced by "effeminatur" (is feminized).⁵¹ Both are equally associated with lasciviousness, but by the later Middle Ages, "frangere" seems to have been more readily associated with subdivision of music's temporal continuum, while "effeminare" seems to have become linked to the subdivision of its pitch continuum.⁵²

Elias Salomon criticizes singers of plainsong who use semitonal inflections that are not in the ordinary gamut: a good singer should be able to sing *Mariae praeconio* without using F \sharp , G \sharp , C \sharp , D \sharp , and E \flat .⁵³ The commonest term for

47 See Blackburn 2004.

48 This is the case in Elias Salomon's treatise, although it should be noted that he is particularly wide in his definition of false music. See Dyer 1980, 87, 92.

49 See the discussion of *Quatuor Principalia* in Dumitrescu 2002, 21–22. See also Ellsworth 1984, Treatise V, and the discussion of Marchetto, below.

50 See Blackburn 2004.

51 Boethius 1989, 2. "Lascivus quippe animus vel ipse lascivioribus delectatur modis vel saepe eosdem audiens emollitur ac frangitur." Friedlein 1867, 180. The later writer is Regino (9th/10th century), who writes that "The lustful and impudent person is delighted by the lascivious modes, or hearing them frequently, is softened and made effeminate." ("Lascivus quippe ac petulans animus lascivioribus delectatur modis, aut frequenter eos audiens emollitur atque effeminatur"). Text and translation LeRoux RSM 1965, 39–40. A thirteenth-century gloss on Guido's *Micrologus* similarly has "Nam quisque lascivus ac petulans dulcibus modis emollitur atque effeminatur." (For the lustful and impudent person is softened and made effeminate by sweet modes.) Hirschmann 2001, 167.

52 For a selection of clerical criticisms of hocket's rhythmic subdivision, see Dalglish 1978. See also Aluas 1996, 140, and Bragard 1955–73, 7: 348. Arnulf associates female singers specifically with the subdivision of semitones (see below).

53 See Dyer 1980, 92.

this practice in the thirteenth century was *falsa musica*, a term which shifted gradually to *musica ficta* in the fourteenth as the practice became itself legitimized and theorized as central to polyphonic music. Salomon comments that “false music is not other than a false musicus bellowing”—the verb here is that associated in the *voces animantium*—a commonly copied appendix to basic schoolboy grammar texts—with oxen, which are in turn often mentioned in music theory treatises as producers of *vox confusa* from which the *vox articulata* of human song should be distinguished.⁵⁴ Singing that is irregular in its division of the pitch spectrum is condemned, although here the theorist is referring not to the use of small intervals for contrapuntal effect but within chant.⁵⁵

The aspect of *musica falsa* that specifically involves the singing of combinations of solmization syllables and letter names not found in the ordinary gamut of seven overlapping hexachords is eventually recognized as a legitimate practice. Writing in the late thirteenth century, and perhaps because of his interest in polyphony rather than chant, Lambertus comments that *musica falsa* is not so much false as unusual (*inusitata*).⁵⁶ As the practice of making a small interval in one voice between the two notes of a directed progression became central to the musical language of the fourteenth century, theorists adapted their terminology and tended to refer instead to *musica ficta*, a more positive adjective. In addition they report that the liaison between the two dyads—the “appetite” created by the sonority’s quality and satisfied in part by the singing of the small interval in one voice part—is a natural matter of the weak seeking the strong, the im-

perfect sonority (or dissonance) seeking the perfect sonority (consonance).⁵⁷ Although the moral opprobrium directed against singing “extra-manual” pitches lessened, the gendered associations of the practice persist in describing them as fictive rather than false. The first sonority, one of whose pitches will often be sung to a *littera-vox* combination outside the hand, is the feminine imperfect sonority, which is completed, perfected and—it may be inferred—morally legitimated by the second.

Writing in the early 1350s, the theorist Johannes Boen comments that the moderns, like dwarves on the shoulders of giants seeing further than the ancients, make this subtle fictive placement of semitones both because they are bored by the everyday position of the notes, and because they are led by greater wantonness (*maiori ducti lascivia*).⁵⁸ The music example that follows this pronouncement shows this wanton placement of semitones with the pitches *e* and *d*.⁵⁹ Before *d* there is a *mi* sign (#) and before *e* a *fa* sign (b), although *d#* cannot be sung to these syllables within the *recta* system of regular overlapping hexachords. The note *e* with a *fa*-sign is described as a tone and a minor semitone above *c*, which is a major semitone flatter than the interval *c-e*. The interval between *e* and *eb* is thus an apotome; that between *d* and *eb* is a minor semitone. The *d* with a *mi* sign is described as a tone and a major semitone above *c*. Thus the *d#* exceeds the *eb* by the difference between major and minor semitones,

57 See Cohen 2001.

58 Translation Holford-Strevens: “The moderns, led by greater wantonness, like dwarves on the shoulders of giants seeing further than the ancients, as if bored by the everyday position of the *claves*, making subtler placements of the said letters *bfabmi* even on other *claves*, have rationally explored in depth.” (Moderni maiori ducti lascivia, quasi nani super humeros gygantum plus longe respicientes quam veteres, tamquam cotidiana positione clavium fastiditi, ad subtiliores positiones dictas litteras bfa[^{sq}]mi etiam in aliis clavibus statuendo, se rationabiliter profundarunt . . . Gallo 1972, 35).

59 The examples as provided in Gallo 1972 can be viewed via the TML.

54 Dyer 1980, 91 fn 21. “Falsa musica nihil aliud est, quam falsus musicus mugiens.” On the *voces animantium* see Marcovich 1971. For a music theory example, see Herlinger 1985, 94 (1.11.4).

55 Although Elias Salomon’s treatise is known from only one copy, similar condemnations of irregular semitones in chant can be seen in *Quatuor Principalia* III, 56, cited above. On the use of microtones in western chant, see Ferreira 1997 and Hughes 1987.

56 Bent 2002, Introduction, especially 13.

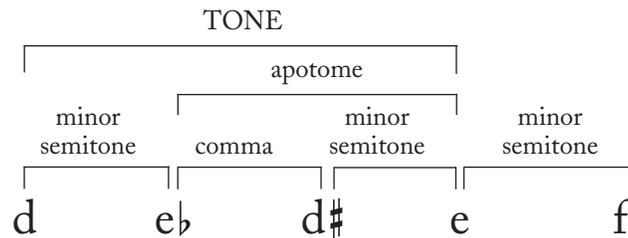
that is, by a comma.⁶⁰ In a second example, Boen describes how it is possible to sing two minor semitones in succession ($f-e-d\sharp$) and comments that this is a new type of music, neither diatonic, nor chromatic, nor enharmonic, but “commatic.”⁶¹ Singing two consecutive minor semitones in the same melodic direction the melody falls short of a tone by the interval of a comma. The interval between f and $d\sharp$ is a tone minus a comma; that between d and $d\sharp$ is a minor semitone plus a comma (a major semitone). Thus some intervals that result from the application of *musica ficta* are “commatic,” differing by a comma from the tones and semitones of the Guidonian hand (see Example 1).

Although Boen does not link the use of such “commatic” music to counterpoint here, he does when he discusses it at more length in his other treatise, *Musica*:

it must be noted more subtly that modern usage admits the said letters in *claves* [i.e. pitches] outside the nature of the manual monochord only

60 Boen detects this wantonness in the modern division of the time continuum as well as the modern division of the pitch continuum. “For that is not how the notes fit together, since the long may be worth three breves while the breves may be worth two semibreves, likewise the breve may be perfect while the long is imperfect. Sometimes the singer is led by wantonness to vary the mode [strictly, or the mensuration in general], proceeding now in threes, now in twos. But then the tenor of such a composition should be clearly distinguished by coloration, as in the tenor of the motet *In arboris emphiro*.” Translation Holford-Strevens. “Non enim sic note coartant, quia longa potest valere tres breves, brevi valente duas semibreves; item brevis potest esse ternaria, longa binaria existente. Solet aliquotiens cantor lascivia ductus in eodem cantu variare modum, ut nunc processus fiat per ternarium, nunc per dualitatem. Sed tunc oportet, quod huiusmodi cantus bene distinguatur per distinctos colores, ut in tenore moteti *In arboris emphiro*.” In Gallo 1972, 20.

61 Gallo 1972, 36. “Sic ergo novum genus modulaminis, quod nec dyatonicum nec chromaticum, nec enarmonicum ymmo commaticum dicitur, posset inveniri.” Although the term “commatic” might seem to imply that the music uses the comma, at least notionally in tuning its intervals from their size in *recta* positions, the comma itself is not actually realized as an immediate melodic progression.



Example 1: Boen's “commatic” music.

for consonances or the wantonness of the song itself [*lasciviam ipsius cantus*]⁶²—for men did not formerly pant after so many wantonnesses [*lasciviis*] in the practical performance of a song as they do now; and so that this wanton merriment [*hec lasciva iocunditas*] may be marked in written works without any kind of construction of a new monochord, as has to happen in the case of pitches, so that the sign may correspond to the thing signed, usage has rationally admitted those letters and their effects in different *claves*.⁶²

He explains then that the ancients preferred the fourth as a consonance to the thirds and sixths preferred now and speculates that this must have been because, in combination with a fifth and an octave (for example the G/c in $C/G/c$), it is the most consonant sonority possible after the fifth and octave themselves.⁶³ Unlike the third and sixth, the fourth is

62 Translation Holford-Strevens. Frobenius 1971, 63. “Sed ne dicta conclusio lateat indiscussa, est subtilius advertendum, quod modernus usus dictas litteras in clavibus extra naturam monocordi manualis admittit solum propter consonantias vel lasciviam ipsius cantus—non enim tantis olim quantis nunc in prolatione practica alicuius cantilene lasciviis hominis [*recte*: homines? H-S] inhyarunt—; et ut hec lasciva iocunditas absque omnimoda novi monocordi compositione signari possit in scriptis, sicut habet fieri in sonis, ut signum signato respondeat, rationabiliter eas litteras et earum effectus in diversis clavibus usus admisit.”

63 “De dyatesseron autem, et non de aliis, tamquam meliori consonantia post duplam et quintam veteres tractaverunt duplici fortassis de causa: prima causa dicta est, nam in cantu trium sonororum adinvicem, quo consonantie per accidens discernuntur, longe lascivior magisque iocunda

not subservient to another consonance: the third or sixth tends towards, and is completed, or perfected, by a subsequent perfect consonance. Boen then remarks on the current fashion, which greatly exceeds that of the ancients, for “foreign” varieties of notes (*in extraneis vocum varietatibus*) among young men.⁶⁴ These youths are often “sick of diatonic and not only applauding chromatic singing as here, [an example is given] but also attaching themselves to a new genus of song, which may be called ‘commatic.’”⁶⁵ Like the second example from the *Ars musicae*, the example given involves the melodic pitch succession *f-e-d#*.⁶⁶

The repeated use of “lascivia” in connection with *musica ficta* by Boen shows that the use of *musica ficta* was morally equivocal. It may be argued that *musica ficta* furthered an already equivocal and feminine understanding of the nature of the semitone. In line with the association of softness and

femininity with compact intervals in Greek theory, the semitone was already regarded as the most feminine—and therefore potentially feminizing—interval in the medieval gamut. However, it seems that the distinction between *recta* and *ficta* in the minds of the singer, in particular the expert singer for whom solmization was a relic of childhood instruction long past, was not particularly strong. Instead the directed progression itself—a sequence of tension and resolution, of appetite and satisfaction—seems to have become associated with the perils of feminization as an aural depiction of sexual desire and consummation.

There is evidence that in practice this meant that the interval between the tension and resolution sonorities could be even smaller than the minor semitone. This evidence is found most explicitly in a widely copied treatise that appropriates all three of the Greek genus names into fourteenth-century musical theory in order to attempt a rationalization of a what may have been a widespread contrapuntal practice. This treatise offers an important glimpse of a performing reality whose attestation in notated musical traces is patchy and contentious.⁶⁷

Marchetto of Padua added a third type of semitone to the major and minor semitones that were the two unequal moieties of the standard Pythagorean division of the tone in the Middle Ages. At the same time Marchetto recasts the names of his three semitones so that they adopt those of the three Greek genera: diatonic (major), enharmonic (minor), and chromatic. And by means of specious mathematics he divides the tone into five equal parts, making the three semitones two, three, and four-fifths of a tone, respectively. As Jan Herlinger comments, this is clearly a practicing musician’s attempt at what can only be a rough approximation.⁶⁸ The important thing is not that the new chromatic semitone is unfeasibly large, but that the singers are being told its size

est dyatesseron supra quintam, quam sint alique alie consonantie ubicumque situate post dyapenthe tamen vel duplam. Non etiam dyatesseron alicui sicut tertia famulatur vel sexta; consonantibus namque quinta et dupla, necessario consonabit et dyatesseron; et ideo de hiis, que servilis conditionis sunt non curantes, dumtaxat dominantibus intendetur.” Frobenius 1971, 78.

64 “Tertia vero aut sexta per se nec Pytagore nec Ptolomei temporibus umquam consonuit, saltem in regione ipsorum, nostre autem regioni, qua tertiis et sextis, et nullomodo sesquitercie proportioni per se, insisimus. Quam etiam in extraneis vocum varietatibus iuvenes potius quam antiqui lascivire videntur nunc saturati tertia sextam sitiendo, nunc relicta decima in quintam se precipitando, nunc longarum spreta protractione fracturis minutissimis minutiores applicando, perfectum in imperfectum convertendo, nunc sincopis fastiditi ad singultus properando, quos oketus dicimus, ymmo pluries super dyatonico nauseantes non solum chromatico cantui applaudendo.” Frobenius 1971, 78.

65 Translation Holford-Strevens; “ymmo pluries super dyatonico nauseantes non solum chromatico cantui applaudendo ut hic [example] sed et novo generi cantus, quod “commaticum” dici potest, inherendo ut hic [example].” Frobenius 1971, 77–78.

66 Examples as transcribed in Frobenius 1971 can be viewed via the TML.

67 See the summary in Memelsdorff 2000, 66, fn 26.

68 Herlinger 1981.

relative to two semitones with which they *are* more familiar. In short, the ascending *ficta* note (#) in any directed progression is 1/5 of a tone—a diesis—from the following note, considerably closer than *b–mi* is to *c* (the latter being a minor semitone of 90 cents when a tone is 204). Marchetto's *F#* is “four fifths” of a tone sharper than *F*; an interval which he labels a *chromaticum*, and which is larger than the major semitone between *b–fa* and *b–mi* (= 114 cents). Marchetto even urges that a different sign be used to show the division into a chromatic semitone and diesis so as to differentiate the interval from that caused by marking square *b*.⁶⁹

Marchetto links his new semitone specifically to the Greek word “chroma,” calls it a colored dissonance, and calls *musica ficta*, *musica colorata*.⁷⁰ He explains the chromatic as the “color of beauty” because the largeness of the semitone is driven by the elegance and beauty of the dissonance (the imperfect consonance), which is enabled to lie closer to the (perfect) consonance that follows. Marchetto's new “chromatic semitone” boasts a music-theoretic heritage that is clearly gendered feminine. Its “color” is described as feigned (*fictitio*); the singer feigns (*fiingat*).

SEXING THE LEADING TONE?

Unlike the more usual earlier description of irregular semitones as part of *musica falsa*, their description as a *fictio*

(as in *musica ficta*, which the singer “fiingat”) is not necessarily negative; we should think not of feigning but of fiction. The creativity of *fictio* positively designates the human potential for artistic creation, whose products—although a pale imitation of God-created nature—are a testament to God-given rationality and elevation above the other animals. In fact, the position of fiction—something not literally true but not merely false—was much debated in the Middle Ages as part of the ongoing issue of dealing with a classical canon of literary works from the pre-Christian era. Through *translatio studii* these works were typically interpreted allegorically, allowing for their Christian moralization.⁷¹ But the topic of fiction's truth-value was also tackled head on by a number of later medieval writers, especially those creating literature anew in the vernacular.⁷²

Marchetto seems to draw strongly on the positive potential of the idea of fiction. In line with this essentially affirmative perspective, Marchetto justifies and legitimizes a potentially wanton and morally problematic new musical practice using the intellectual rigor of Aristotelian physics. He claims that “a dissonance compatible to the ear must lie at the smallest distance from the consonance” because it assimilates some of the nature of the consonance that follows.⁷³ The

69 The special sign—proposed by Marchetto—is used in some pieces in Italian sources: the Rossi codex, the Reina codex, and in certain gatherings of *ModA*; see Memelsdorff 2000, 66 fn 26 and Memelsdorff 2001. The appearance of some French-texted pieces with this sign may indicate that it was at least a performance practice, if not a notational or explicitly theoretical one, outside Italy.

70 Herlinger 1985, 207; see also Cohen 2001. Marchetto specifically relates the semitone to its function in counterpoint explaining that “the segments of the whole tone (or the semitones) of this sort were devised in music so that we might come to more perfect or more beautiful consonances through colored dissonances, or because of their beauty.” *Pomerium*, 15.2; cited in Herlinger 1985, 137, fn j.

71 Vergil's Aeneas was reconfigured as the pious man of virtue, the thirteenth-century *Ovide moralisé* included long Christianizing interpretations at the end of each book, and even scientific works, such as bestiaries, lapidaries and hunting manuals, came regularly supplied with moral-allegorical interpretations. De Boer 1915–38; Tilander 1932; Hassig 1995. See note 13, above.

72 Macrobius discusses the issue with respect to the reliability of dreams' fictions and the correct interpretation of fiction is treated at some length by Alan of Lille in his *De planctu Naturae*; see Greene 1956. Numerous writers of vernacular dream-visions from the *Roman de la Rose* onward draw on Macrobius's discussion. Both Macrobius and Alan are specifically cited by Chaucer, who specifically separates that which is “soth” from the literally “trew” and that which is “fals”; see Cooper 1988.

73 Herlinger 1985, 207.

dangerous lasciviousness of *musica ficta* and its variably sized sub-tonal intervals is contained within a framework that sees it as creating an imperfect sonority that seeks its perfection. Not only does this fit the tenets of Aristotle's *Physics*, as David E. Cohen has already established, but it mirrors Aristotelian theories of gender, which viewed women as imperfect men, and accords with a description of the semitone as an imperfect tone discussed above. The alteration of intervals by a chromatic semitone results when a dissonance (imperfect consonance) such as a third, sixth or tenth, is striving (*tendendo*) towards a consonance. In their femininity such notes are beautiful, colorful, and imperfect; they gain much of this color and beauty from their proximity to, and appetite for, a perfect version of themselves.

When certain stable sonorities were preceded by less stable ones, a very small movement in one part, especially if it was the upper part and thus rising, gave an aural impression of a strongly directed motion. The highly sensual effect of the small melodic interval that separates the notes of one of the voices in the directed progression gives a feeling of tension and resolution, appetite and satisfaction. The "leading tone"—sung "sharp" through *musica ficta*, or even oversharp-ened by means of Marchetto's "chromatic semitone"—thereby exerts an aural pull; it has an appetite for resolution, in order, as Boen notes, that it may draw (*trahat*) the ear to the following perfect consonance. In an etymology adopted from the influential mythographical text of Fulgentius, the verb *trahere* is explained as the Latin translation of the Greek word for "siren."⁷⁴ In using the verb *trahere*, Boen hints at the analogical equivalence of two enchanting but dangerous types of feminine song—the ancient song of the sirens and the contemporary "commatic" melodies of the moderns.⁷⁵

Elsewhere I have discussed at length the moral opprobrium that clerics associated with the figure of the siren.⁷⁶ In Arnulf of St-Ghislain's short *Tractatulus* (probably before 1400), the greatest women singers are associated with an ability to subdivide semitones into indivisible atoms, a locution borrowed from Alan of Lille.⁷⁷ These women, described as both angelic and birdlike, perhaps represent the kind of subdivision that Johannes Boen claimed not to know about in his explanation of why the semitone cannot be divided into two equal parts in the passage cited near the beginning of this paper. Arnulf himself is probably a cleric and while nothing about his description states that these singers of the female sex [*sexus feminei*] are not female religious, his *specific* mention of clerics earlier in his treatise might imply that they are not (we might expect him to specify if they were). Did the lay nature of these women facilitate their splitting of the musical pitch spectrum?

For the *litterati*, the gamut is a finite set of discrete rational pitches, fixed in relative positions (*consonantiae*) and designated though letters as if they were a kind of *grammatica*. One of the chief practical pedagogical tools used to teach solmization to children was the Guidonian hand, which, because hands were the means of writing, was a fitting symbol of the rationality that elevated human control of musical sound above natural sounds. But a Foucauldian reading might view the Hand as both an incentive *and* a threat—a reminder of the beatings that would punish those whose

ciorem." Translated in Fuller 1992, 229–30, "it is established thus insofar as a cantus that is judged imperfect through thirds and sixths, despite its inharmonious quality, attracts and allures the ears toward the following fifth and octave. This is so that thirds and sixths who are their [fifth's and octave's] heralds and maidservants may announce the perfection of the cantus in fifth or octave, a perfection the sweeter for being long expected."

74 See Ilnitchi 1997, 171–72 fn 90 and 270–71.

75 Frobenius 1971, 70, "hoc ideo statuentes, ut cantus ille, qui per tertias et sextas imperfectus censetur, non tamen discors aures trahat et alliciat, ut perfectionem cantus, qui per quintam sequetur vel octavam, quarum tertie et sexte sunt nuntie et ancille, expectatam diutius indicent dul-

76 Leach 2006.

77 For an edition and translation, see Page 1992; passage about female singers on 16 (Latin) and 20 (English). Arnulf's verbal debt to Alan of Lille is outlined in Leach 2006.

exercise of rationality was insufficient.⁷⁸ Even if the hand is taken more neutrally as a convenient way of showing pitch without the need for any extra equipment or valuable parchment, the fixed steps it articulates bind discrete pitches and human rationality. In short, in the pedagogical environment that prevailed in cathedral and monastery schools, musical pitch was highly rationalized by its association with letters and the hand.⁷⁹

Anyone working outside this grammatical frame for conceptualizing pitch would, however, have been entirely unconstrained by the literate rationalization of music. All kinds of secular musicians in towns (who we know included women)⁸⁰ as well as amateur performers in courts and households may well have sung small arbitrary subdivisions of the tone *because they could*—they were not compelled to rationalize their practice and would have been working entirely by ear based on their own and others' practice. Perhaps through experiment and practice (*usus*) they discovered that a sharpened—or even over-sharpened—pitch, in the context of particular sonorities (imperfectly consonant ones), has the effect of moving the song along to the next note more forcefully. Perhaps the exposure to the improvised two-part polyphony of urban minstrels then irrevocably lured, enchanted, and captured the ears of clerical music makers, some of whom

became anxious and critical, but others of whom promptly set about devising rationalizations to legitimate the practice.⁸¹ This speculation provides a possible scenario for the change in contrapuntal practice that appears to have taken place in the first half of the fourteenth century, a period for which notated musical sources are comparatively scant.

Johannes Boen is torn: he describes the new “commatic” music in negatively loaded terms as arising from its proponents' lasciviousness and boredom with other music, yet he embraces the idea of change and progress in music, implying that a wish to recapture the musical practices of the ancients is tantamount to embracing the cyclic Platonic Great Year's heretical denial of the linear progression of history from Creation to Last Judgment. Boen's positive attitude to novelty and progress and his rejection of the Great Year echo the sentiments of a closely contemporary treatise by the philosopher and translator, Nicole Oresme, who probably worked at the University of Paris while Boen was there.⁸² Oresme has a key role in the gradual acceptance of the naturalness of irrational elements in the mathematics of all areas of the quadrivium. Joel Kaye has recently argued that the practical operation of money within the newly monetarized economy prepared the way intellectually for the ideas of geometric proportion, estimation and approximation which enter scholastic natural philosophy at this time.⁸³ As someone who

78 For such a suggestion, see Holsinger 2001, 267–82. The menacingly outsized hand connected to a master's smiling upper body in the illustration reproduced from Elias Salmonis's *Scientia artis musicae* on p. 277 is a particularly striking visual representation of the potential for fear induced by this mnemonic for musical literacy. Perhaps this is why male clerics chose to experiment with other parameters—rhythm and number of parts—whose musical exploration precedes the emergence of the “directed progression” by at least a century in the written trace. Indication of such experimentation is often through the criticism that it drew from other clerics; see the texts cited in Dalglish 1978.

79 This situation persisted even more strongly in the succeeding period in which the keyboard took over from the Hand as the chief means of pitch representation other than the staff itself.

80 See explicit citation of *menestrelles* in Slocum 1995, 263–65.

81 It seems possible that monophonic urban dance songs acted as a lower-voice *cantus firmus* in a dyadic texture as women started to improvise a harmonic line above them. This would offer a theory for the beginnings of polyphonic secular song akin to that offered by Gushee 1980, but with singers rather than instrumentalists on the lower parts.

82 Boen attended the University of Paris before 1358 and *Musica* dates from c.1355. See Gordon A. Anderson and Anna Maria Busse Berger, “Boen, Johannes” at <http://www.grovemusic.com>. Oresme entered the college of Navarre as a *Magister artis* in 1348 and was its Grand Master from 1356. *De commensurabilitate* was certainly written by 1377, when he refers to it in his translation of Aristotle's *De caelo*, but Grant thinks it was probably written between 1342 and 1362. Oresme 1971, 3.

83 Kaye 2001.

wrote both a treatise on money and a treatise on measurement of the motion of the heavens, *De commensurabilitate*, Oresme is a highly suggestive figure for Kaye's thesis. The final part of Oresme's *De commensurabilitate* is a dream vision in which the narrator witnesses a debate between Arithmetic and Geometry adjudicated by Apollo. Arithmetic worries that if the heavens really are governed by geometric relations, they would lack music.⁸⁴ As a representative of what is in the mid-fourteenth century the newer scientific mode of thinking, Oresme's Lady Geometry denies that music would be at all affected, praising the resulting novelty and decrying the musical monotony that would result from arithmetical proportionality:

What song would please that is frequently or oft repeated? Would not such uniformity [and repetition] produce disgust? It surely would, for novelty is more delightful. A singer who is unable to vary musical sounds, which are infinitely variable, would no longer be thought best, but [would be taken for] a cuckoo.⁸⁵

This is immediately followed by Arithmetic's final objection to Geometry: Arithmetic argues that geometric incommensurability in the heavens would invalidate the operation of the Great Year, claiming Pythagoras as an authority. Oresme's Lady Geometry, like Boen, treats the Great Year instead as a heretical untruth, which would make men into gods and deny the linear progress of time from Creation to Last Judgment. Although Apollo promises to announce a victor, in Oresme's treatise the dreamer awakes before Apollo can name one. Although it would be tempting to posit some connection between Oresme and Boen, it is safe to say that

both reflect an underlying intellectual shift in which scholastic views of measurement were playing catch-up with the situation on the ground in their respective fields (money and music).

For the *laici*—men and women alike—pitch was an aural space, a continuum of infinite possibilities within which there was room to maneuver, to make a song aurally more compelling. Perhaps the condemnation of the *caroles* and other music of the “*laici vulgares*,” including that of women, was not merely a case of suspicion of the possibilities of sexual interaction (either voyeuristic or tactile within the choreographic melee), but equally encompassed the dislike of such music's highly suggestive aural depiction of desire and resolution, that is, a dislike of the singing of the directed progression whose “appetite” was achieved by using pitches within the octave that were neither regularly lettered *consonantiae*, nor intervals of a regular size; although not mathematically irrational, they could not be rationalized within the existing theoretical system. The period at which this progression made the greatest (and irrevocable) inroads into lettered music making might have been one at which this anxiety was felt most keenly, resulting—as we have seen variously from Arnulf, Marchetto and Boen—in condemnation, theoretical legitimation, or a mixture of the two.

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84 This effectively re-opens an antique debate between the arithmetic Pythagoreans and the geometric Aristoxenians, which itself revolved around the correct calculation of the semitone. See Mathiesen 2002, 116.

85 Oresme 1971, 317. “Que est ista cantilena que placeret sepe aut multotiens repetita? Nonne talis uniformitas gignit fastidium? Ymo certa, et novitas plus delectat. Nec esset reputatus cantor optimus sed cuculus, qui non posset modulos musicos variare qui sunt variabiles in infinitum,” 316. See also Tanay 1999, 258.

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