

The Semi-Chromatic Genus of Juan Bermudo*

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ABSTRACT: In this article, I examine the semi-chromatic genus proposed by the sixteenth-century Spanish music theorist Juan Bermudo in his *Declaración de Instrumentos Musicales* (1555). Bermudo introduces the semi-chromatic genus to explain the musical practice of his time, which could not be fully accounted for by the traditional Greek genera—diatonic, chromatic, and enharmonic. First, I provide a brief historical overview of the concept of genus in Greek theory and its transmission into Renaissance thought, establishing the theoretical framework in which Bermudo was working. Then, I analyze Bermudo's description and examples of the semi-chromatic genus. I give particular attention to his use of the "rule of the closest approach" to justify chromatic inflections and dissonant intervals within otherwise diatonic contexts. I argue that the semi-chromatic genus does not function as a genus in the traditional Greek sense of a stable intervallic division of the tetrachord, but instead operates as a flexible and contextual theoretical framework through which Bermudo seeks to reconcile ancient theory with contemporary musical practice. Comparisons with theorists such as Andreas Ornithoparchus, Franchinus Gaffurius, Pietro Cerone, Gioseffo Zarlino, and Nicola Vicentino further demonstrate the originality of Bermudo's attempt to theorize chromaticism in Renaissance polyphony.

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[0.1] In 1555, Juan Bermudo published his third treatise on music theory, entitled *Declaración de Instrumentos Musicales*. This work reveals Bermudo's humanist and theoretical thought as well as an interest in the practical aspects of the music of his time. It is the first Spanish treatise that attempts to theorize both vocal (monodic and polyphonic) and instrumental music. Even though Bermudo builds his musical thought on traditional theories, most of his efforts are directed toward introducing his own understanding of musical practice, which results in the development of novel ideas (Otaola 2000, 14–15).⁽¹⁾ One of Bermudo's original contributions to Renaissance theory is the identification of a new genus derived from the ancient Greek genera, which he calls the semi-chromatic genus. This concept, however, differs in many respects from the three traditional genera. Unlike the established genera, which describe the intervallic organization of the tetrachord, the semi-chromatic genus behaves as a flexible theoretical construct developed to account for emerging contrapuntal and chromatic practices in the sixteenth century.

1. The Greek genera during the Renaissance

[1.1] According to ancient Greek theory, the notes that form the boundaries of a tetrachord are fixed, and the ones located between them are movable. Although many configurations of tetrachords were theoretically possible, Greek theorists typically organized them into three principal genera—diatonic, chromatic, and enharmonic—distinguished by their characteristic intervallic structures (Barker 1989, 12). **Example 1** shows a diagram of the three Greek genera as they appear in Heinrich Glarean’s *Dodecachordon* (Glareanus [1547] 1965, 53).⁽²⁾ From bottom to top, the diatonic tetrachord (on the left) consists of one minor semitone and two whole tones; the chromatic (in the center) consists of one minor semitone, one major semitone, and one semitone; and the enharmonic (on the right) consists of two dieses and one ditone.⁽³⁾ Of these, only the diatonic genus was used in plainchant and early polyphony; the other two genera were considered by musicians and theorists to be too difficult to sing (Mathiesen and Palisca 2010, 90–91). Nevertheless, the concept of musical genera persisted mainly due to its presence in Boethius’s *De institutione musica* ([1492] 1989). Beginning in the ninth century, this treatise had become a central foundation of Western music theory, and Boethius remained the dominant authority in theoretical discourse throughout the Middle Ages (Bower 1989, xiii). In *Declaración*, Bermudo (1555, fol. 13r–v) directly quotes Boethius when defining the three Greek genera.⁽⁴⁾

[1.2] Bermudo (1555, fol. 12r–13v) believed that much of the ancient music that made use of the Greek genera had been lost. Nevertheless, he maintained that some musicians of his own time were able to bring part of this music back to life. Of the three genera, only the diatonic and the chromatic were used again, although in a different way than how they were employed by the Greeks. In their place, Bermudo identifies what he calls the “semi-chromatic genus,” which blends elements of both the diatonic and chromatic genera.⁽⁵⁾ According to him, this new genus was replacing the diatonic genus in the musical practice of his time: “The diatonic genus still lives in plainchant, but it is so infirm that one day it will expire. In polyphonic composition, it is already on the verge of being lost”⁽⁶⁾ (fol. 12v). Bermudo claims to have “discovered” (fol. 86v) the semi-chromatic genus by listening to the music that was played in Spain during the sixteenth century and to have engaged in discussion with musicians to understand it better:

For a long time, I was deceived by what they played, even good players: because when I looked at the three genera of music, I saw that it belonged to none of them, and truly it wore my understanding. It sounded pleasing to the ear, but the mind protested. . . . When I asked the players why they played raised notes, they answered what I already knew, that it sounded good to them. . . . God willed that, while composing a little music in the chromatic genus, I discovered the cadences of the raised notes that good players now use. Observing what these players do, and considering the three genera of music, I found without doubt that they have composed a new genus, made from the diatonic and chromatic, which can be called *semi-chromatic*.⁽⁷⁾ (Bermudo 1555, fol. 86v)

Moreover, Bermudo acknowledges the theoretical possibility that other new genera could be created combining the diatonic genus with the enharmonic, or the chromatic with the enharmonic, though he notes that no one had done that so far. Even though Bermudo claims that he is the one who discovered the semi-chromatic genus, he was certainly not the first one to write about the mixture of genera. Earlier theorists were already aware that the music of their time corresponded only partially to the Greek system, and that it incorporated both diatonic and chromatic elements (Freis 1995a).

[1.3] For instance, Ramos de Pareia explores the mixture of genera in his canon “Tu lumen, tu splendor patris,” composed between 1470 and 1484.⁽⁸⁾ In this piece, the tenor part is sung three times: the first time using the diatonic genus, the second time using the chromatic genus, and the third time using the enharmonic genus. Therefore, staff lines and spaces in the score do not represent defined pitches. Instead, they indicate steps between the notes of the tetrachord, as shown in **Example 2** (Hu 2013, 81–84). For example, the first two syllables “tu” and “lu,” which are placed on the staff lines that would normally correspond to E and G, are sung at the distance of a minor semitone plus a tone when performed in the diatonic genus. When sung in the chromatic genus, however, the distance between the same two syllables changes to a minor semitone plus a major semitone; and when the enharmonic genus is used, it changes to a minor semitone or two dieses. This example, however, does not exhibit true mixture of genera since each genus is presented independently.

[1.4] Other theorists during the Renaissance discussed how genera complement each other. In 1532, Italian theorist and composer Giovanni Spataro wrote in a letter to Pietro Aaron that during an erudite gathering it was asked if music could be composed in genera other than the diatonic, and that “it was concluded that good harmony could not be achieved by one genus alone; it might be done in one passage, but the rest would not concord. . . . It was shown that the diatonic genus is not used exclusively in our ordinary harmony, but that the

other two genera assigned by Boethius lend support to it, in melodic progressions as well as in concordant intervals” (Blackburn et al. 1991, 553). Nicola Vicentino ([1555] 1996, 45), in his treatise *L'antica Musica Ridotta Alla Moderna Prattica*, asserts that while ancient musicians used the genera individually in their musical practice, musicians in his time mix the three genera. Around the same time, in *Le Istitutioni Harmoniche* from 1558, Gioseffo Zarlino states that

there are many things which in their simple state are not good but which become good and have an admirable effect when combined with other things. . . . [This] may be said of the last two genera. Alone they are insufficient to delight the ear, but accompanied by the diatonic and used suitably in a composition they are of great utility and convenience. . . . by combining their steps with diatonic steps we can use the perfect harmonies and at the same time obtain with the steps of these genera many imperfect consonances, major or minor, at many points in the diatonic scale where they are not ordinarily available, as is apparent to anyone who has experience in composition. (Zarlino [1558] 1968, 278)

In addition, Zarlino criticizes composers of his time who claim to compose in the ancient genera. According to him, they fail to write music in the same way the ancient musicians did. Instead, they combine the steps peculiar to different genera, as well as other intervals that do not belong to any of them. Zarlino concludes that these compositions are in a “genus invented by them and subject only to their own whims” (272).

[1.5] Theorists in Spain also subscribed to the idea that the chromatic and enharmonic genera existed to complement the diatonic genus. An early exposition of this theory can be found in Domingo Durán’s *Comento Sobre Lux Bella* ([1496] 1998). In it, Durán explains that the function of the chromatic genus is to complete the diatonic (123), although he only mentions it in relation to the B $\flat$ needed to avoid the tritone with F. Francisco Tovar discusses how the diatonic and chromatic genera are combined in Chapter 24 of *Libro de Música Práctica* (1510).⁽⁹⁾ Tovar’s approach is very similar to Durán’s, claiming that the combination of both genera is necessary to avoid the tritone between F and B. For Tomás de Santa María (1565, fol. 13v), the chromatic genus’s purpose is to divide the tones of the diatonic genus into minor and major semitones, which results in the black keys of the keyboard. Francisco Salinas (1577, 104; tr. in Daniels 1962, 183–84) goes even further and claims that chromatic and enharmonic genera can only exist as an accompaniment to the diatonic:

The diatonic alone can be found *per se*. For it forms the foundation for the others, and is annexed to them. . . . But although it [the diatonic] is more natural than the others, as Boethius says, it is nonetheless too hard, and the chromatic was invented to mollify its harshness. And yet the [chromatic] genus cannot be found without the diatonic, for it is nothing else than the diatonic made dense, so to speak. . . . The enharmonic also cannot subsist *per se*.

[1.6] Pietro Cerone states in his 1613 treatise *El Melopeo y Maestro* (254–56) that, in contemporary musical practice, only the diatonic genus can be used independently, whereas the chromatic and enharmonic genera cannot be effectively employed without being combined with the diatonic. According to Cerone, the chromatic genus works better with the diatonic than with the enharmonic because it enables the use of imperfect consonances that are unavailable in the diatonic genus. He also explains that chromatic pitches (i.e., black keys) are necessary to preserve the intervallic structure of the diatonic genus when a natural mode is transposed to a different final. Although Cerone acknowledges that the enharmonic genus may also be combined with the diatonic, he does not explain how such a combination would function nor provides any musical examples of it.

[1.7] Most of the treatises mentioned so far were written after *Declaración de Instrumentos Musicales*, and it cannot be asserted whether Bermudo was influenced by those that were published before.⁽¹⁰⁾ Nevertheless, because so many theorists of the time discuss the combination of the genera in detail, it is reasonable to assume that Bermudo was exposed to these ideas and that they had some degree of influence on his approach. Perhaps his strongest guide on the idea of combining the Greek genera comes from Franchinus Gaffurius. According to Stevenson (1960, 30), Gaffurius is Bermudo’s preferred modern authority, who is quoted at least forty-two times in the 1549 version of *Declaración*. In *De harmonia musicorum instrumentorum opus* ([1518] 1977), Gaffurius spends several chapters discussing the mixed genus, which he describes as the combination of the diatonic and the chromatic genera. This approach consists of adding two additional strings to the diatonic tetrachord, dividing the two whole tones into two semitones of different sizes. This results in a “tetrachord” of six strings (where the outer strings are a perfect fourth apart). Gaffurius’s description of the mixed genus, however, is purely theoretical, only including the distances between the strings. Bermudo, on the other hand,

does not define the semi-chromatic genus as a specific ordering of notes or distances between strings. Instead, he is concerned with how it appears in the musical practice of his time.

2. *Identifying a new genus*

[2.1] Before explaining his theory regarding the semi-chromatic genus, Bermudo (1555, fol. 56v) provides a brief tripartite argument proving that the music played in his time does not belong to any of the three ancient genera. First, it cannot be diatonic because it uses black keys. This apparently simple statement requires closer examination. Bermudo mentions multiple times in *Declaración* that the white keys belong to the diatonic genus and the black keys to the chromatic.⁽¹¹⁾ Furthermore, he claims that “playing with white and black keys jointly, making harmony, is to make a compound of two different musics having a generic difference”⁽¹²⁾ (fol. 73r). Despite this, the joint use of both white and black keys does not always imply the presence of a different genus nor the abandonment of the diatonic. For instance, Bermudo acknowledges that the two voices on *b*fa $\sharp$ mi—B $\flat$ and B $\sharp$ —result from the mixture of the diatonic and the chromatic genera (fol. 33v).⁽¹³⁾ Nevertheless, when discussing the soft hexachord on F, Bermudo clarifies that “although this hexachord includes the fa [B $\flat$] from the chromatic genus, it proceeds diatonically like the others, by two tones and a semitone”⁽¹⁴⁾ (Bermudo 1555, fol. 35r). Thus, Bermudo treats B $\flat$ as part of *musica recta* while still recognizing its chromatic nature. Similarly, when introducing the accidental modes (transpositions of the natural modes that require the use of black keys), Bermudo argues that the natural and accidental versions of a given mode do not differ in essence since they share the same intervallic structure:

If you wish to play the said first mode on C fa ut, you must give it the same octave (diapason), otherwise it will not be the first. The first [mode] on C fa ut has the same composition as the first on D sol re; so in what do they differ? . . . They differ from one another not essentially, since they share the same octave, but accidentally. A mode that preserves the octave of the first is essentially first; but if it happens to end on C fa ut, it will be called first accidental, because of the accident that has befallen it.⁽¹⁵⁾ (Bermudo 1555, fol. 73v)

These examples suggest that as long as the intervallic structure of the diatonic genus is preserved, Bermudo considers the music to be diatonic—even when it includes chromatic notes (i.e., black keys). Therefore, in Bermudo’s claim that music using black keys cannot be diatonic, the black keys must be interpreted as referring specifically to pitches that fall outside the diatonic collection.

[2.2] This view was shared by many other theorists of the time, who argued that the consistent chromatic inflection of a note throughout a piece did not demonstrate the use of chromaticism, but rather the transposition of a mode (Berger 1980, 21). One of them is Cerone (1613, 680), who discusses how *musica ficta* (which he defines as music written outside of its true tetrachords) can be transformed into *musica recta* through transposition. To exemplify this, he presents compositions that have flats and sharps in their key signature and makes clear that although these examples use accidentals, they still belong to the diatonic genus. He emphasizes this by stating that there is a big difference between *musica ficta* and chromatic music.⁽¹⁶⁾

[2.3] Although not explicitly mentioned, three conceptual categories can be inferred from Bermudo’s treatment of chromatic notes. The first comprises music that uses only white keys and may be called “purely diatonic.” The second includes music that employs white and black keys—diatonic and chromatic pitches—while preserving a diatonic intervallic structure. This category encompasses both transposed (accidental) modes and natural modes that incorporate B $\flat$. The third category is that of semi-chromatic music, which, as will be discussed below, not only combines white and black keys but also makes use of characteristic intervals of the chromatic genus within a diatonic context.

[2.4] Bermudo’s frequent use of the term “black keys” to describe accidental notes demonstrates that his understanding of the musical system is fundamentally shaped by the layout of the keyboard. Consequently, he treats diatonic pitches as fixed and chromatic ones as mutable. In this sense, the black keys cannot be regarded as inherently sharp or flat, since that depends on the tuning.⁽¹⁷⁾ When a black key functions as a sharp, it forms a major semitone with the white key below and a minor semitone with the white key above. Conversely, when a black key functions as a flat, it forms a minor semitone with the white key below and a major semitone with the white key above (Bermudo 1555, fol. 88r).⁽¹⁸⁾ Despite this flexibility, Bermudo generally refers to the common clavichord of his time, which included C $\sharp$, E $\flat$, F $\sharp$, G $\sharp$, and B $\flat$ as accidental

itches ([Otaola 2000](#), 143–46). This approach, which uses the keyboard as a reference, reveals a crucial aspect not only of Bermudo's thought, but also of sixteenth-century musical reasoning more broadly.⁽¹⁹⁾

[2.5] The second point in Bermudo's ([1555](#), fol. 86v) argument is that the music of his time cannot be chromatic because it employs intervals that do not belong to the chromatic genus. As an example, he mentions the use of two whole tones in a row, a succession of distances that is present only in the diatonic. This statement reveals Bermudo's way of thinking about intervallic relations between notes, which plays a crucial role in his identification of the semi-chromatic genus. For him, an interval belongs to a genus as long as it is contained within its structure, regardless of whether it is composite or incomposite. An interval is considered incomposite when no intermediate pitches divide it. For example, the ditone (major third) in the enharmonic genus, formed between *lychanos hypaton* and *hypate meson* (see Example 1), is incomposite because it is not subdivided by another string. Consequently, within this genus, this interval must be performed as a single step. By contrast, a composite interval contains one or more pitches within it. In the diatonic genus, the same interval of a ditone is divided into two whole tones. As a result, the distance of a major third may be realized either as a single movement or as two successive stepwise motions. Because Bermudo does not distinguish between composite and incomposite intervals when identifying them as part of a genus, he mentions the use of two whole tones in a row as evidence that the music of his time is non-chromatic. Had he considered only incomposite intervals as the defining elements of a genus—as do some other theorists, such as Vicentino—the presence of a single whole tone would have sufficed to claim that the music is non-chromatic, since this interval only appears in the chromatic genus as composite (formed by a minor and a major semitone).⁽²⁰⁾

[2.6] The question of whether composite or incomposite intervals define a genus has a long history in Renaissance theory. Some theorists argue that the presence of certain intervals unequivocally signals a specific genus when those intervals appear in incomposite form. For example, a melodic leap of a minor third would indicate the chromatic genus, since this is the only genus in which the minor third (or semiditone) occurs as an incomposite interval. Likewise, a leap of a major third is understood to signify the enharmonic genus, as it alone contains the major third (ditone) in incomposite form. This position is maintained even though both intervals can also occur in the diatonic genus as composite. Among the theorists who adopt this view are Vicentino and Spataro, who, in a letter to Aaron, states that “an ascending or descending minor third belongs to the chromatic species, and the major third is an enharmonic interval” ([Blackburn et al. 1991](#), 553).

[2.7] Perhaps one of the most famous debates regarding this issue took place between Vicentino and Vicente Lusitano in 1551. On one side, Vicentino argues that compositions that use diatonic intervals (major semitones and whole tones) as well as minor and major thirds are combining the three genera because these thirds belong to the chromatic and enharmonic genera rather than to the diatonic. On the other side, Lusitano contends that the presence of the thirds is not enough to make a composition non-diatonic. He argues that both of them also appear in the diatonic genus, but in the form of composite intervals. The minor third, for instance, comprises a minor semitone plus a whole tone, while the major third contains two whole tones. Moreover, only two consecutive semitones could signify the presence of the chromatic genus, while only a diesis could reveal the use of the enharmonic genus ([Berger 1980](#), 16). Other theorists who share Lusitano's point of view include Vincenzo Galilei, Giovanni Maria Artusi, and Zarlino, who in *Le Istitutioni Harmoniche* states that

it is also not impossible for something to be composite in one genus and simple or elemental in another, for a thing may be considered variously in different genera. So there is no error in placing the trihemitone and ditone, which are composite in the diatonic, in the other genera as elements. Although these two intervals are not actually found uncompounded in the diatonic genus, they are present potentially. . . . Therefore I say that the passage from one genus to another cannot be said to take place when composite intervals that are elements in another genus are used. But when the simple proper intervals peculiar to one genus and not found as simple or composite in another are introduced, this can be understood as a change of genus. ([Zarlino \[1558\] 1968](#), 274)

[2.8] Finally, Bermudo ([1555](#), fol. 86v) concludes his argument by saying that the music of his time cannot be enharmonic because it does not divide the semitone into dieses. In other words, the smallest interval used is the semitone.

3. Moving from imperfect to perfect consonances

[3.1] Bermudo's theory about the semi-chromatic genus is largely based on an idea widely held during the late Middle Ages and Renaissance: that whenever imperfect consonances move to a perfect consonance, they should move to the closest available one.⁽²¹⁾ He introduces this rule by indicating that "each time a unison or any of its compounds is to be given: it will not proceed from a major third, which is perfect, but rather from the minor, which is called imperfect. The minor third is closer to the unison than the major one" (Bermudo 1555, fol. 88r).⁽²²⁾ Whenever a major third precedes a unison, the lower voice should be played a semitone higher, or the upper voice a semitone lower, to make the interval a minor third instead. Similarly, if a third moves to a fifth, it should be major. If this third would normally be minor, the upper voice should be corrected by playing it a semitone higher. If this is not possible, the lower voice should be lowered by a semitone to obtain the major third. Fifths should be approached from minor sixths, meaning that in many cases, the upper voice of a major sixth will be lowered by a semitone or the lower voice raised by a semitone. Finally, octaves should be preceded by a major sixth; minor sixths before an octave are to be expanded to major sixths by adjusting one voice (Bermudo 1555, fol. 88r). In sum, unisons are preceded by minor thirds, fifths by major thirds or minor sixths, and octaves by major sixths. Bermudo illustrates this rule in the passage reproduced here as **Example 3**.⁽²³⁾

[3.2] An early exposition of this concept can be found in *Lucidarium in arte musice plane* ([ca. 1317–18] 1985) by Marchetto da Padova. He states that imperfect consonances must be as close as possible to the perfect consonances they approach and that this approach must be done in contrary motion. Marchetto explains that in some cases a chromatic note must be used so that the imperfect consonances are closer to the perfect consonances that follow them (Berger 1987, 122). Similarly, Zarlino indicates that "every progression from imperfect to perfect consonance should include in at least one part the step of a large semitone, expressed or implied. To this purpose the chromatic and enharmonic steps will be found very useful" (Zarlino [1558] 1968, 83). Cerone (1613, 572), on the other hand, acknowledges this rule but considers it arbitrary.

[3.3] An important aspect of this rule, as it is commonly applied, is that chromatic alterations are made only at cadences. Bermudo's version, however, extends its application to all instances where a perfect consonance follows an imperfect one. He makes this explicit at the end of the chapter that introduces the rule, stating that "all of the above should be observed not only in cadences, but whenever one arrives at perfect consonances in any manner whatsoever" (Bermudo 1555, fol. 88v).⁽²⁴⁾ Bermudo attributes this rule to Ornithoparchus (fol. 87v), who in turn derives it from Gaffurius.⁽²⁵⁾ In *Musice active Micrologus*, Ornithoparchus ([1517] 1973, 200) instructs readers to "let always the next perfect [consonance] follow the imperfect concords, as a unison after an imperfect third; a fifth after a perfect [third]; a fifth after an imperfect sixth; an eighth after a perfect [sixth], as Gafforus lib. 3 cap. 3 declares." This formulation closely matches Bermudo's.

[3.4] Gaffurius's version of the rule, however, differs in important respects from those of Ornithoparchus and Bermudo. In *Practica musicae*, he indicates that "when we seek a perfect concordance out of an imperfect one, at the end of a song perhaps or at the end of some part of its harmony, it is necessary that the voices converge in order to reach the nearest perfect concordance by means of the different motions of both parts" (Gaffurius [1496] 1969, 136–37). The first difference is that, according to Gaffurius, the rule should be applied specifically at cadences. This understanding of the rule is more closely aligned with common practice than Bermudo's. Second, although Gaffurius observes that minor sixths often resolve to perfect fifths and major sixths to perfect octaves, his formulation does not differentiate between types of imperfect consonances. As a result, both types of thirds may resolve to either unisons or fifths, and sixths to either fifths or octaves. This is made evident in the musical example he provides, which includes a major third progressing to a unison, a minor third to a perfect fifth, and a minor sixth to a perfect octave (Gaffurius [1496] 1969, 136).

[3.5] Bermudo (1555, fol. 88v) identifies two scenarios where an exception should be made to this rule. First, it should be avoided if its use results in fa contra mi between perfect consonances. **Example 4** shows the ending of Bermudo's illustration of this exception. According to the rule, the C in the upper voice should be raised to C# in order to form a major sixth with the E in the tenor before resolving outward to a perfect octave (D–D). However, this is not possible because the bass remains on Cb. The second exception occurs when one of the two voices forming a perfect fifth moves by step to create a sixth, after which it is followed by the other voice to make a fifth again. In this case, the intervening sixth may be either major or minor.

[3.6] In addition to this rule, Bermudo (1555, fol. 131v–132r) notes that some musicians also avoid placing two imperfect consonances of the same type in succession in parallel motion. That means that when two thirds

or two sixths occur consecutively, one should be major and the other minor. Bermudo adds that, if this is not possible to achieve with natural notes, accidentals should be used. Nevertheless, although he argues that this practice produces good music because the voices move by different intervals, which adds variety, he does not present it as obligatory and instead leaves its use to the musician's discretion.

4. *The semi-chromatic genus*

[4.1] Bermudo does not set forth a clear definition of what constitutes the semi-chromatic genus, nor does he provide a set of criteria for recognizing it. Instead, he presents a series of musical examples that demonstrate its use. His main way to identify this genus is the presence of an interval that is unique to the chromatic genus within a diatonic context. It is not stated, however, whether the examples provided constitute an exhaustive account of all possible manifestations of this genus.

[4.2] The first use of the semi-chromatic genus that Bermudo mentions (1555, fol. 86v) is a third formed by two semitones. He argues that this interval is unique to the chromatic genus, as it cannot be found in either of the other two genera. It appears when G is raised by a semitone before moving to A, after which the same voice continues to B $\flat$. As a result, G $\sharp$ and B $\flat$ form a diminished third (see **Example 5**).

[4.3] In m. 5, the G in the cantus (upper voice) forms a minor sixth with the B in the tenor, which then resolves outward to an octave. Following the rule of the closest approach, the G was raised by a semitone to form a major sixth instead. Similarly, in m. 6, the B in the cantus was lowered to B $\flat$ so that it forms a minor seventeenth (a compound minor third) with the G in the bass, allowing the voices to resolve inward to a double octave on A. In this case, the B was flattened because the G in the bass cannot be raised by a semitone since it forms an octave with the G $\natural$ in the alto voice (Bermudo 1555, fol. 87r).

[4.4] Regarding this diminished third, Bermudo (1555, fol. 12v) notes that although it comes from the chromatic genus, it is different from the one used by ancient musicians. He explains that historically the interval contained a minor semitone and a major semitone (see Example 1), whereas in his own time it is constructed from two minor semitones. Despite this difference, Bermudo treats both versions as equivalent, since in both cases the resulting interval is a diminished third.

[4.5] Another instance in which the chromatic genus appears within a diatonic context occurs when a whole tone is divided into a minor and a major semitone, as shown in **Example 6**. On the second beat of m. 3, the tenor forms a sixth with the bass. Because the voices move outward to an octave, the C is raised by a semitone to C $\sharp$. The C on the first beat, however, cannot be raised, since it forms a perfect fifth with the F in the bass. If it were to be raised, it would create an augmented fifth. Bermudo rejects this possibility, stating that “a fifth of four whole tones cannot occur” (1555, fol. 138r).⁽²⁶⁾ As a result, a major semitone appears from C to C $\sharp$, followed by a minor semitone from C $\sharp$ to D. The same logic applies to the alto in m. 4 and the soprano in m. 6. For Bermudo, the presence of the major semitone, which is not found in the diatonic genus, serves as an indicator of the chromatic genus.

[4.6] Bermudo (1555, fol. 138v–139r) states that the succession of a major and a minor semitone had not previously been used in Spain, and that he had not encountered it in written sources. Nevertheless, he defends its use, arguing that he is certain that it was played in ancient times when the chromatic genus was still in practice. This example is a rare instance in which Bermudo explores the implications of extending a theoretical idea beyond the established musical practice of his time. One point that he does not address is that the interval between the first and last notes of this segment (C and D) would be understood as a diminished third in the chromatic genus but, in this context, it is reinterpreted as a whole tone, since its notated form—from C to D—corresponds to the diatonic whole tone.

[4.7] Although this example and the previous one both feature chromatic diminished thirds, they differ in their internal structure: in Example 5, this interval is formed by two minor semitones, whereas in Example 6, it consists of a major and a minor semitone. Bermudo (1555, fol. 138v) remarks that the major semitone, which he refers to as the “unsingable semitone,” should not be considered unsingable in this context.⁽²⁷⁾ For him, while this designation for the major semitone is appropriate in diatonic music, where this interval does not occur, the major semitone is present in the chromatic genus and should consequently be regarded as singable in semi-chromatic music.

[4.8] Throughout the late Middle Ages and the Renaissance, many theorists considered chromatic semitone motion (e.g., G–G♯–A) highly undesirable.⁽²⁸⁾ Nevertheless, some admit that such dissonant motion might occur, but only when the arrangement of the notes makes it absolutely necessary (Berger 1987, 85). In *Lucidarium in arte musicae planae* ([ca. 1317–18] 1985), Marchetto de Padua discusses *permutatio*, which occurs when the whole tone is divided into two semitones. One of the examples he provides to illustrate this concept corresponds closely to the first three beats of m. 3 in Example 6: the upper voice moves C–C♯–D, while the lower voice goes F–E–D (Herlinger 1985, 270–73). As in Bermudo’s example, the C♯ is required to form a major sixth before the octave, while the preceding C must remain natural to avoid forming an augmented fifth with F. Similar examples are found in Pietro Aaron’s *Lucidario in musica* (1545) and in Ramos de Pareia’s *Musica Practica* ([1482] 1901).

[4.9] Bermudo also identifies the presence of the semi-chromatic genus in the use of augmented seconds (see **Example 7**). In m. 3, the G in the tenor voice must be raised to G♯ to form a major sixth with the B in the bass and resolve outward to the octave on A. This G is preceded in m. 2 by E–F. Usually, the F would also be raised by a semitone (E–F♯–G♯) to avoid the augmented second between F and G♯. In this case, however, such alteration is not possible because the F forms an octave with the F♯ in the soprano voice. Bermudo remarks that the resulting step combines a whole tone and a major semitone. Because this interval does not occur in the diatonic genus but does appear in the chromatic, he interprets its presence as evidence of the semi-chromatic genus (Bermudo 1555, fol. 87v).

[4.10] Example 7 is also noteworthy for its use of an antiquated cadential formula involving a double leading tone (in this case F♯ and C♯) in m. 4, although Bermudo does not acknowledge it. This type of cadence was characteristic of the late fourteenth and early fifteenth centuries but had fallen out of use by the second half of the fifteenth century (Donington 1963, 84). Nevertheless, it appears in *Declaración* as a result of applying the rule of the closest approach. In this example, the F in the soprano forms a sixth with the A in the bass. Since these voices resolve outward to an octave (G–G), the F must be raised to F♯ to create a major sixth. Similarly, the C in the alto must be raised to C♯ in order to form a major third with the bass and resolve outward to a fifth (G–D).

[4.11] Another interval that is used in the semi-chromatic genus is the diminished fourth, which is formed by a whole tone and two minor semitones. This interval can appear melodically as in **Example 8**. In this example, the upper voice descends stepwise from F to C♯, outlining a diminished fourth. The final pitch, C, must be raised by a semitone to form a major sixth with the E in the bass before resolving outward to an octave. Within this diminished fourth, the whole tone occurs between E and D, while minor semitones appear between F and E and D and C♯.

[4.12] The same diminished fourth can also occur between voices, as shown in **Example 9**. In this case, the C in m. 7 must be raised to C♯ to form a major third with the A in the bass before resolving outward to a fifth. As a result, the C♯ forms a diminished fourth with the F in the second tenor (Bermudo 1555, fol. 139r–v).

[4.13] Bermudo provides one more example of the use of the diminished fourth, shown in **Example 10**. In m. 1, the alto’s C and the bass’s E form a sixth, which would normally resolve to an octave. Because this interval must be a major sixth, the C is raised to C♯. In this case, however, the expected resolution to the octave is truncated by the entrance of the tenor voice. The D, which would have been the goal of the alto’s C♯, is transferred to the tenor. Therefore, the alto is freed from its expected resolution and leaps to F instead. This leap (C♯–F) produces the diminished fourth. A similar situation occurs in mm. 2–3 in the soprano voice, where G♯ leaps to C. Bermudo (1555, fol. 139r–v) argues that since the diminished fourth frequently appears melodically by step, there is no reason not to use it as a leap as long as it is duly prepared.⁽²⁹⁾

[4.14] Regarding this interval, Bermudo states that “there is only one new thing in what is played in our time, which I have deliberately sought in ancient sources but have not found: a fourth composed of a whole tone and two minor semitones” (1555, fol. 12v).⁽³⁰⁾ At first glance, saying that there is only one new thing in the music of his time seems to contradict his own claim that the semi-chromatic genus is a recent invention. However, what he considers new about semi-chromatic music is not the intervals themselves, but the combination of diatonic and chromatic intervals in the same music. Indeed, Bermudo acknowledges that all the intervals discussed above (except for the diminished fourth) were already used by ancient musicians as part of the chromatic genus—he even calls them *consonancias resuscitadas* (revived consonances). The diminished

fourth, by contrast, is considered genuinely new since it cannot be derived from any tetrachord of the three genera.

[4.15] In Bermudo's theory, the semi-chromatic genus does not permit the unrestricted use of chromatic intervals. Rather, such intervals may appear within a diatonic context—where they would normally be prohibited—only when necessary, and only if they are properly prepared and resolved. This principle is evident in all the examples discussed above. In each case, the use of a chromatic interval arises either from the strict application of the rule of closest approach (as in Examples 5, 8, and 9) or from the need to avoid a more severe dissonance that would result from applying that same rule (as in Examples 6 and 7). Bermudo (1555, fol. 67r–68r) is extremely critical of musicians who “make, *without necessity*, raised notes”⁽³¹⁾ (emphasis added). In Chapter 14 of the fourth book of *Declaración*, titled *Contra algunos barbaros tañedores* (“Against certain barbarous players”), he claims that the indiscriminate use of black keys corrupts the modes and is therefore against good art. He concludes the chapter by asserting that “to introduce raised and lower pitches beyond what I establish in chapter 48 of this fourth book constitutes a barbarism in music” (fol. 68r).⁽³²⁾ Bermudo is even more restricting in his treatment of plainchant. In this context, he mentions that

every singer should refrain from using B $\flat$ and from any conjunct inflection . . . unless it is required for the completion of a fifth or a fourth in plainchant; or in order to avoid fa contra mi in prohibited places in polyphony; or because the melody and logic demand it. . . . It is well known among musicians that, in order to avoid fa contra mi in the octave or fifth and in all their compounds, it is necessary to employ the chromatic genus. . . . B $\flat$ is a black key, every black key belongs to the chromatic genus, and this genus is forbidden (*unless required by a particular necessity*); therefore B $\flat$ is likewise forbidden, since it belongs to the chromatic genus. By the same reasoning by which we have shown that B $\flat$ is generally forbidden, it is also proven that conjunct inflections, or divisions of the tone involving $\sharp$ [i.e., sharps], cannot be used, since they too are pitches of the chromatic genus, and consequently are accidental pitches and thus forbidden, *except in particular cases*.⁽³³⁾ (Bermudo 1555, fol. 38v–39r; emphasis added)

[4.16] The logic underlying the semi-chromatic genus outlined so far—that it arises from the application of the rule of closest approach and is identifiable through the presence of intervals unique to the chromatic genus within a diatonic context—appears to break down when Bermudo turns to dissonant intervals that exceed the tetrachord, such as the tritone, the diminished fifth, and the seventh.⁽³⁴⁾ These intervals are discussed in Book V, Chapter 32 of *Declaración*, which examines the use of dissonance in polyphonic music. Bermudo (1555, fol. 138r–140r) explains that, although these intervals are dissonant within the diatonic genus, their use is nevertheless permitted in semi-chromatic music, as long as they are properly prepared and resolved. However, unlike in the cases examined earlier, Bermudo does not account for these intervals by relating them to the chromatic genus. This absence becomes particularly evident in the examples he provides. In his discussion of the tritone, for instance, the interval occurs between F and B, two pitches that belong to the diatonic collection (see **Example 11**). A similar situation occurs in the example of the diminished fifth, formed between B and F (see **Example 12**), as well as in the example of the seventh (see **Example 13**), where two sevenths are formed between diatonic notes: first from B to A, and then from E to D. These cases do not conform to the previously established criteria, as they involve neither chromatic pitches nor intervals uniquely associated with the chromatic genus. Instead, Bermudo appears to extend his criterion: an interval does not need to originate in the chromatic genus in order to be called semi-chromatic, but may also earn such status by being dissonant within a diatonic context.

[4.17] As Otaola (2001, 274–75) observes, Bermudo understands the perception and acceptance of dissonance as dependent on psychological habit. Historical changes in the treatment of intervals such as the fourth, third, and sixth lead him to believe that an interval's degree of consonance or dissonance is relative. Bermudo explains that “the use of the ear plays a major role in determining what counts as a consonance; for this reason, consonances have changed over time. What is accepted and recognized as a consonance in one period may be rejected in another, and what is rejected in one period may later be accepted” (1555, fol. 65v).⁽³⁵⁾ The only intervals fully rejected by Bermudo are the diminished and augmented octaves: “Fa contra mi in the octave cannot be prepared, because we must preserve the true composition of the unison” (fol. 140vr).⁽³⁶⁾ This reasoning allows Bermudo to accept the dissonant intervals present in the semi-chromatic genus and to explain its growing prominence in the musical practice of his time. “I know a player, and not a bad one, who plays

two minor semitones one after the other, and considers it good music. Only trained ears will tolerate this” (fol. 66r).⁽³⁷⁾

5. Conclusion

[5.1] Bermudo’s humanistic interests can be observed in his writings about the semi-chromatic genus. Like many theorists of his time, he is interested in reviving ancient musical concepts such as the Greek genera. Rather than treating these theories as fixed and immutable, though, Bermudo adapts them to explain the new musical practices of his own time. This approach leads him to develop original theoretical ideas such as the semi-chromatic genus, an attempt to reconcile the ancient concept of genera with the chromatic practices of sixteenth-century Spanish music.

[5.2] Although Renaissance theorists were aware of how chromaticism could be incorporated into diatonic structures, only Bermudo considered it necessary to define this phenomenon as a distinct theoretical concept. His exposition of the semi-chromatic genus is not always systematic, and it relies more on concrete musical examples than on a fully developed theoretical framework. Nevertheless, Bermudo goes beyond merely describing contemporary musical practice by seeking to explain the logic behind it. To do so, he adheres to a rather strict version of the rule of the closest approach. Every example of the semi-chromatic genus involving chromatically altered pitches is explained and justified through this rule.

[5.3] The semi-chromatic genus is introduced by Bermudo as the combination of the diatonic and chromatic genera. Thus, its presence is primarily identified when intervals that otherwise belong exclusively to the chromatic genus (such as the diminished third) appear within a diatonic context. However, this straightforward definition is undermined when Bermudo claims that using diatonic dissonances is also characteristic of the semi-chromatic genus. In doing so, he expands the concept beyond the mere presence of chromatic intervals and turns it into a more flexible framework that accommodates properly prepared and/or resolved dissonances within polyphonic music.

[5.4] This may explain why Bermudo never defines the semi-chromatic genus in the same manner as the traditional genera, which are understood as divisions of the tetrachord that produce a specific set of intervals. Consequently, the semi-chromatic genus cannot serve as the basis for constructing a mode as the ancient genera could. In reality, Bermudo does not define a new genus in the traditional sense but rather identifies recurring uses of chromaticism and dissonances within a diatonic context.⁽³⁸⁾ Unlike the ancient genera’s fixed intervallic structures, the semi-chromatic genus’s chromatic alterations are temporary and contextual. In this sense, the *mixed genus* discussed by Gaffurius, defined as a fixed intervallic structure, is closer to the Greek concept of genus. A more accurate term for Bermudo’s theory might be “semi-chromatic art,” an expression occasionally used by Bermudo himself to describe the music written in this style. The ambiguity of the term “semi-chromatic genus,” together with the lack of a precise theoretical foundation, may help explain why the concept had little influence on later musical thought.

[5.5] Bermudo’s semi-chromatic genus also reflects a broader transformation in the musical thought of the sixteenth century. By attempting to explain contemporary chromatic and contrapuntal practices through the lens of the ancient genera, Bermudo exposes the growing inadequacy of tetrachordal models for describing newer polyphonic music. In this context, the semi-chromatic genus represents a transitional theoretical concept situated between ancient traditions and later approaches grounded in contrapuntal practice, keyboard-oriented thinking, and the controlled use of chromaticism.

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Footnotes

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1. Educated at the Universidad de Alcalá, one of the principal humanist centers in Spain during the sixteenth century, Bermudo belonged to an intellectual environment that emphasized the classification and dissemination of knowledge through print. Ramírez (2019) shows that printed books played a central role in processes of identity formation and knowledge transmission in sixteenth-century Spain. He also identifies a proliferation of vernacular publications that promoted self-instruction and made specialized knowledge accessible to broader audiences. Bermudo's *Declaración de Instrumentos Musicales*, written in Spanish and intended for both novice and experienced musicians, can be understood within this wider humanist context.

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2. Glarean had a direct influence on Bermudo. In the 1549 version of *Declaración de Instrumentos Musicales*, Bermudo includes Glarean in his list of authorities under the category of Christian theorists. According to Stevenson (1960, 32), Glarean “serves as his most recent foreign authority.”

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3. Bermudo's understanding of the minor and major semitones is based on Pythagorean tuning. When a black key functions as a sharp, it forms a major semitone with the white key below and a minor semitone with the white key above. Conversely, when a black key functions as a flat, it forms a minor semitone with the white key below and a major semitone with the white key above (Bermudo 1555, fol. 88r).

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4. “Despite his own thoroughly progressive and courageous spirit, the classical theorist whom Bermudo quotes more freely is none other than the paladin of the medieval universities, Boethius. . . . Correctly apprehended, Boethius therefore teaches musical truths that are still valid, maintains Bermudo” (Stevenson 1960, 30).

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5. Bermudo had already mentioned the semi-chromatic genus in the 1549 version of *Declaración*. In it, he claims that “about the semi-chromatic [genus], which the talents of Spain have augmented, not only exists no treatise, but I have been the one to name it and the first one to write and speak about it” (Bermudo 1549, fol. 142r). (Pues del semichromatico que las habilidades de España han augmentado: no tan solamente no ay arte, pero el que le puso nombre, y el primero que en scripto del ha hablado yo he sido).

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6. “El genero diatonico en el canto llano vida tiene: mas esta tan enferma, que un dia ha de espirar. En la composicion de canto de organo perdido va.”

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7. “Mucho tiempo estuve engañado en lo que tañen, aun buenos tañedores: porque mirando a los tres generos de Musica: vey a que ninguno dellos era, y en verdad que me fatigava el entendimiento. Sonava bien a los oydos: y reclamava el entendimiento. . . . A los tañedores que preguntaba, porque hazian puntos intensos y sustentados: respondian lo que yo sabia, que le sonavan bien. . . . Quiso Dios, que componiendo una poca de Musica en el genero chromatico: halle las clausulas de los sustentados y de los intensos, que ahora usan los buenos tañedores. Mirando a lo que hazen los señalados tañedores, y los tres generos de musica: halle infaliblemente, que tienen compuesto un nuevo genero del diatonico y chromatico: el qual se puede llamar semichromatico.”

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8. The original version of this work is lost, but Gaffurius provides the tenor part (shown in Example 2) in his *Apologia* (Blackburn et al. 1991, 67).

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9. “Francisco Tovar is the Spanish theorist whom he [Bermudo] perhaps cites most respectfully. He quotes him at least four or five times in the 1549 *Declaración*. At fol. 56, col. I, of the 1555, he specifically commends him for what he had taught concerning proportion” (Stevenson 1960, 33).

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10. For instance, even though it was written by recent a Spanish theorist, Bermudo mentions Marcos Duran's *Lux Bella* only one time in the 1549 version of *Declaración* (Stevenson 1960, 33).

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11. See [Bermudo 1555](#), fol. 27r, fol. 43r, and fol. 73r.

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12. “Tañer por teclas blancas y negras juntamente, haciendo harmonia: es de dos musicas diferentes con diferencia generica hazer una compuesta.”

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13. In the second book of *Declaración*, devoted to plainchant, Bermudo advises musicians to “never use B $\flat$, unless it is required for the completion and perfection of a fifth or a fourth” ([Bermudo 1555](#), fol. 23r).

(“Nunca hagan B $\flat$: sino fuere para complimiento y perfection de algun diapente, o de algun diatessaron”).

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14. “Aunque esta deducion tenga el fa de genero chromatico: procede diatonicamente como las otras por dos tonos y un semitono.”

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15. “Si por Cfaut quereys tañer el dicho modo primero: aveys de dar el mesmo diapasson: so pena de no ser primero. El primero por Cfaut tiene la mesma composicion que primero por Dsolre: luego en que diffieren? . . . Diffiere uno de otro no essencialmente, pues traen un mesmo diapasson: sino accidentalmente. Un modo que guarda el diapasson del primero, essencialmente es primero: mas si le acaecio fenecer en Cfaut, llamarse ha primero accidental: por el accidente que le sobrevino.”

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16. “mucha diferencia ay entre Musica finta ò ficta, y Musica Cromatica” ([Cerone 1613](#), 680).

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17. Bermudo’s ideas on temperament are grounded in Pythagorean tuning. According to Jacobs (1968), this position conflicted with contemporary tuning experiments in Spain involving equal temperament on the vihuela, in which frets divided the whole tone into two equal semitones. For Bermudo, this practice is unacceptable. He responds by developing a new tuning system for the vihuela that approximates mean-tone temperament, in which major thirds are adjusted by a fraction of a comma ([Freis 1995b](#)). Otaola (1996) attributes Bermudo’s rejection of equal temperament to its elimination of the distinction between major and minor semitones. Such a division of the whole tone would have profoundly affected the theoretical basis of the semi-chromatic genus, since the presence of the major semitone frequently serves as the primary indicator of chromatic intervals. It can therefore be inferred that, for Bermudo, as long as the distinction between minor and major semitones is preserved, the specific temperament has little or no bearing on the foundations of the semi-chromatic genus. This view coincides with Jacobs’s (1968) observation that the types of temperaments used in Spain during the Renaissance had minimal impact on the practice of musica ficta, affecting primarily the number of available accidentals on the keyboard.

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18. Although Bermudo discusses keyboard instruments with split black keys designed to accommodate both sharps and flats simultaneously, he still conceptualizes each pair as a single key ([Otaola 2001](#), 29–30).

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19. Michael Dodds (2024) identifies three historical layers underlying the shift from modes to keys. One of these layers involves a transformation in the way of conceptualizing tonal space. Particularly over the course of the seventeenth century—although already observable in earlier sources such as Bermudo—the keyboard gradually supplanted the gamut as the dominant background pitch system and became the primary instrument of reference.

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20. In fol. 13r, Bermudo (1555) talks about intervals that appear as incomposite in some genera but composite in others.

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21. Some theorists that discuss a version of this rule include Marchetto of Padua, Petrus frater dictus Palma ociosa, Jehan de Murs, Prosdocimus de Beldemandis, Ugolino of Orvieto, Nicolaus Burtius, Ramos de Pareia, Franchinus Gaffurius, Giovanni del Lago, Pietro Aaron, Giovanni Maria Lanfranco, and Gioseffo Zarlino

(Berger 1987, 122–29).

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22. “Todas la vezes que uviere de dar unisonus, o alguna de sus compuestas: no verna de tercera mayor, que es perfecta: sino de la menor, que se dize imperfecta. Mas cercana esta la tercera menor de unisono, que la mayor.”

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23. All the musical transcriptions in this article were made by the author.

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24. “Todo lo sobredicho se guarde, no tan solamente en las clausulas: pero todas las vezes que vinieren a las consonancias perfectas de cualquier manera que sea.”

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25. Ornithoparchus is Bermudo’s second preferred modern authority after Gaffurius. In the 1549 version of *Declaración*, Bermudo mentions Ornithoparchus’s *Micrologus* twenty-four times (Stevenson 1960, 30).

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26. “quinta de quatro tonos no se puede dar.”

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27. Vázquez (2015, 104–5) points out that theorists disagreed over which semitone was singable and which was unsingable. For example, Santa María, Martínez de Bizcargui, and Zarlino regarded the major semitone as singable and the minor semitone as unsingable, whereas Tovar, Espinosa, Gaffurius, and Burtius held the opposite view. Vázquez argues that these differences resulted from the tuning system adopted by each theorist.

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28. Such theorists include Jacques de Liège, Pseudo-Tunstede, Ramos de Pareia, Franchinus Gaffurius, Franciscus de Brugis, and Ornithoparchus (Berger 1987, 217).

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29. Cerone (Cerone 1613, 679) warns that “although it is true that the diminished fourth by leap. . . is sometimes used in a part of polyphonic singing, nevertheless it should not be used too often, so as not to depart from the diatonic genus.” (aunque es verdad, que la Quarta diminuyda y de salto. . . se usa avezes en una pate de Canto de Organo; con todo esto no se deve usar muy a menudo, por no se apartar del Genero Diatonico).

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30. “Solo una cosa nueva ay en lo que se tañe en este tiempo: la qual aposta he buscado en lo antiguo, y no lo hallo, es una quarta que hazen de un tono y dos semitonos menores.”

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31. “hazen *sin necesidad* puntos intensos y sustentados.”

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32. “hazer puntos intensos y remisos, fuera de lo que determino en el capitulo quarenta y ocho de este quarto libro: es barbarismo en Musica.” Chapter 48 of the fourth book in *Declaración*—*When to play in black keys* (Cuando tocan en teclas negras)—introduces the rule of the closest approach.

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33. Todo cantante se guarde de hazer b $\flat$ mol, y de toda conjuncta. . . si no fuere para complimento del diapente, o diatessaron en el canto llano; por no dar fa contra mi en lugares defendidos en canto de organo; o porque la melodia del canto y razon lo pide. . . . Cosa notisima es a los musicos, que por no dar fa contra mi en octava, o quinta y en todas sus compuestas: de necesidad han de usar el genero chromatico. . . . El b $\flat$ mol es tecla negra, toda tecla negra es del genero chromatico, y este genero es defendido (si no fuere por necesidad particular) luego tambien es defendido el b $\flat$ mol, pues es genero chromatico. Con la mesma probacion que probamos ser defendido generalmente el b $\flat$ mol: queda provado no poderse usar las conjunctas, o divisiones de tono de $\sharp$ quadrado: porque tambien todas ellas son bozes del genero chromatico, y por consiguiente son bozes accidentales y asi defendidas, sino fuere en casos particulares.”

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34. Like Bermudo, other theorists discuss whether the tritone and the diminished fifth could be considered diatonic. For instance, in *Comento Sobre Lux Bella*, Domingo Durán states that singing a tritone would corrupt the diatonic genus: “If we were to give a fourth three whole tones, we would corrupt the [diatonic] genus, and it would thus become a tritone, and we would be singing outside the [diatonic] genus. . . . Therefore, in four-voice writing, one should preserve two whole tones and a semitone; and if no semitone is provided by the plainchant, it must be supplied by inflection. For the flat and the semitone were mainly introduced to moderate and temper the harshness of the tritone” (Durán [1496] 1998, 131). Similarly, Glarean states that the “tritonus, a hard fourth, . . . clearly unsuitable in the diatonic genus, arises from three whole tones, and no one uses it as a leap in a song” (Glareanus [1547] 1965, 59). While he allows the diminished fifth, he restricts its use to stepwise motion, whether ascending or descending, and prohibits it as a leap. Zarlino adopts an even stricter position, stating that “the tritone, semidiapente, and others like them must not be used, however, despite the fact that certain moderns write them and justify the progressions as chromatic, for these intervals are not formed from the harmonic numbers, and it is impossible for them to produce a good effect in a melody” (Zarlino [1558] 1968, 110).

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35. “El uso del oydo es gran parte para hazer una consonancia: y por esto segun la variedad de los tiempos se han mudado las consonancias. La que en un tiempo aceptan y reciben por consonancia, en otro la reprueban: y la que en un tiempo reprueban en otro la reciben.”

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36. “Fa contra mi en octava no tiene preparacion: porque avemos de guardar la verdadera composicion del unisonus.”

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37. “Tañedor conosco, y no malo, que suffice dos semitonos menores uno en post del otro: y lo tiene por buena Musica. Solos los exercitados oydos suffriran esto.”

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38. This interpretation aligns with Haar's (1977) observation that much sixteenth-century chromaticism consists of local chromatic alterations within a diatonic context rather than the adoption of a fully chromatic framework. According to him, chromaticism usually appeared as a kind of melodic writing that intentionally used both the chromatic and diatonic semitones. In those situations where “unexpected accidentals . . . give the impression of having dropped from the sky, with no preparation and no consequences,” Haar observes that they appear in “movement from one sonority to another, orderly in plan if sometimes daring in the motion of individual voices” (Haar 1977, 393). Haar concludes that, during this period, composers developed an acceptance for false relations created through the use of written accidentals, even though there is often no melodic need satisfied by this chromaticism. “It seems clear that such accidentals were regarded as salutary condiment to the blandly diatonic modal framework within which sixteenth-century musicians worked” (Haar 1977, 415).

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