



GIOSEFFO ZARLINO

The Art of Counterpoint

GIOSEFFO ZARLINO

PART THREE OF

LE ISTITUTIONI HARMONICHE, 1558

translated by

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and

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LE ISTITVTIONI HARMONICHE

DI M. GIOSEFFO ZARLINO DA CHIOGGIA;

Nelle quali; oltre le materie appartenenti

ALLA MVSICA;

Si trouano dichiarati molti luoghi
di Poeti, d'Historici, & di Filosofi;

Si come nel leggerle sà potrà chiaramente vedere.

¶ Οὐδὲ διδόντος, οὐδὲν ἰσχύει φέροντος.
Καὶ μὴ διδόντος, οὐδὲν ἰσχύει φέροντος.



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CHAPTER I

What Counterpoint Is and Why It Is So Called

[147] I have given sufficient attention in the two preceding books to the first part of music—the theoretical or speculative—and have covered things that are pertinent and necessary to the musician. There remains for me to discuss in the two books that follow the second or practical part of music. This consists of the composition of songs or melodies for two or more voices. Practitioners call it the art of counterpoint.

Since counterpoint is the principal subject of this part, we shall first see what it is and why it is so named. I consider counterpoint to be that concordance or agreement which is born of a body with diverse parts, its various melodic lines accommodated to the total composition, arranged so that voices are separated by commensurable, harmonious intervals. This is what in Chapter 12 of Part II I called “proper harmony.”¹ It might also be said that counterpoint is a kind of harmony that contains diverse variations of sounds or steps, using rational intervallic proportions and temporal measurements; or that it is an artful union of diverse sounds reduced to concordance. From these definitions we may gather that the art of counterpoint is a discipline which teaches one to recognize the

1. “Proper harmony (*harmonia propria*) . . . is a composition or mixture of high and low sounds, mediated or not [by other sounds], that strikes the hearing smoothly. This kind of harmony arises from the parts of a vocal composition as they proceed in concordance from the beginning to the end, and it has the power to induce the mind to various passions. It arises not only from consonances but also from dissonances, for good musicians in their harmonies exert every effort to make dissonances accord and to be consonant with marvelous effect. Thus we may consider proper harmony from two aspects: perfect and imperfect. The perfect is that in which many parts sing together in a composition in such a way that the outer parts are mediated by others; and the imperfect is that in which only two parts sing together without being mediated by any other part.

“Improper harmony (*harmonia non propria*) may better be called harmonious consonance than harmony, because it does not contain any part movement (*modulatione*), despite the fact that it has the outer sounds mediated. This kind of harmony has no power to move the mind to various passions as does proper harmony, which consists of many improper harmonies.” (Part II, Chap. 12.)

various elements in a composition and to arrange the sounds with proportional ratios and temporal measure.

Musicians once composed with only a few dots or points. Hence they called this *counterpoint*. They placed one against another as we now place one note against another. A dot represented a tone: just as a point is the beginning of a line as well as its end, a sound or tone marks the beginning and end of a melody and forms the consonance out of which counterpoint is made. Perhaps it would have been more reasonable to name this *countersound* rather than *counterpoint*, since one sound was placed against the other. Not to depart from popular usage, I have continued to call it counterpoint, by which we understand point against point or note against note.

There are two kinds of counterpoint: simple and diminished. The simple is composed solely of consonances and equal note-values—whatever these may be—placed against one another. Diminished counterpoint has dissonances as well as consonances, and may employ every kind of note-value, as the composer wishes. It proceeds by intervals or singable spaces, and its values are reckoned according to the measure of its *tempus*.² It is in the nature of counterpoint that its various sounds or steps ascend and descend simultaneously in contrary motion, using intervals whose proportions are suited to consonance; for harmony has its origin in the joining together of a diversity of opposed elements. Counterpoint is considered best and most pleasing when the best manners, ornaments, and procedures are gracefully employed, and when this is done according to the rules that the art of good composition requires. [148] It should be observed that by melodic interval is meant the silent passage made from one sound or step to the next; it is intelligible though inaudible.

2. *Tempus* is the scheme of time measurement that defines the number of semi-breves in a breve.

CHAPTER 2

The Invention of Clefs and Written Notes

Every mathematical science relies upon demonstration rather than argument and opinion. Certain principles, called premises, are granted, and a demonstration is made which resolves everything easily and clearly. To arrive at such a demonstration the means must be found for making it accessible to our judgment. Mathematicians, understanding this, devised signs, not separate from matter except in essence, yet distant from it. These were points, lines, planes, solids, numbers, and countless other characters, which are depicted on paper with certain colors, and they used these in place of the things symbolized. In the same manner musicians, to make their speculations and demonstrations evident and susceptible to judgment, realizing that sounds could in no way be written or otherwise depicted on paper or other material, devised certain signs or characters which they called figures or notes, and named them as we shall see later.

They named the strings of their instruments and steps of vocal melodies with these six syllables in this order: ut, re, mi, fa, sol, la, as I have shown in Part II, Chapter 30. They called this series a “deduction” or “reduction,” that is, a leading of the voice from one place to another. They considered it a natural progression of the six syllables. Because this deduction may begin in any of three places—on the degrees C, F, or G—Guido divided his Introduction¹ into three parts. He applied these syllables

1. What is meant by the “Introduction” (*Introduttoreio*) of Guido may be identified through a correspondence Zarlino had with Giovanni Vincenzo Pinelli in Padua. Pinelli sought through his correspondents to obtain a full and correct copy of Guido of Arezzo’s writings on music. With a letter dated Venice, 30 October 1579, Zarlino sent Pinelli his copy of the “Introduttoreio di Guidone,” pointing out that it was incorrect and incomplete, particularly the song *Gliscunt corda meis hominum mollita camenis*, which, he says, “is very long and contains all the art of music of his time” (Milan, Biblioteca Ambrosiana, MS R 119 sup., fol. 174). Pinelli asked Girolamo Mei to compare Zarlino’s copy to Mei’s. Mei reported that his copy of “L’Introduttoreio di Guidone” began: “Temporibus nostris . . .” and ended “sed solis philosophis et peroptimus est,” after which fol-

Example 36.



example, when the substitution of the \flat for the \natural reduces the interval by a small semitone. The same effect may be gained with the \sharp . In the first example of the next illustration [Ex. 37] there is a whole tone; in the second there is a large semitone.

Example 37.



All this has related to the diminution of the interval of a whole tone through the subtraction of a small semitone by means of the signs illustrated. The same signs may be used to augment the large semitone by adding a small semitone to it, as shown in Ex. 38.

Example 38.



A word of advice: to make a melody easy to sing, the note marked with a \flat should be preceded by a lower note and that marked with \flat or \sharp should be preceded by a higher one. This is to make the parts, as I said, easier to sing, for these intervals are simpler to produce, as experience has shown. It would not be a great error, however, to use these signs otherwise.

CHAPTER 26

*What Is Required in Every Composition:
First, the Subject*

We now come to counterpoint. Before beginning, it is necessary to establish what are the essentials of every good counterpoint, indeed of every good composition, those features whose omission would result in an imperfection. The first is the subject, without which nothing can be made. Just as the agent in any operation has regard for the end that moves him to action and bases his work on certain material called the subject, so the musician in his operations, considering the end which impels him to work, finds the material or subject upon which he bases his composition. He then proceeds to perfect his work in accordance with its proper end. His end is the same as that of the poet: to serve and to please, as Horace clearly puts it in his *Art of Poetry*: [172]

Aut prodesse volunt, aut delectare poetae:
Aut simul et iucunda, et idonea dicere vitae.¹

The poet's subject is [an incident of] history or a tale. Whether the story is of his own invention or borrowed from others, he adorns and polishes it with various embellishments as it pleases him. He omits nothing fit and suitable to delight the minds of his listeners, achieving thus something that is magnificent and marvelous. The musician has the same end, namely to serve and to please the minds of his listeners with harmonic accents, and he also has a subject upon which to construct his composition, which he adorns with various movements and harmonies to bring maximum pleasure to the audience.

The second requirement of a composition is that it be composed principally of consonances, and that it contain incidentally (*per accidente*)

1. *Ars poetica*, 333–34: “Poets aim either to benefit or to amuse, or to utter words at once both pleasing and helpful to life.” Trans. by H. Rushton Fairclough in Horace, *Satires, Epistles and Ars Poetica*, Loeb Classical Library (London, 1929), p. 479.

also many dissonances so arranged and placed as to conform with the rules which will be given later.

The third requirement is that the voices of a composition proceed properly, that is, through true and legitimate intervals born of the sonorous numbers, so that by their use good harmonies result.

The fourth condition to be met is that of variety in the movement of the parts and in the harmony; for harmony is nothing other than diversity of moving parts and consonances, brought together with variety.

The fifth is that a composition be ordered under a prescribed and determined mode, or tone,² as we like to call it. It must not be haphazard.

The sixth and last requirement, though others could be added, is that a musical composition shall complement the text, that is the words. With gay texts it should not be plaintive, and vice versa; with sad subjects it should not be gay.

So that everything will be understood fully, I shall speak of each requirement individually, in order of convenience and need.

Beginning then with the first requirement, I say that the subject of every composition is that part of a composition upon which the composer exercises his inventiveness to produce the other parts, however many voices these may be. The subject may be one of several kinds. It may be a creation of the composer himself, a product of his genius. It may be taken from a composition of another, fitted to his own and adorned by various parts, as he pleases to the best of his talent. Such a subject may be of several kinds: it may be a tenor or other plain-chant part, or a part from a polyphonic composition [*canto figurato*]. It may also consist of two or more voices, one of which may follow another in a fugue³ or consequence, or be organized in some other manner. Indeed, the types of such subjects are potentially infinite in number.

After a composer has found his subject, he proceeds to write the other parts in the manner we shall investigate. This process is called by musi-

2. *Tuono*, meaning one of the eight Gregorian tones or modes.

3. *Fuga* is here translated as “fugue,” although in *Zarlino* it does not have the modern meaning but rather that of our “canon.” See the definition of fugue (*fuga*) and consequence (*consequenza*) below, Chap. 51.

cians “making counterpoint.” But should he not have a subject to begin with, the part that sounds first, or which he writes as a beginning, whatever it may be and however it may begin—whether a high, middle, or low part—this shall be the subject. Upon it he will adapt the other parts in fugue, consequence, or however he pleases, suiting the music to the words and to the meaning they contain. But when a composer derives his subject as he composes the parts of a composition, that is, when he derives one voice from another and arrives at the subject as he composes the parts all together, then that fragment of it from which he derives the parts of the rest of the composition is called the subject. Musicians call this “composing by fancy” (*comporre di fantasia*). It could as well be called counterpointing, or making counterpoint, as one chooses.

CHAPTER 27

Compositions Must Be Composed Primarily Of Consonances and Only Incidentally of Dissonances

As I have said, every composition, counterpoint, or harmony is composed principally of consonances. Nevertheless, for greater beauty and charm dissonances are used, incidentally and secondarily. [173] Although these dissonances are not pleasing in isolation, when they are properly placed according to the precepts to be given, the ear not only endures them but derives great pleasure and delight from them. They are of double utility to the musician (in addition to other uses of no small value). The first has been mentioned: with their aid we may pass from one consonance to another. The second is that a dissonance causes the consonance which follows it to sound more agreeable. The ear then grasps and appreciates the consonance with greater pleasure, just as light is more delightful to the sight after darkness, and the taste of sweets more delicious after something bitter. We daily have the experience that after the ear is offended by a dissonance for a short time, the consonance

following it becomes all the more sweet and pleasant. Therefore the musicians of older times held that compositions should include not only perfect and imperfect consonances, but also dissonances; for they realized that their work would achieve more beauty and charm with them than without them. Had they composed solely with consonance, they might have produced agreeable effects, but nonetheless their compositions (being unmixed with dissonance) would have been somehow imperfect; and this from the standpoint of singing as well as of composition, for they would have lacked the great grace that stems from these dissonances.

Though I have said that in composing we use consonances primarily, and dissonances incidentally, it must not be thought that these dissonances can be placed in counterpoints or compositions without rule or order, as is sometimes done, for confusion would result. Care should be taken to use them in an orderly, regular fashion, so that all may turn out well. Two things must be borne in mind above others, and I believe all the beauty and charm of every composition resides in these: the movements of the melodic parts, ascending and descending in similar or contrary motion; and the proper collocation of the consonances in the texture. Of these things, with God's help, I intend to speak; indeed this has always been my main purpose.

By way of introduction I wish to set forth certain rules given by older composers, who understood the need for such things. With these rules they taught the way to order properly the consonances and the dissonances in compositions. However imperfect these rules are, I shall offer them in the usual order, together with a commentary, to demonstrate how they are to be understood. I shall add some other rules which are not only useful but necessary to those who wish to compose properly and elegantly, as well as rationally. Thus everyone may learn how to dispose the consonances and dissonances and where to use the major and minor [consonances].

CHAPTER 28

A Composition Must Begin with a Perfect Consonance

Musicians in the past, as well as the best of the moderns, believed that a counterpoint or other musical composition should begin on a perfect consonance, that is, a unison, fifth, octave, or compound of one of these. But they did not believe the rule to be inviolable, that no composition could ever begin with an imperfect consonance. Perfection is characteristic of the end and not of the beginning of a thing. So we must not interpret this rule too simply, for when the counterpoint begins to sound at the same time as the subject, one of the perfect consonances mentioned may stand at the beginning. But for reasons of greater beauty and grace in the counterpoint or for greater convenience, musicians sometimes begin the parts one after another rather than together, with the same succession of notes, as in a fugue or consequence. This renders a counterpoint not only delightful but also artful. In such cases they may enter with any consonance they choose, perfect or imperfect, for rests would have intervened in one of the parts. [174] However, the interval between the initial notes of the two voices should be one of the perfect consonances named above, or a fourth. This is not unreasonable, for one begins on the extreme or middle points of the modes on which the melody is founded. These are the natural and most essential steps, as we shall see elsewhere.¹ This is what I believe the ancients meant when they said that a counterpoint should begin on one of the perfect consonances but added that this rule was not inevitable or necessary but optional with the composer. Therefore, when we wish to begin a counterpoint in fugue or consequence, we may use any perfect or imperfect consonance we like, including the fourth. Not that the voices first sing together with this consonance; I mean a fourth from the beginning of the subject to the entrance of the counterpoint or vice versa, as may be seen between the subject of Ex. 39, a melody in the sixth mode,² and the fourth

1. Part IV, Chap. 30.

2. In the traditional numbering.

counterpoint. One begins on F and the other on C, so that they are a fourth apart in their respective beginnings. We shall [not]³ observe the stated rule that the parts must enter on a perfect consonance, since in the fourth counterpoint they join on a major third, one on E and the other on C. Thus the precept is seen to be optional rather than vital or necessary. Nor can these two parts offend the ear. Though their beginnings are related by a fourth, they first sing together at the distance of a ditone, or major third.

Example 39.

Example 39 consists of four systems of musical notation, each with a subject line and four counterpoint examples. The subject is in the Sixth Mode. The first system shows the subject in the Sixth Mode and four counterpoint examples: 'First example, above' (treble clef), 'Second example, above' (treble clef), 'Third example, below' (bass clef), and 'Fourth example, below' (bass clef). Each system shows the subject line and the four counterpoint examples in a single system.

When a subject begins with rests, the same rules must be observed. This may occur when we take the tenor of a canzone, madrigal, or other song, and compose other parts on it. These added parts must then begin in the manner demonstrated, observing what has been said. For instance, see Ex. 40, the subject of which is in the fourth mode. [175]

Moreover it is necessary—indeed, important—to organize compositions so that the beginnings of the voices correspond among themselves

3. This negative must be supplied to make the statement consistent with what precedes and follows.

Example 40.

Example 40 consists of two systems of musical notation. The first system shows the subject in the Fourth Mode and two counterpoint examples: 'First example, above' (treble clef) and 'Second example, below' (bass clef). The second system shows the subject in the Fourth Mode and two counterpoint examples: 'First example, above' (treble clef) and 'Second example, below' (bass clef).

and are related through a perfect or imperfect consonance. Thus no dissonance should be heard between entrances, or the singers would be disturbed and tend to err, entering on the wrong note, particularly if they are insecure. It is permissible for the two lower parts to enter a fourth apart, and to have no other entrance below them with which they form octaves. To begin this way is particularly acceptable in the plagal modes (the odd-numbered ones), for there the voices begin on the principal steps of the mode of the composition. It would not be right to deprive the composer of such liberty, especially in two-voice writing, and subject him to an unnecessary limitation. For that kind of beginning has been used by many able musicians, both older and modern, among them Josquin, Mouton, and others. An example is Adriano's motet "Laus tibi sacra rubens."⁴ Many others from ancient and modern writers could be cited. I myself took the license as all may see, in the three motets, "Osculetur me oculis oris sui," "Ego rosa Saron," and "Capite nobis vulpes parvulas,"⁵ which I wrote for five voices. They exemplify what I speak of here.

This concession is therefore made to all composers. However it is not praiseworthy when two parts enter at a distance from the subject, above

4. Adrian Willaert, in *Cipriani musici excellentissimi cum quibusdam aliis doctis authoribus motectorum* (Venice, 1544). This motet is ed. Walter Gerstenberg in *Des Chorwerk*, 59 (Wolfenbüttel, 1956), 13–21.

5. Numbers 5, 16, and 18 in *Josephi Zarlini Musici quinque vocum moduli, motecta vulgo nuncupata . . . Liber primus* (Venice, 1549).

or below, of a fourth *and* a fifth, for then they would form a second between themselves. The entrance would then sound dissonant, and one of the voices might begin out of the mode of the composition. Although generally inadvisable, such an entrance is acceptable when the principal subject of a composition is so written that one part sounds above the other in fuge or consequence and two of them enter a fourth or fifth apart singing the subject in the upper or lower register. The same holds also when one part starts a fourth away from the subject and the other a fifth or other interval. These exceptions may be observed in the six-voice motet "Pater de coelis deus"⁶ of P[ierre] de la Rue, and in my six-voice motet "Virgo prudentissima,"⁷ in which three voices are in fuge or consequence at the same intervals, two above and one below. There is some disturbance to the ear when the voices enter.

When I speak of subject, I mean the part that is the principal one and leader of all the others accommodated to it in consequence. It is not necessarily the first voice to sound but that which sets and maintains the mode and to which the other voices are adapted, whatever their distance from the subject. See for example my seven-voice setting of the Lord's prayer, "Pater noster," and the angelical salutation, "Ave maria,"⁸ wherein the subject of the three voices that sing in fuge is the second rather than the first to be heard.

In such cases, therefore, it is legitimate to place in a composition many parts that are discordant in their beginning sounds, particularly when one does not want to, or indeed cannot, disturb an artful subject. [176] To do so, in fact, would be insane. In other cases, however, I do not recommend it, for it is disturbing to the singers.

6. *Tertius tomus Evangeliorum* (Nuremberg, 1555).

7. Number 5 in *Josephi Zarlini Clodiensis musici . . . Modulationes sex vocum, per Philippum Iusbertum musicum Venetum collectae* (Venice, 1566), ed. in G. Paolucci, *Arte pratica di contrappunto* (Venice, 1765-72), 2, 250-64.

8. Both under No. 19 in *Moduli*, 1549; also as No. 13 in *Modulationes*, 1566.

CHAPTER 29

*Two Consonances Having the Same Ratio
May Not Be Placed One after the Other
Ascending or Descending without an
Intervening Interval*

The ancient composers prohibited a succession of two perfect consonances of the same genus or species whose extremes are in the same ratio, when the parts moved one step or more. That is, they did not allow two or more unisons, octaves, fifths, or similar intervals in succession, such as shown in Ex. 41. They realized that harmony results from things that are diverse, discordant, and contrary to each other rather than alike in every way. If harmony is born from this variety, it follows that in music not only must the parts be distant from one another with respect to pitch,

Example 41.

but their movements should be different, and they should contain diverse consonances of various ratios. The more harmonious a composition seems to us, the more variety we will discover in it: in the vertical distances between its parts, in its movements, and in its proportions. Perhaps the ancients saw that consonances used together in any other way were alike in procedure and proportion, though their extremes might show variety of pitch. They recognized that such likeness did not produce harmonic variety, and decided, correctly, that perfect harmony consists of variety not so much in the locations or distances between the parts as in their movements, melodic lines, and proportions.

They saw that the consecutive use of two consonances with similar proportions was merely a change of pitch which did not produce a good harmony despite a variation in the extremes. Thus they did not wish that two or more perfect consonances having the same ratio should be used consecutively with the parts ascending or descending together, without an intervening interval. Particularly they forbade the unisons, which lack extremes, differing locations, or distance, and are devoid of all diversity of motion; in short, they are entirely alike. In singing them one does not experience any difference in pitch, for there is no vertical distance between the voices, because both occupy the same location. See Ex. 41 and Chapter 11, where the unison was defined. Nor is there any diversity of melodic motion, for both parts proceed by the same intervals. The same may be said about two or more octaves, though their extremes differ at least with respect to pitch. Consequently they afford the ear somewhat more pleasure than the unison, the octave being varied in its extremes. Two or more fifths are also not good, since these progress by similar steps and proportions; and some of the ancients felt that they resulted more in a kind of dissonance than in harmony or consonance. [177]

Thus they held that when a perfect consonance was reached, it was an end, a perfection toward which music strives. They did not want to repeat perfection many times so as not to satiate the ear. Their fine and useful observation confirms how true and good are the workings of wondrous nature, which does not produce identical individuals in a species but always somehow varied. And variety is very pleasing to our sentiment.

Every composer ought to follow the beautiful order of nature, and he will be considered excellent in proportion to the resemblance of his procedures to those of nature. Numbers and proportions invite us to variety, for in them we do not find two similar proportions following one another, such as 1:1:1, 2:2:2, etc., which would form two unisons; or 1:2:4:8, which is a geometric¹ rather than harmonic progression and gives three consecutive octaves; or 4:6:9, which gives two consecutive fifths. So we must not write consecutive unisons, octaves, or fifths, for the natural cause of consonance—the harmonic number—does not contain in its progression or natural order two consecutive similar proportions, as may be seen in Chapter 15 of Part I. Such consonances, though obviously incapable of producing a dissonance between the parts, give a poor and unpleasant effect that is difficult to describe.

There are, then, many reasons why we should not violate this rule; that is, we should not write consonances consecutively in the manner mentioned. Rather we should seek to vary constantly the sounds, consonances, movements, and intervals; and thus through diversity we will attain a good and perfect harmony. Let us disregard the fact that some do the contrary more from presumption than from reason, as we may see in their work. Let us not emulate those who brazenly violate the fine traditions and good precepts of an art and science without offering reasons for doing so. Instead we ought to imitate those who have observed these good precepts, conform to their practice, and embrace them as our masters, leaving aside the poor and seizing upon the excellent. Just as a painting in many colors pleases the eye more than a monochrome, varied consonances and melodic movements please the ear more than the simple and invariant, and therefore a diligent composer uses variety in his work.² This is what the more diligent ancients desired, and we are much indebted to them.

1. A geometric progression is one in which the ratios between successive terms are equal. So in a series a, b, c , $a:b = b:c$. For example in the progression 4:6:9, $4:6 = 6:9$. The middle term is a geometric mean, also known as a mean proportional. When Zarlino speaks of equal division, he means the geometric mean.

2. Part of this paragraph was quoted and translated by Thomas Morley in *Plaine and Easie Introduction to Practicall Musicke* (London, 1597), ed. R. Alec Harman (New York, 1952), pp. 254–55.

We may add that, for the reasons given, two or more imperfect consonances also should not be written consecutively, such as two major thirds, minor thirds, major or minor sixths, as shown in Ex. 42. These

Example 42.

Major thirds

Minor thirds

Major sixths

Minor sixths

not only go against what I said of the perfect consonances, but they produce a bitterness in their progression because in the movement of the parts there is missing the interval of the large semitone, in which all the good of music resides. Without this interval every progression of harmony is hard, bitter, and nearly dissonant. This effect also rises from the lack of harmonic relationship between the parts when two major thirds or two minor sixths are heard in succession, as we shall see. In sum we must take care that in every simultaneous progression or movement of vocal parts, at least one of them, if possible, should move through the interval of the large semitone. This is to make the progression of the harmonies which springs from the movements made by the parts of the composition more delightful and sweet. [178]

Now this can be achieved easily if consecutive consonances are of different species. After the major third or sixth may be written the minor, or vice versa. After the major third will come the minor sixth, or vice versa. The major sixth will follow the minor third, and vice versa. There is no better reason for forbidding consecutive perfect consonances than

for forbidding imperfect ones. The former, to be sure, are perfect consonances; yet the latter are perfect in their proportions. Just as it cannot be said truthfully that one man is more man than another, it cannot be held that a lower major or minor third or sixth is greater or less than a higher one, or the reverse. Since for this reason it is forbidden to place two perfect consonances of the same species consecutively, it is the more forbidden to write two imperfect ones of the same proportion, because these are not so consonant as the perfect.

It is true that two consecutive minor thirds, ascending or descending one step (so-called conjunct or continuous movement), or two consecutive major sixths are tolerable. Although the large semitone is not heard in these progressions, and the thirds are naturally rather plaintive and the

Example 43.

Examples of thirds

Examples of sixths

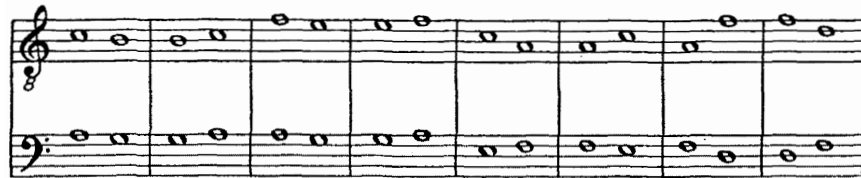
sixths somewhat hard, the slight difference found in the movements of the parts presents a certain variety. The lower part always ascends or descends by a small whole tone, and the upper voice by a large whole tone, or vice versa.³ This pleases the ear in a manner difficult to explain, all the more when the voices of the parts are separated by a distant harmonic relation. But when the parts move more than a step (which we

3. In Zarlino's hypothetical vocal tuning a small 10:9 tone always follows a large 9:8 tone when the movement is diatonic.

shall call disjunct or separate movement) under no circumstances may we use two or more similar consonances in succession. In addition to violating the rule given above, the parts will then not be separated by a distant harmonic relation, as may be seen in Ex. 43.

When it is necessary to write consecutive thirds or sixths, to avoid errors we should write the major one first and then the minor, or vice versa. We may use either conjunct or separate movement, and all will turn out well. It must be noted that when a third follows a sixth, or vice versa, one must be major and the other minor; and this we observe whether the parts move down or up. However, when one of the parts is stationary, this rule cannot be observed without breaking others, to be presented later, that are advantageous to the composition. In such cases we must follow the major third with a major sixth and the minor third with a minor sixth, and vice versa, as in Ex. 44. [179]

Example 44. Illustration of everything that has been said



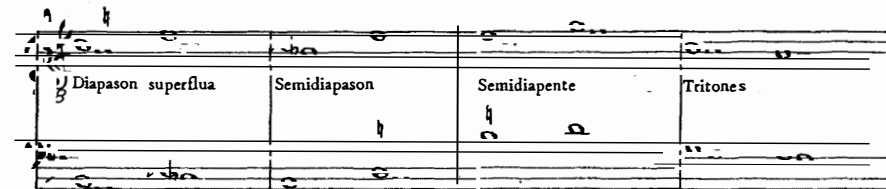
We should add that, since neither consecutive perfect or imperfect consonances are allowed, consecutive fourths are likewise forbidden in any composition, although some write them in short sections of their compositions called *falso bordone*. The fourth is without doubt a perfect consonance (as I have shown), but when I discuss writing for several voices, I may have to return to this question.

When the Parts of a Composition Are in Harmonic Relation, and How the Semidiapente and Tritone May Be Used

Before proceeding, I wish to explain what I mean by the harmonic relationship between parts that I mentioned above. When we say that the parts of a composition do not have a harmonic relation between their voices, we mean that the parts are separated by an augmented or diminished diapason, or by a semidiapente or tritone or similar interval. The harmonic relation does not involve merely two simultaneous notes distant in pitch. It occurs rather among four notes contained in two voices that form two consonances, as can be seen in Ex. 45.¹ Between the notes of one part and those of the other are found the augmented and diminished diapason, semidiapente, and tritone.

To purge our compositions of every error and to assure their correctness, let us avoid this relation. Especially when we compose for two

Example 45.



1. That is, what is now called the false relation or cross relation.

voices, it is very annoying to sensitive ears, inasmuch as such intervals are not found among the sonorous numbers, and are not sung in any genus despite contrary views of a few. However that may be, they are very difficult to sing and have a poor effect. I am appalled at those who have not avoided having these intervals sung in certain parts of their compositions. I cannot imagine any reason for them. Although it is less evil to find this relation between two parts and two melodies than to hear it in one part, it is still bad and the ear is still offended. For a blow inflicted by several, unless it is slighter, is just as offensive as if it came from one. So these intervals, which are not admitted in melodic motion, must also be avoided in the relations between parts. This will have been done when, if the parts are interchanged, harmonically proportioned intervals of the diatonic genus result, that is if from a note of the lower part we can ascend by means of a legitimate and singable interval to the following sound of the upper part, and vice versa. [180] This can be done when nonharmonic relations are not present between the two parts of a composition, and when the parts can be interchanged without hindrance. Such voice exchanges are shown in Ex. 46.

Whenever such an interchange of the parts does not produce true, legitimate, and singable intervals, the progression should be avoided, especially if we wish to compose correctly and without error. It is true,

Example 46. *Exchange of the parts of the previous example*

The image shows two systems of musical notation, each consisting of two staves. The first system shows a voice exchange between two parts. The second system shows the parts interchanged, resulting in harmonically proportioned intervals.

however, that in compositions for many voices it is often impossible to avoid such relations and not to arrive at such an impasse. It sometimes happens that a composer writes on a subject that leads him to offend the precept, and, constrained by necessity, he will let it pass, as when the parts cannot otherwise be sung comfortably or when he wishes to write a fugue or consequence, as we shall see later. But even when necessity thus presses him, he should at least see that these defects occur in diatonic steps and in those which are proper and natural to the mode and not in those which are accidental, that is, those indicated in a composition by the signs ♯, ♮, and ♭. For used in this way they do not have such a poor effect.

It should be noted that I call natural those errors which arise in the manner demonstrated above in the first example; and accidental those which result when between the true steps of the mode there is inserted another of a different order which causes the difficulty. In the third mode,² for example, the middle step, B♯, is often dropped in favor of the accidental B♭. Between this and the preceding or succeeding note there arises one of the difficulties mentioned, as may be seen in Ex. 47. This is

Example 47. *First example*

The image shows a single staff of musical notation with a treble clef and a key signature of one flat. The notation shows a sequence of notes with a semidiapente interval.

the more unpleasant, since the true step of the third mode, B♯, is missing from its proper place, and the accidental B♭ is present instead.

Although for the reasons given we cannot use these [diminished and augmented] intervals in this manner, we may on occasion write the semidiapente in a single percussion. We may do so when it is immediately succeeded by the ditone [Ex. 48]. Here [Ex. 49] the parts may be

Example 48. *Second example*

The image shows a single staff of musical notation with a treble clef and a key signature of one flat. The notation shows a sequence of notes with a semidiapente interval.

2. The traditional numbering.

Example 49. *Third example*

exchanged without disadvantage. This is practiced by the best modern musicians, as it was in the past by some of the older ones. Not only the semidiapente, but also the tritone is sometimes allowed, as we shall discover. We must take care, however, that the semidiapente or tritone be preceded immediately by a perfect or imperfect consonance. [181] The semidiapente is then tempered by the preceding and following consonance in such a way that the effect is no longer poor, but good, as experience has proved.

CHAPTER 31

*Considerations about Nonharmonic Relations
In Compositions for Many Voices*

When relations such as the tritone, semidiapente, semidiapason, and those like them are placed alone in counterpoints without being accompanied by other intervals, they are among the things in music that can hardly ever please. We must strive to avoid them in simple compositions (those for two voices), as I have said, or whenever a section of a composition is for two voices alone, when the effect would be the same. In neither case will what we call proper harmony¹ be achieved. That is, we do not hear that full body of consonance and harmony whose extreme sounds are divided by intermediate sounds. Instead we hear what we call improper harmony,² consisting of two voices only, without intermediate sounds. Since the ear grasps two voices better than three or four, we ought for

1. In Part II, Chap. 12, Zarlino called this kind "perfect proper harmony." See Chap. 1, n. 1, above.

2. In Part II, Chap. 12, this was called "imperfect proper harmony."

this reason to aim at the greatest variety of harmony in two-voice writing and to avoid the relations mentioned, which is not difficult to do.

In compositions for many voices, on the other hand, I believe that it is not so vital to avoid nonharmonic relations, both because it is so difficult to do faithfully (as I have said) without great inconvenience, and because variety in such pieces consists not only of changing consonances but also of varying the harmonies and the arrangement of intervals in the individual chords, which is not true of two-voice music. I say this because often there are things in themselves bad and harmful which when mixed with other elements become good and beneficial, just as there are in medicines and electuaries deadly ingredients which in combination with other substances are healthful. So it is in music: there are intervals and relations that give little pleasure in themselves but have wonderful effect when combined with others.

It seems to me that we ought to consider these relations one way when they are used alone and another way when they are used with accompaniment. The variety of the harmony in such accompaniments does not consist solely in the variety of the consonances—as in two voices—but in the variety of the chords. This results from the position of the note that divides the fifth in a chord, or from the position of the note that forms a third or tenth above the lowest part of a chord. When it is minor, the arrangement of the chord is determined by or resembles an arithmetical proportion or mean. When it is major, the arrangement of the chord is determined by or resembles the harmonic mean. On this variety depend all the diversity and perfection of harmonies. Because, as I shall explain elsewhere, in a perfect composition the fifth and third or their compounds must continually be present. Apart from these two consonances the ear cannot desire a sound within or beyond the extremes of the two taken together that is entirely different from those within these extremes. For within appear all the different sounds needed to make harmonies diverse. While the extremes of the fifth are invariable and always in the same ratio (excepting certain cases where it is used in another imperfect form, as I have shown),³ the extremes of the thirds are

3. Part II, Chap. 41 ff. Zarlino means that the fifth will be tempered in certain tunings but never in just intonation, which he assumes for vocal music.

placed differently within the fifth. I do not mean that such thirds differ in proportion but in location. For, as I have said elsewhere,⁴ when the major third is below, the harmony is gay, and when it is above, the harmony is sad. So from these diverse positions of the thirds placed in counterpoint between the extremes of the fifth—or above the octave—comes harmonic variety.

If we want to vary the harmony and still observe as far as possible the rule given in Chapter 29, we must write the thirds in the following manner. Having first placed a major third, which forms the harmonic mean, we then place a minor third, which forms the arithmetical division. [182] However this is not so binding in writing for many voices as for two. We could not observe this alternation so easily if we were preoccupied with the [false] relations mentioned, for while trying to avoid them we would be continuing for some time one of the two divisions without relief. The result would be a composition in which at times sad music would be set to happy words, or vice versa, without justification. I do not mean that a composer may not write two consecutive arithmetical divisions, but that he should not write many one after the other, at the risk of lending the ensemble a melancholy air. But writing many consecutive harmonic divisions does not give offense as long as they are formed on the natural steps or from justifiable accidentals, because then the harmony has its parts arranged in order and achieves its ultimate end and the best possible effect.

Yet when two parts ascend or descend either by one or two steps the mean should vary, particularly when the [false] relation of the tritone or semidiapente might occur between the two parts involved. This would happen in the case of a single step with two consecutive major thirds, and in the case of two steps with two minor thirds. But when the relationship is that of the semidiatessaron and between accidentals such as *b* and *♯*, or when only one of these signs is present, we need not avoid it at all. Since they are both harmonic means, they will obviously give a good effect, despite their lack of variation.

No one ought to be surprised at this. Diligent examination of the
4. Chap. 10.

consonances arranged according to the one and the other methods will reveal that the arithmetical order—that resembling the arithmetical proportion—is somewhat removed from perfection of harmony, because its elements are not arranged in their natural locations. On the other hand a harmony resulting from harmonic division or resembling it is perfectly consonant, because the parts of this division are collocated and ordered according to the proper gradation of this proportion, and according to the natural sequence of the sonorous numbers. This may be seen in Chapter 15 of Part I.⁵ Of this enough for now; I may return to the subject later to clarify it.

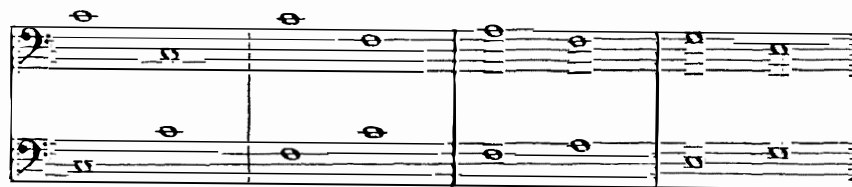
5. Also see above, Chap. 10, n. 2.

CHAPTER 32

How Two Perfect or Imperfect Consonances of The Same Ratio May Be Written Consecutively

Although for the reasons given above two consonances of similar proportion should not be written ascending or descending together, it is possible to write consecutive perfect or imperfect consonances of the same ratio, namely two octaves, two fifths, two ditones, two semiditones, etc. This can be done when the two voices involved exchange pitches, moving in contrary motion [Ex. 50]. In such an exchange of steps between the voices, the consonance is not raised from a high pitch to a lower one, or vice versa, but remains in its first location, changing neither position nor sound. Therefore no variety of pitch is heard. Since no variety is audible,

Example 50. *Allowed progressions*



it cannot be said that there are two consonances of the same ratio used consecutively in the manner described previously. Rather it is but one consonance which is duplicated on the same steps, as is clear to the ear. Whenever parts exchange pitches, ascending or descending, and vary their melody by this contrary motion, their sounds are unchanged. Of course there may be a difference audible when a low voice sings a higher part and vice versa, but not a difference in the sense that concerns us now. As may be seen in Ex. 51, were the parts to retain their original positions, the melody of each would consist of a monotone. [183]

Example 51. *Illustration of all that is stated above*

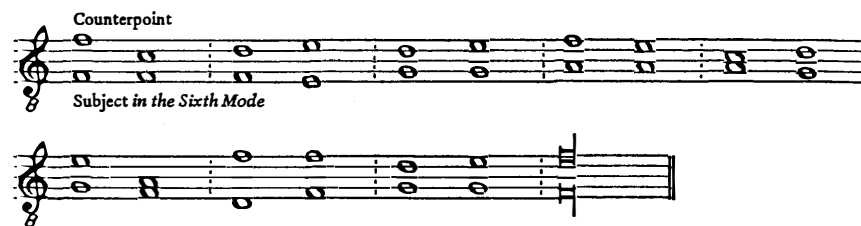


CHAPTER 33

Two or More Perfect or Imperfect Consonances of Different Ratios May Be Written Consecutively

It was essential to observe the rules just given so that sweet and delightful harmony might result from variety and order in arranging consonances in a composition. Having observed these rules, musicians were then free to write in their counterpoints whatever consonances best suited the situations at hand. They did not hesitate to write successions of perfect or imperfect consonances, unmediated by other consonances, provided they were of different ratios. We shall follow this practice, because it is both convenient and reasonable. We shall when convenient write an octave immediately after a fifth, or vice versa; and a major or minor third after each of these. Similarly we may write a hexachord after a third, and vice versa, as seems suitable, always varying the consonances as in Ex. 52. The parts should always proceed by singable intervals and with beautiful line. If this is done the harmony will be good and pleasing.

Example 52.



CHAPTER 34

After a Perfect Consonance It Is Well to Write an Imperfect Consonance, and Vice Versa

In the natural series of harmonic numbers the ratios of the perfect consonances appear in succession, uninterrupted by any imperfect consonance, as may be seen in Chapter 15 of Part I. The imperfect consonances then follow in sequence, uninterrupted by any perfect consonance. We must not imagine that the ancients ordered the consonances in this manner in their compositions, although we ought always to be guided by these numbers. They knew well that such sequences of perfect or imperfect consonances would have brought them not only a certain annoyance but also difficulty. In fact, it would have been nearly impossible for part-writing to reach the perfection desired and to give the voice-lines that beauty essential to a composition. To avoid this difficulty, let us do in our counterpoints as they did: [184] place an imperfect consonance after a perfect one and vice versa, as a third or sixth or their compounds after an octave or fifth, and vice versa, in the manner shown in Ex. 53. Only good, graceful, delightful, and perfect harmony can result from

Example 53.



gressions. Another undesirable effect is that of the sixth preceding the fifth with the voices moving up or down together, even with one voice moving conjunctly and the other leaping, as can be seen in Ex. 56. Experience has taught us the effect of these movements upon the ear. For nature abhors anything without proportion or measure and delights in those things which possess them.

Example 56. *Prohibited progressions*



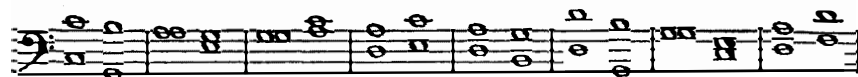
On the contrary it is permissible to write a large imperfect consonance followed by a smaller perfect one when the parts ascend together, provided that the upper part moves by step and the lower by leap. It is also permitted to move from a smaller imperfect consonance to a larger perfect consonance when the lower voice moves up by step and the upper voice leaps up, or vice versa. [186] It is also satisfactory for an imperfect consonance of smaller ratio than the interval that follows to go to the octave in similar motion, if one voice moves conjunctly by a large semitone, as in Ex. 57.

Example 57. *Tolerable progressions*



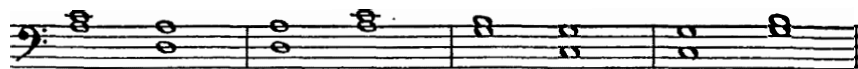
A perfect consonance may go to an imperfect consonance with parts ascending or descending together, if one part moves by step and the imperfect consonance is of larger ratio than the perfect. It is also permitted to write two consecutive consonances with leaps in both voices if one voice moves by a semitone [Ex. 58]. Both voices may move in the same direction when the upper leaps a third and the lower a fifth to go

Example 58. *Good progressions*



from a third down to a fifth or from a fifth up to a third. It is true, though, that the leap of a ditone, especially descending, sounds somewhat bitter and is better avoided, as experience shows. But to ascend from the fifth to the ditone is allowed [Ex. 59], because the voice pro-

Example 59. *Tolerable progressions*



gressions involved are not only supportable but actually very pleasing. This produces a most sonorous effect because the parts proceed toward the higher notes, where the quick movements are generated. These quick movements obscure that harshness made manifest by the slow movements of lower notes.

It would be overlengthy to give an example for every possible contrapuntal movement and progression and to assign reasons for each of them. What has been said will have to suffice and serve as a guide for distinguishing good progressions from poor ones. [187] The ability to make such distinctions will not be difficult to acquire if the rules given here are diligently observed.

CHAPTER 37

Leaps and Widely Separated Voices Should Be Avoided as Much as Possible

Above all let us see that the parts of a composition—in contrary as well as similar motion—move by step as much as possible, and that they do not become too widely separated from one another. This occurs when one leaps an octave and the other a fifth or fourth, or the like, as illus-

trated in Ex. 60. Such distances are not only difficult to sing, for it is not so easy to intone the pitches and judge the intervals and consonances in leaps of this kind as in those involving a conjunct coupled with a leaping movement. Moreover, they produce certain effects not pleasing to the ear. It should be noted that the more confined the movements are, as in stepwise movement, the more singable they are. They are also more con-

Example 60. *Prohibited progressions*



ducive to a delightful harmony than are leaping movements, for the conjunct movements are more natural, as the natural way to pass from one extreme to another is through the proper steps. Thus we admire this closeness as most nearly resembling the natural state. Augustine observes in Book II, Chapter 10 of his *De musica* that the nearer two parts approach equality the worthier they are of approbation, though he was speaking of other matters [than music]. Wide distances are not actually dissonant. They do produce, as I have said, a kind of distress in the ear. Let us therefore avoid these distances to make our counterpoints pleasing, sweet, sonorous, harmonious, and full of good melody.

CHAPTER 38

How to Progress from One Consonance to Another

Many believe that merely to avoid the disorder that results from violating the above rule certain musicians decided that in moving from one consonance to another they should always go to the nearest one. So from the unison one goes to the third, from third to fifth, from fifth to sixth, from

sixth to octave, and likewise in the opposite direction. Distant movements are thus avoided. On the surface an obvious rule, it does require explanation in that it contains aspects that are not only useful but also necessary to those who would write good harmony and bring their works to perfection. [188] These are not purely calculations of science or art; they are observed naturally by many.

They say, then, that one should proceed from one consonance to another by means of the nearest. By this should be understood that the composer moving from an imperfect to a perfect consonance must be certain the imperfect one is actually the nearest. Otherwise he would fail to observe this very necessary rule. So, to go from a sixth to an octave, the sixth must be major, because the major sixth is closest to the octave, and we must not write the minor, which is more distant from it, as we shall see. This rule must be observed not only when the parts move in contrary motion, but also when one voice remains stationary and the other ascends or descends two steps. Similarly when the sixth is to move to a fifth, it must be minor; for the minor is closer than the major. This is particularly important when one voice is stationary. When we wish to progress from the third to the octave, we must use the major third, because it is closer to the octave than the minor; and the parts must move in contrary motion, one conjunctly and the other by leap. Moving from the third to the fifth when one voice stands still, the third must be major. But the third will be minor, especially in two-voice writing, when the voices move in conjunct contrary motion, or when both descend, one by leap and the other by step. In the first case, the minor third, although more distant, is used to avoid the relation of the tritone between the parts.

When from the third we wish to arrive at the unison (which is the basis of all the consonances, if not actually numbered among them), the third should always be minor—this being closer—and the parts should move in conjunct contrary motion. If the parts are to ascend together, one by step and the other leaping, the third should be major. When one part stands still, and the other leaps, the third will always be minor. I say these things, always keeping in mind the different tones

upon which we should use a perfect consonance as a termination, as may be seen in Ex. 61.

When moving from a perfect to an imperfect consonance, this rule [concerning the nearest consonance] need not be observed, provided that the movements of the parts are governed by the rules given earlier. I say this about the movement from perfect to imperfect for a reason. Each thing naturally seeks its own perfection and the quickest and best route to it. Perfection in this discussion is attributed to the perfect consonances. As everyone knows, anything can easily pass from perfection to imperfection, but the opposite is not so easy. For it is more difficult to make something than to destroy or ruin it.¹ Therefore when we do otherwise than I have described, it is contrary to the natural order of things, inasmuch as the imperfect consonances participate most in perfection as they draw near to the neighboring perfect consonances and thus become sweeter and softer to the ear.

Example 61. *Good progressions*



Someone might object: since the major sixth is closer to the fifth than to the octave—which is plain—why do we usually put it before the octave rather than before the fifth, if we should go from an imperfect consonance to the nearest perfect? [189] My answer would be that although the major sixth is nearer to the fifth than to the octave, it is not closer to the fifth than the minor sixth. Also we must note that just as among the perfect consonances the octave is larger than the fifth, so among the imperfect the major sixth is larger than the minor. Thus the larger of the perfect should be accompanied by the larger of the imper-

1. Zarlino slips here and says it is “easier,” which has been emended above.

fect. For they have, I might say, a kinship or consensus, and it is easy to pass from one thing to another without much effort when there is such a consensus. Therefore we go to the fifth from the minor sixth, for it shares a consensus with it and is nearest to it. Similarly we go to the octave from the major sixth, for they share a consensus and are nearest to one another.

Given a fact and a certain condition, I do not see how two diverse and almost opposite conclusions can be drawn from them. To use these consonances in any other way, therefore, would be acting like that physician, called an Empiricist by Galen,² who treats various ailments with the same medicine, failing to consider whether the illness comes from a warm or cold humor.

Truly, then, the major sixth suits the octave, whereas the minor does not; the minor sixth best accompanies the fifth. This may be proved by reason, authority, and example. It is proved first by reason in the fashion I have shown and through the harmonic numbers, which give the ratios to all the consonances in music. The major sixth has its ratio in the proportion superbipartiente tertia, contained (as I have said elsewhere) in the terms 5:3, which are the root terms of this proportion. If we proceed further in the natural order of the numbers mentioned, we find that after 5 comes immediately the number 6, which forms with 5 the minor third; and the minor third, combined with the major sixth, produces an octave. Now if we place the 3, which has two relationships, with 5 and with 6, in a natural series in this manner, 6:5:3, we represent the manner in which two parts proceed when one descends and the other remains stationary. Or if we order in the same way 10:6:5, we represent the manner in which two voices move when one ascends to the octave by the leap of a semitone and the other remains stationary. Again we see the need for observing the rule given. We find it observed also in the order between 15 and 9, which is the ratio of the major sixth, but not in its root terms. Just as two parts, when one ascends by a large whole tone and the other descends by a large semitone, reach the octave admirably, so,

2. *De naturalibus facultatibus* i.13, ed. and trans. Arthur Brock in Loeb Classical Library (London, 1916).

placing the 8 above the 9, with the addition of 16 under 15, results in the ratio of the diapason (not in its root terms) between 16 and 8 in this natural series, 16:15:9:8.

No such natural series permits the major sixth to approach the fifth without the aid of a whole tone. Similarly it is impossible to proceed from the minor sixth to the fifth without the aid of the semitone. This may be comprehended with the aid of the series 50:45:30:27 wherein the fifth is found between 45:30 and the small whole tone on either side of it. In the series 24:16:15:10 the ratio of the large semitone is in the center and that of the fifth on either side, between 24:16 and 15:10. This represents a part that proceeds from low to high or vice versa, while another part in upper or lower range does not move. These ratios cannot otherwise be found in the natural series of harmonic numbers except with great difficulty, and then they will be accidentals outside the natural gamut. The reasons I have just given regarding the major sixth and the octave may be applied as well to the minor sixth and the fifth, and to the other consonances, which I shall not discuss for the sake of brevity.

Yet another reason helps to demonstrate that given any two imperfect consonances composed of the same number of steps, the major tends more to expand than the minor in any register; and the minor tends more to contract and become even smaller. It is as if the major had more impetus than the minor. Since a thing desires and is inclined toward like things, the major sixth, more perfect than the minor, strives most to be near the octave, which is more perfect than the fifth and than any other perfect interval, as I have said. The minor sixth, less perfect, seeks that which most conforms to its own nature, the less perfect fifth, be it in lower or upper register. This observation is confirmed by Franchino Gaffurio, who avers that it is in the nature of the major sixth to go to the octave and of the minor to go to the fifth.³ [190] This is the nature of these consonances, and it must be noted that this nature and tendency is invariable. Therefore, when they are written in compositions in a manner contrary to their inclinations the writing is unnatural. Moreover, anything used in a manner contrary to its nature is bound to have an unpleasant effect, for it is prevented from achieving its proper end. We

3. *Practica musice* (Milan, 1496), Book III, Chap. 3, rule 7.

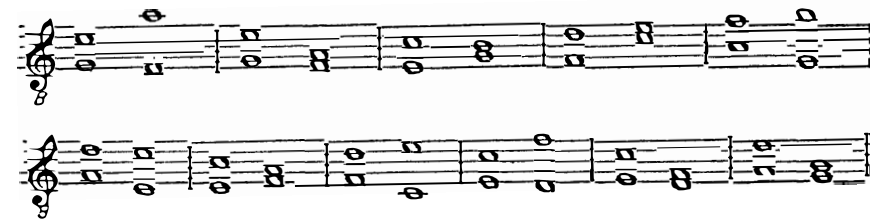
may conclude that whenever these consonances are used in counterpoint in a manner contrary to their natures, they will always displease the ear.

We may now check the truth of these statements against experience and come to the promised example. It will be seen that the best effects result from using the procedures recommended above. Nature, which has jurisdiction over everything, has so designed that not only those with musical training but the unschooled and even farmers—who sing after their own fashion, without reasoning about it—are accustomed to progress from major sixth to octave, as if nature had taught them. This is most obvious in the cadences throughout their music, as all musicians can hear. Perhaps it is what persuaded Franchino [Gaffurio] to venture to say that the cadence is the only place where the major sixth must progress to the octave, because there the composition comes to a close. But to me it appears to contradict the remark I quoted from him just above. If we are to obey the natures of these two intervals, I can only conclude that he said it thoughtlessly. Therefore it shall not be lawful to pass from the major sixth to the fifth, nor from the minor sixth to the octave. For neither progression is natural to the consonances involved.

To make the rule easy to follow, 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, provided they are written in the manner to be described elsewhere.

It is not always convenient for the composer to progress from the major sixth to the octave, from the minor sixth to the fifth, or from the minor third to the unison in the way I have described. So that all may know how to proceed in such cases, I am adding some examples [Ex. 62].

Example 62. *Perfect progressions*



In them may be seen how many ways there are of passing from both sixths, both thirds, and related consonances to other consonances.

Finally it must be noted that what has been said about the simple consonances applies also to their compounds. One more suggestion: when two parts of a composition descend together from a major sixth to a third, it is better for the third to be major than minor, though both are good. For then the upper part falls more easily, and both will fall undoubtedly, into a consonance that more nearly approaches perfection, as may be heard and examined in the two examples given in Ex. 63.

Example 63.



CHAPTER 39

How to Terminate a Composition

[191] Musicians wanted compositions to end on a perfect consonance, because they correctly saw that the perfection of anything depends upon and is judged by its end. Since they found that among consonances no greater perfection could be found than in the octave, they made it a fixed rule that each composition should terminate on the octave or unison and no other interval. The rule was ignored only by a few of poor judgment. If we wish to follow those who instituted and observed good rules, we will terminate our compositions upon one of these consonances, because they are more perfect than the others. The rule is well grounded, inasmuch as compositions ending otherwise leave the audience in a state of suspense, awaiting a final perfection. They would feel like those listening to a speech who look forward eagerly to the epilogue and conclusion that will bring it to its perfection.

Another difficulty arises when a composition ends otherwise, namely

doubt concerning its mode, as we shall see in Part IV.¹ This is judged by the last note, or, better, the chord based on it. If the last chord is not an octave or unison, it would be easy to mistake the mode by assuming the top or bottom note of the chord to be the final. This would happen when the counterpoint ends with a fifth, third, or compound of these, inasmuch as it would not be easy to decide which tone—the highest or the lowest—is the key to the mode of the composition. To be sure, such judgment should be possible upon careful listening to and inspection of the form and direction of the harmony.

Wisely, therefore, did the ancient musicians propound this and the other rules given above, all very useful and extremely necessary to those who wish always to compose correctly. Everyone ought to strive to utilize them, for in so doing he will gain credit and honor.

But enough now of rules pertaining to simple two-voice counterpoint called note-against-note. These rules are not only essential to this type of writing, but serve also in other kinds of counterpoint, whether simple or diminished, as we shall see.

1. Chap. 30. The chapter is translated in Oliver Strunk, *Source Readings in Music History* (New York, 1950), pp. 253–55.

CHAPTER 40

How to Write Simple Counterpoint, Called Note-against-Note, for Two Voices

To come to the application of the rules I have given, I shall demonstrate now how to write counterpoint, beginning with that composed simply of two voices, note-against-note. Then we shall pass on to diminished counterpoint and still other kinds. For the convenience of the reader and to avoid confusion, I shall begin, like all good writers and compilers on any subject, with the simplest matters. First of all let us take note of what was said in Chapter 26: it is necessary to choose a tenor from any plain chant to be the subject of the composition or counterpoint. This tenor

must then be scrutinized to determine its mode and from it the proper allocation of the cadences, which will indicate the character of the composition. For, if the cadences happen to be incorrectly placed and of more than one mode, the end of the composition will not agree with the beginning and the middle.

Let us assume that the tenor given in Ex. 64 is the plain chant chosen as the subject. It is in the first mode.¹ First, let us begin correctly, in accordance with what was said in Chapter 28. [192] Hence the first note of the counterpoint should make a perfect consonance against the first note of the subject. This done, we shall accompany the second note of the subject with a perfect or imperfect consonance. But this should not be the same interval as that which separated the first notes, because this would violate Chapter 29. We must also always keep in mind what was said in Chapter 38, keeping the voices as close together as possible and avoiding large leaps in both parts, for we do not want the parts to get too far from one another, as we saw in Chapter 37.² We may then proceed to the third note of the counterpoint, combining it with the third of the subject, varying the consonances as well as the steps, alternating perfect and imperfect consonances, or writing consecutive perfect or imperfect consonances of different species, according to the rules of Chapters 33 and 34. We shall do the same with the fourth note of the counterpoint and the fourth of the subject, and so on to the fifth, sixth, and the others until we reach the end. There, in accordance with the rule of the preceding chapter, we shall conclude the counterpoint on a perfect consonance.

Above all we must seek to vary the contrapuntal part, through diverse movements, by touching different tones in the lower and upper and middle registers, and in the consonances it sounds against the subject. Most important, we must see that the counterpoint sings well and progresses conjunctly as much as possible. In this is found one of the beauties of counterpoint which, added to the many other desired features, as we shall see, contributes to its perfection.

1. In the traditional numbering.
2. Zarlino has erroneously 27.

Anyone who applies himself diligently to this simple manner of writing will soon be able to undertake bigger things. By practicing writing various counterpoints upon a subject, above and below it, he will become well versed in the steps and distances of each consonance. He may then proceed to the division of note values, or diminished counterpoint, following the precepts I shall give. He will write the parts at times in fugue with the subject, and at times in imitation of it, and in other ways we shall discuss. After that he may come to composition for more voices, and through a combination of our suggestions and his own gifts he will become in time a good and learned composer.

I give here general rather than particular rules for writing a counterpoint upon a subject. The composer must arrive at the contrapuntal part by means of the previously given rules by exercising his own intellect and judgment. Unless nature has given him these, rules and precepts will avail him little. But there is nothing surprising in my method. It holds in every art and branch of learning, for all who have attempted to teach an art or science has begun with universals. It is in these rather than in innumerable particulars that science consists. The rules of poetry and oratory as given by Plato, Aristotle, Hermogenes, Cicero, Quintilian, Horace, and others concern universals and not particulars. For example, Horace, speaking generally of the order poets should follow in setting forth a subject from history or myth in their narratives, declares:

Ordinis haec virtus erit et venus, aut ego fallor,
Ut iam nunc dicat iam nunc debentia dici,
Pleraque differat et praesens in tempus omittat.³

It is obvious that this rule was well known to the very learned Virgil. Having chosen as his subject the fall and burning of Troy and the voyages of Aeneas, he began with the voyage, upsetting the chronology, as the voyage came afterward. He realized that his work would gain in artfulness and majesty if Aeneas were to tell the story to Dido when

3. *Ars poetica*, 42-44: "This will be the virtue and charm of order, if I am not mistaken: what should be said now is said now; many points are postponed and omitted for the moment."

fortune brought him to her in Carthage. Such is the way of poets, and of painters as well—for painting is nothing but mute poetry. They adapt history or myth to suit their own purposes. Once they have chosen to depict a certain incident they accommodate the figures to their design and accompany them as they deem most suitable so as to produce the best effect. Nor do they hesitate to arrange the figures in one way rather than another, standing or sitting, provided the best effect is achieved and the history or legend is respected. [193] In fact, innumerable painters have depicted the same subject in different ways: for example the stories of Lucretia, wife of Brutus; of Horatio, who fought the Tuscans on the bridge; and many others. But all the versions had the same goal: to represent the story chosen. This may be observed not only in the representations of the same subject by various painters, but by one and the same painter, who may depict the same subject in different ways.

A musician should do likewise. He should perennially seek to vary his counterpoints on a subject, and from all the possible lines select the best and most appropriate one, the one that will make his composition most sonorous and best ordered, leaving the others aside. If a passage, such as a cadence, occurs to him that is not suitable at the moment, he should reserve it for another more appropriate place. This he will do whenever the phrase or period of the text is not ended, for he must always wait until these are finished [to make a cadence]. Similarly he will see that it is on a tone required by the mode of the composition.

All these things must be observed by anyone who wishes to begin properly the study of counterpoint. Above all he must practice for many days in this type of composition, so that he may go on easily into the style of diminished counterpoint, where, as we shall see, many new devices will be used. To make what I have been saying explicit, I offer some counterpoints of the note-against-note type, all written upon the subject already mentioned, some above and others below. A study of these [Ex. 64.] will aid in the assimilation of the things I shall take up later and diminish the effort needed to acquire them.

Everyone should be warned that to write note-against-note counterpoint not only appears but actually is more difficult than diminished counterpoint. This is because the restriction that each note of the subject

Example 64.

The musical score for Example 64 consists of two systems of staves. The first system contains four staves: the top two are labeled 'First example, above' and 'Second example, above', and the bottom two are labeled 'Subject in the First Mode' and 'Third example, below'. The second system contains four staves: the top two are labeled 'Fourth example, below' and 'Fifth example, below', and the bottom two are labeled 'Sixth example, below' and 'Seventh example, below'. The subject in the First Mode is written in a bass clef on a single staff. The counterpoint examples are written in various clefs (treble and bass) above or below the subject. The music is in a simple, note-against-note style with a common time signature.

may have only one consonance against it does not apply in diminished writing. In diminished counterpoint each note may have several consonances intermingled with dissonances if desired, according to the taste of the composer. In note-against-note it is not easy to arrange the parts so

that they are conjunct and easy to sing, especially when many counterpoints are to be written upon the same subject, each altogether different from the others. Let no one despair, nevertheless, for while the root may be bitter the fruit to be enjoyed shortly is indeed sweet, pleasant, and delicious. [194] Virtue, as wise men say, consists in doing the difficult, not the easy.

CHAPTER 41

*The Unison and Octave Should Be Avoided
as Much as Possible in Counterpoint*

So that our compositions may bring maximum pleasure to the ear, I shall give here a few hints useful in promoting beauty and grace in counterpoint. The first is that the composer avoid the unison in his counterpoints insofar as possible, and use very few octaves. As I have said, unisons are not actually counted among the consonances, and octaves, because they resemble the unisons somewhat, are not so pleasing to the ear as the other consonances. This is not inconsistent. The ancients used musical relations to moderate and regulate many sciences as well as the arts—with respect to sounds, numbers, and proportions. All that is good and beautiful in grammar, rhetoric, poetry, and many other arts, they possess because of music (if I may put it this way). All these things, Augustine affirms, are learned from music.¹

It is not unbecoming, then, for music to be ordered in the manner of the other arts and sciences; rather, I think it would be blameworthy if music were disordered and without rule in such matters, while the other sciences and arts are lawful and well regulated. So grammar, rhetoric, and poetry have learned from music that the persistence of a sound, that is the repetition of one syllable or letter in the phrase of a speech many times, somehow displeases the ear. The Greeks called it *κακόφατον*, that is,

1. *De doctrina christiana*, iv.10, ed. J. P. Migne in Augustine, *Opera omnia*, in *Patrologia cursus completus; series latina prior* (Paris, 1864–87), 34 (1845).

“poor speech” or “bad consonance.” For example, in the line “O fortunatam natam me consule Romam,” the repetition of the syllables “natam” and the termination on “mam” give the ear little pleasure. Or take the beginning of Cicero’s letter to Proconsul Lentulus: “Ego omni officio.”² Here one reads in three words the letter “o” four times. There are an infinite number of other examples, each of which displeases the ear and cannot be tolerated by the sensitive hearer.

A musician would truly deserve censure were he to permit such abuses in his compositions, when all his colleagues in the other arts have purged these things by universal rule. Such strange ways of speaking are forbidden in prose and poetry, except for special effects. It is even more important for the musician to eliminate from his work all unpleasant sounds and anything that might offend the ear. So let him beware that he

Example 65.

The image shows three systems of musical notation for Example 65. Each system consists of a treble clef staff and a bass clef staff. The first system is labeled 'Counterpoint' and 'Subject in the Fourth Mode'. The second system is labeled '7' and the third is labeled '13'. The notation shows a subject in the fourth mode and its counterpoint, with various intervals and rests indicated.

2. *Ad familiares*, ed. and trans. W. Glynn Williams in Loeb Classical Library (New York, 1927), 1, Book I, Letter 1, p. 2.

does not fall into such faults in his compositions; instead let him regulate his harmonies in such a way that only pleasant effects are heard. His counterpoint could hardly be considered pure if such disorders appear in it often and without good reason. This would be the case if many unisons or octaves were written in succession separated only by one other consonance, particularly when they are over the same note, even though the parts may move by leap. If, however, these consonances are arranged as in Ex. 65, they will surely be gratefully received by the cultivated hearer. [195] I do not mean they should not be used, only that they should be used sparingly. When it happens that a composer cannot otherwise write a good elegant line that sings well and easily, he must by all means use them. He should separate them, however, by other consonances, and he should prefer the octave to the unison when there is a choice, for the latter is never a consonance, as I have said.

CHAPTER 42

Diminished Counterpoint for Two Voices: How Dissonances May Be Used

Note-against-note counterpoint is necessary for all beginners to give them practice in recognizing the location and distances of the consonances. When a student can write it well and correctly, he may pass on to diminished counterpoint. The first step, as in simple counterpoint, is the selection of a subject. There is no need to restrict oneself to notes of equal values, as in simple counterpoint. Although that admits only consonances, dissonances are permitted in diminished counterpoint when used incidentally, as we shall see. They may not be employed at random and without rule, but thoughtfully, purposefully, and reasonably. Otherwise confusion will ensue, and this is something to avoid in everything, above all in music.

In the simple counterpoints illustrated earlier, each note of the subject received one corresponding note of the same value in the contrapuntal

part. Now it will be permissible to write against each note of the subject any number and value of notes in the counterpoint, as suits the purpose. But the time values of the notes in the counterpoint must be equal to those of the subject to which they correspond. Therefore above every semibreve in the subject we may write two minims, or four semiminims, or one minim and two semiminims, or similar combinations. It is required, though, that when two minims are written in the counterpoint above a semibreve in the subject, each of the minims should be consonant, for these two parts of the semibreve are greatly noticed by the ear because of the measure, which consists of downbeat and upbeat, as we shall see. Each part of the measure receives a minim, and the two together equal the semibreve of the subject. When four semiminims are desired in the counterpoint as equivalents of the semibreve, then the semiminims falling on the downbeat and upbeat should be consonant. Thus the first and third semiminims will be consonant; the second and fourth need not be so, but if they are, all the better.

All that I have been saying applies only when the contrapuntal part proceeds conjunctly. When there is disjunct movement it is necessary that the notes involved in the leap be consonant with the subject. At times it may be graceful to write a tied or dotted minim, and in such cases the dot should be consonant, for to write it otherwise would provoke obvious displeasure in the hearer. While the dotted minim may be written on the downbeat, that is, at the beginning of the measure, or on the upbeat, the first method may be used only at the beginning of the counterpoint in two parts. But the second method may be used not only at the beginning but also in the middle, as may be seen in the example.

At times, too, the composer may alternate consonant and dissonant minims, taking care however that the consonant ones fall on the downbeat and the dissonant ones on the upbeat of the measure and that they progress continually down or up in strict conjunct movement through many steps. If such a passage should occur at the beginning of the counterpoint, then the dotted semibreve may be used at the outset if it fits well, but not so in the middle of the composition. For here the simple semibreve or dotted minim are not used unless syncopated.

Aside from these cases, every note of the subject, that is, the *cantus firmus*, in diminished counterpoint must have against it two consonances, one on the downbeat and one on the upbeat of the measure [Ex. 66]. [196] When so used, dissonances have much grace, as experience proves. When the subject itself is diminished, in other words a voice from a polyphonic composition (*canto figurato*), then the note values of the

Example 66.

First example, above

Subject in the Third Mode

Second example, below

4

7

10

13

counterpoint may be equal to those of the subject. Even though we proceed in this way with both parts diminished, a certain grace is possible. It would be well if at times the counterpoint has notes of greater value than the corresponding notes of the subject, because at least one part should move both at the downbeat and upbeat of the measure.

If among numerous minims there is one that does not progress by step, it may never be dissonant. Indeed, both notes involved in a leap must be consonant. But when the dissonance is introduced stepwise on the second minim [Ex. 67], the movement is not offensive because of the relative velocity of such passages. Not so in leaping movements, however, since the dissonance is made so noticeable by the skip that it can hardly be tolerated. This is obvious to all who have taste in such matters.

[197] It is possible to have a dissonance on the first part of the measure, when this beat is occupied by the second minim of a syncopated semibreve in the counterpoint. Then the first part of such a note is placed on the upbeat [of the preceding measure], and the second part [of the dissonance] falls on the downbeat of the measure. Such a dissonance is

Example 67.

Diminished Counterpoint for Two Voices

tolerable, because in singing the syncopated semibreve the voice holds firm, and a certain suspension is heard, a taciturnity that is noticed amid the percussions that produce the tones and make them distinguishable from one another in time. So the ear barely notices this dissonance, not being sufficiently stimulated by it to comprehend it fully. Since there is no percussion, the movement seems weak to the ear, which is stimulated by percussions. When the syncopated note is thus held, the voice loses that vivacity which it had on its first percussion. The dissonance, placed on the second half of the syncopated note, is thus weakened and is barely perceived, concealed as it is by a stronger movement in the other voice, which is changing location at the same time with a livelier progression. Besides, the dissonance passes quickly. Although the ear is offended to a certain degree, it is compensated by the consonance that immediately follows. Not only does this dissonance not displease, but it is very agreeable to the ear, for the dissonance makes the consonance seem sweeter and smoother. This perhaps results because any quality is best perceived and appreciated by comparison with its opposite.

The first part of a semibreve must never be dissonant, whether syncopated or not. Moreover, two points must be observed [in the syncopated semibreve described above]. First, the dissonance should be followed by the consonance closest to it. Second, the syncopated voice should always descend by step, never ascend. The following rule may be useful. When the dissonance occupies the second half of the syncopated semibreve and forms the interval of a second against the subject, it is best followed by a third as the nearest consonance. The fourth is also followed by the third in similar circumstances. The seventh is followed by the sixth, which is closest to it. The compounds are treated in the same way: the ninth moves to the tenth, and so does the eleventh, as may be seen in Ex. 68.

A convenient practice of good musicians is to move occasionally from the syncopated second to the unison, provided the parts are so arranged that both move conjunctly, one a tone and the other a semitone. [198] Similarly the fourth in syncopation may be succeeded by the semidiapente, which is followed immediately by the major third, provided the semidiapente can be used to good advantage without a false relation be-

Example 68.

First example, above

Subject in the Sixth Mode

Second example, below

Diminished Counterpoint for Two Voices

Example 69.

tween the parts [Ex. 69]. The fifth, however, may not be used in this way when the tritone arises by [cross] relation, as illustrated in Ex. 70. Composers also are accustomed to follow the ninth with the octave, proceeding in contrary motion, one voice moving conjunctly and the other

Example 70.

leaping up a fourth or down a fifth, as in Ex. 71. Care should be taken that the note to which one descends immediately after the dissonance not be tied to a consonance, forming a further syncopation that would be entirely consonant. The note that follows the dissonance may do one

Example 71. *Syncopations very well resolved*

of two things: it may descend or ascend conjunctly or by leap; or it may be tied to another dissonant note with which it combines to form another syncopation. I say "tied" to another note, because when the dissonance in the semibreve syncopation is resolved by the minim that immediately follows, and this is part of another syncopated semibreve or of

a dotted minim, then the first minim may be said to be tied to another minim, and in the second case to a semiminim or dot. The acceptable patterns are illustrated in Ex. 72.

Example 72. *Syncopations gracefully done*



Those not used by good composers are in the succeeding examples. When the rule given here is not observed, the note that follows the dissonance fails to fulfill its proper function, and the dissonance resolves coldly, as I call it, that is, the resolution does not compensate the ear sufficiently for the prior disturbance [Ex. 73].

Example 73.



[199] Ancient and modern composers share a confusing practice in their counterpoints. At times a descending stepwise run is written so that a dissonance¹ takes the place of a consonance either on the first or second semiminim of a minim that is sounded or of a dotted semibreve, or of a syncopated semibreve without a dot. To avoid confusion in the mind of

1. This word had to be supplied to complete the sentence, which in the original texts lacks an object.

the composer, we shall now establish which of the two semiminims must be consonant. It is always the second, not the first, for this has been common usage among good and learned musicians and among others as well, because the first falls on the upbeat or second part of the measure. Actually this procedure is but an acceptable diminution of a progression from one minim to another a third away, with the distance filled in for reasons

Example 74.

Example 74 consists of two systems of musical notation. The first system has two staves: the top staff is in treble clef and the bottom staff is in bass clef. The top staff is labeled "First example, above" and the bottom staff is labeled "Subject [in the Sixth Mode]". The second system has two staves: the top staff is in treble clef and the bottom staff is in bass clef. The top staff is labeled "5" and the bottom staff is labeled "Second example, below". The music shows a progression of notes with various syncopations and dissonances, illustrating diminished counterpoint for two voices.

of better vocal line or suitability to the text, which depends for the proper pronunciation of its words upon the note values of the melody. Such patterns are permissible and sound well, since the delay of the preceding note and the quickness of the semiminim (whose sound and time pass rapidly) prevent the dissonance from being easily heard. Consequently such a dissonance has not bothered musicians, provided the ear immediately perceives a consonant note, which renders the whole acceptable.

So when a minim or semibreve (dotted or not) is followed by two semiminims in the manner shown, the first semiminim may be dissonant, but the second must be consonant. When there are more than two, however, we may proceed in another way: the first may be consonant, and then the remaining notes follow the rule already given. In some cases the first semiminim instead of dissonant can be consonant. It is most often consonant when the progression is octave to fifth, or vice versa, by contrary motion in diminished counterpoint, as will be seen.

I have discussed all this to relieve the composer's mind of confusion. It would be out of place in such an ordered science as ours, which gives rules to every other science, to have anything at all disorderly. And this would be the case if these semiminims were written one way by some composers and another way by the rest. So, when similar passages are composed, whether out of a desire for ornamentation or out of necessity, let us be sure that they follow the rules given here and illustrated in Ex. 74.

CHAPTER 43

The Method of Writing Counterpoints upon a Part or Diminished Subject

[200] Once the contrapuntist has practiced diligently for many days with plain-chant subjects, and can write upon them without error, he will want to go on to another manner of composing for two voices. I believe

that a good way to acquire this skill is to begin by taking as a subject a part from a polyphonic composition. An original subject may also be devised, if this seems preferable. He may then write the counterpoint either above or below the subject, as he chooses. If he chooses to write his own subject, he may find that one part helps him compose the other so that the subject and the composition are completed more or less together. What I call the subject, as I said earlier, is either the first part to be written or the first to be imagined by the composer. The more he bears in mind the rules given in connection with counterpoint on a cantus firmus, the easier will be his task. The present method of composing, it is true, is much freer and spontaneous, because either the upper or lower part may be diminished at will. Thus one part has somewhat longer note values than the other, or the values of the two parts correspond. These are all things not possible in the first mode of writing. In short, the composer may write whatever is most convenient, provided always that the parts are singable and progress with beauty and elegance mixed with a kind of severity.

Since the number of possibilities is infinite, I cannot give particular rules for individual instances. Rather I will offer two examples which will illustrate the procedures to be employed in writing such counterpoints. The first example [75a] is written on a preexisting subject, "Scimus hoc nostrum meruisse crimen," which is the upper voice in a two-voice work by Willaert.¹ The second subject [75b] is original. Through examination of these and similar works a good grasp of the method will be easily attained. [201]

1. *Opera omnia*, ed. Hermann Zenck and Walter Gerstenberg (Rome), 7, *Hymns* (1959), pp. 54-55.

Example 75a.

Musical score for Example 75a, measures 1-24. The score is written for voice and piano. The lyrics are: Sci- mus hoc nos- trum, me- ru- is- se cri- men su- mus cau- sae fa- te- a- mur i- psi, fa- te- a- mur i-

Musical score for Example 75b, measures 25-37. The score is written for voice and piano. The lyrics are: psi: Chris- te sed no- bis mi- se- ran- do par- ce par- ce praec- ca- mur.

Example 75b. Second example, entirely in free style, *in the First Mode*

Musical score for Example 75b, measures 38-44. The score is written for voice and piano. The lyrics are: mur.

10

14

18

22

26

30

CHAPTER 44

It Is Not Necessary for the Subject and the Counterpoint to Begin Together

[202] I would not like it thought that music is so bound by superstition that we feel compelled by an immutable law to start every counterpoint the same way, that is, with the subject and counterpoint starting simultaneously, as if rests at the outset were prohibited. Rests were adopted in music as much out of necessity as out of desire for ornament, as I shall show later. It is not an error to use them at the start of any part of a composition when convenient. The possible rests are not only the breve and semibreve but also the minim. This agrees with the practice of both ancient and modern composers, who have taken this liberty because of the great convenience it offers.

To begin a composition in this manner, then, let either voice start singing at the beginning of the measure. The other voice will enter after a minim's pause, commonly called a "sigh" (*sospiro*). Notes of any value may follow, provided they are not larger than a semibreve, which will be syncopated because of its position after the minim rest. Beginning either the counterpoint or the subject with notes of smaller value than a semiminim in the first part of the measure should be avoided. This is too quick a movement for the beginning of a composition. If a semiminim is first, it will always follow a minim rest. In this, as in everything we do, we should follow nature, which always proceeds with regularity. If we take note of movements in nature, we shall observe that they begin slowly and increase speed gradually. When a stone is dropped from a high place, the velocity doubtlessly is greater at the end of its fall than at the start. So let us imitate nature in this regard, and see that the parts of our compositions are not rapid at first. This also applies to the middle or end of a part if a voice reenters after a rest: the initial note should then be at least a semibreve. Then to proceed to more rapid movement, we should progress through notes of successively diminishing value; for example, follow a minim with a semiminim. I do not mean that two or more

notes of equal value should not follow one another. A semiminim may be followed by other semiminims and a minim by other minims. But in going from a long note value to a shorter one, it is wise to make them adjacent values. This rule is not inviolable, and I do not wish anyone to think that it is; I offer it only as a guiding light to the composer's own judgment.

Now here is a caution about what I have just said regarding the sequence of proximate note values. Some musicians expert in what they call the quantitative genus posit four distinctions of note value. To indicate the relation of one note value to another they say that the second is a "propinquant," "remote," "more remote," or "very remote" part of the first. So they say a note is a "propinquant part" of another when the two are adjacent in the series given above in Chapter 2. Such are the breve and long, semibreve and breve, minim and semibreve, and so on. However, in this system we do not pass beyond the minim, which is the last value subject to alteration, as I will explain later. Now when one note value is passed by and the next one taken instead, the chosen value is said to be a "remote part" of the first. Thus the semibreve is a "remote part" of the long, the minim of the breve, and so on. When two note values intervene, the second is said to be a "more remote" part of the first, as is the minim to the long, and others similarly related. [203] When three values are skipped, as with minim and maxima, the second note is said to be a "very remote" part of the first.

To return to the original point, I repeat that it is permissible to write two or more semiminims after a minim rest, just as one may do after a minim, which is of equal value to the rest. For then each semiminim is a "propinquant part" of the rest, though the rest is not actually sung. But such semiminims are less acceptable after a semibreve rest or after one of longer value than the semiminim, for then we are dealing with "remote parts." It is also not good to write many black notes after a minim rest. It is legitimate to write two semiminims after the dotted semibreve or after a syncopated semibreve, since that part on which the measure falls—the dot or the second part of the syncopation—is considered separated from the other by the measure; that is, it is treated as a separate minim on

which the beat falls. It is not desirable, however, despite the fact that few are cautious about it, to write notes in such an order that two or more semiminims follow an undotted [or unsyncopated] semibreve, for these are remote rather than propinquant parts of the semibreve. However convenient and agreeable such semibreves may be to singers, the progression from a slow note to a quick one without suitable intermediate degrees will be very noticeable.

CHAPTER 45

The Parts Must Be Well Conceived; and What the Singer Must Observe in Performing

It would be too difficult a task for me to discuss every minute aspect of composition, and it would be tiresome for the reader as well. Therefore I shall omit unessential matters and pass on to others of some importance, whether to the composer or the singer. First, the composer must write his composition according to the rules given above and not depart from the precepts, to which I have still to add. Then he must see that his parts are readily singable without any difficulty. For harmony results (as we saw in Part II)¹ from the simultaneous singing of the parts in a composition in such a way that it does not offend the ear. Harmony can never follow from things not proportionate to each other. So let him ascertain that the parts are singable and proceed by true and legitimate intervals formed by the harmonic numbers, whether consonances or dissonances. By the consonance I mean the octave, fifth, fourth, third, and similar ones such as the tenth. The latter may be written freely, for the master of the ancient musicians, Josquin, wrote not only tenths but twelfths, as may be seen in his motet for five voices "Inviolata, integra, e casta es Maria."² The dissonances are the large semitone, and those forms of the whole

1. Chap. 12.

2. *Werken, Motetten*, 3, 111. M. 10 of the bass part contains a leap of a twelfth.

tone by which one consonance exceeds another, as I have shown in Chapter 39 of Part II. It is true that at times the seventh and ninth are also written, and good composers use them, but they are found rarely. 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. Experience shows, rather, that they are gravely offensive to the ear. If music is the science of singing well or of forming good melody (*ben modulare*), as St. Augustine defines it,³ and aims at nothing else, how can we include a composition that contains such errors and is so disordered as to be unsupportable to the eye, not to mention the ear, among those that serve this end? [204] What was said in Chapter 37 is relevant here: the parts should progress conjunctly whenever possible, since these movements are more natural than leaps.

The composer will seek, therefore, to make his parts easily singable and formed of beautiful, graceful, and elegant movements. Then his listeners will be delighted with them rather than offended.

Matters for the singer to observe are these: First of all he must aim diligently to perform what the composer has written. He must not be like those who, wishing to be thought worthier and wiser than their colleagues, indulge in certain divisions (*diminutioni*) that are so savage and so inappropriate that they not only annoy the hearer but are ridden with thousands of errors, such as many dissonances, consecutive unisons, octaves, fifths, and other similar progressions absolutely intolerable in composition. Then there are singers who substitute higher or lower tones for those intended by the composer, singing for instance a whole tone instead of a semitone, or vice versa, leading to countless errors as well as offense to the ear. Singers should aim to render faithfully what is written to express the composer's intent, intoning the correct steps in the right places. They should seek to adjust to the consonances and to sing in accord with the nature of the words of the composition; happy words will be sung happily and at a lively pace whereas sad texts call for the

3. *De musica*, i.2: "Musica est scientia bene modulandi."

opposite. Above all, in order that the words may be understood, they should take care not to fall into the common error of changing the vowel sounds, singing *a* in place of *e*, *i* in place of *o*, or *u* in place of one of these; they should form each vowel in accord with its true pronunciation. It is truly reprehensible and shameful for certain oafs in choirs and public chapels as well as in private chambers to corrupt the words when they should be rendering them clearly, easily, and accurately. For example, if we hear singers shrieking certain songs—I cannot call it singing—with such crude tones and grotesque gestures that they appear to be apes, pronouncing the words "Aspro core, e selvaggio, e cruda voglia"⁴ so that we hear "Aspra cara, e salvaggia e croda vaglia," are we not compelled to laugh? Or more truthfully who would not become enraged upon hearing such horrible, ugly counterfeits?

A singer should also not force the voice into a raucous, bestial tone. He should strive to moderate his tone and blend it with the other singers' so that no voice is heard above the others. Such pushed singing produces more noise than harmony. For harmony results only when many things are tempered so that no one exceeds the other. The singer should know too that in church and in public chapels he should sing with full voice, moderated of course as I have just said, while in private chambers he should use a subdued and sweet voice and avoid clamor. Singers in such places should use good taste, so as not to leave themselves open to rightful censure. Further, they should refrain from bodily movements and gestures that will incite the audience to laughter as some do who move—and this is also true of certain instrumentalists—as if they were dancing.

But to leave these matters, I shall conclude by saying that if the composer and singer observe those things that pertain to their respective offices, there is no doubt that every composition will be sweet, soft, and harmonious, and the listeners will be pleased and grateful.

4. Petrarch, *Rime*, cclxv, 1. There is a setting by Willaert cited by Zarlino in Part IV, Chap. 32, which was printed in *Musica nova di Adriano Willaert* (Venice, 1559), *Opera omnia*, 13, 54.

*A Part Should Not Remain for Long
in the Low or High Register*

[205] To continue at length in the low or high register is tiring to a singer. If he has a low voice and must remain in the high register, his voice will weaken and the pitch will drop, and similarly a high voice, forced to sing low continuously, will tend to sing sharp. This produces many dissonances. The composer should keep these facts in mind and write in such a way that no voice is required to sing for a long time in the deep or high register. When the voice is made to rise or descend it should be for a good reason, and the extremes of the vocal ranges should be used only briefly. I say a good reason, because modern composers have the habit of continuing at some length in the lower register and cannot be blamed for doing so when they wish to express words that denote grave, profound matters, descent, fear, weeping, tears, and so forth. When the words signify height, acuteness, ascent, mirth, laughter, and similar things, they continue in the high register. There is no need to remain overly long in these extreme registers. Rather, it is well for the parts to touch, along with the low or high, the intermediate tones, ever keeping the melody varied. A voice should not be pushed outside its natural limits, for example, for a soprano to have a tenor part, or vice versa, nor to exceed the limits of the mode of the composition. Each part should remain within its natural limits, as we shall see in Part IV¹ when we speak of laying out the parts. By respecting these natural limits the composer will put the singer at ease and promote good and perfect concordances.

1. Chap. 30.

*A Dissonance or Minim Rest between Two
Perfect Consonances of the Same Species
Ascending or Descending Together
Does Not Cancel the Effect of
Consecutive Consonances*

Some believe it is not improper for two perfect consonances of the same species to ascend or descend together without an intermediate consonance when a dissonance or minim rest separates them. In this way they think they vary the intervals and avoid violating the rule given in Chapter 29. How far they are deluding themselves, anyone can appreciate on hearing the examples below [Ex. 76, 77, and 78]. It will be evident, then, that a dissonance placed between two perfect consonances does not alter the harmony; or does it alter the fact that two consonances are used consecutively without an intermediate consonance, since musicians know that consonances are primary elements whereas dissonances are incidental, as I have said. If a dissonance, which is a sound, cannot vary the effect of consecutives, the minim rest, which is not even a sound but a sign of silence and privation, can hardly do so. Thus consecutive octaves are forbidden even if separated by a seventh or ninth, and similarly two unisons if separated by a second. Now, though the fourth and sixth are consonant, as has been determined, and though some change in the harmony occurs when either is used to separate two fifths, nevertheless neither should be so used except in compositions for many voices. For in simple music they generate a certain unpleasantness, difficult to describe but evident in Ex. 76. [206]

Composers in short passages of their compositions sometimes write a minim above or below a semibreve at the octave, followed by two conjunctly descending semiminims. The last semiminim then goes a step up, meeting the descending semibreve at the octave. Similarly they may write a semiminim an octave above a minim, which descends, and follow

Example 76. *Prohibited progressions*

5

9

13

15

20

Dissonance or Rest between Consecutive Consonances

it with another semiminim, which then leaps to make another octave. This is not all: they even substitute for the semiminims a dotted minim, followed by two *crome* [eighth notes], and other like procedures, as may be seen in Ex. 77.

Example 77. *Progressions not to be used at length*

Although we cannot say that the octaves in these cases are not separated by a consonance, for the sixth and tenth are there, yet the progressions are not to be used for two reasons. The first reason was given in Chapter 42; the second is that the rapid change to the sixth or tenth between the octaves is barely noticed. Besides, the first of the two semiminims is dissonant and the second consonant. Thus the octaves are very audible and go contrary to the rules of Chapter 41. For, in truth, the run of the two semiminims preceded by a minim or dotted minim and followed by two quavers is none other than a diminution of the conjunct movement of two semibreves. It should be added that a progression consisting of two ascending or descending parts in which one proceeds by four semiminims conjunctly while the other, a semibreve, leaps to a fifth on the beat [Ex. 78] must be avoided also. [207] Such progressions have no grace, despite the third that separates the fifths, and while they are more bearable than those illustrated earlier, they are hardly praiseworthy. The third, which is consonant, is heard on the third semiminim

Example 78. [Prohibited approach to the fifth]



of the diminished part, on the upbeat of the measure. Favoring such passages is the fact that fifths, which are not so simple as octaves, are not so easily comprehended by the ear; and also that the semibreve movement is not conjunct as in the previous examples. Some sing such divisions to fill the leap of the fifth, but I say these progressions should always be avoided. Yet if someone feels he must write such passages as these, or those illustrated earlier, let him at least use them sparingly. If there is no other reason against them, they remain in violation of the rule that says we should proceed from one consonance to another by contrary motion and of the rule that requires that in similar motion at least one part move by step, whereas it is plain that the semibreves here move by leap.

CHAPTER 48

The Measure

I have often used the terms measure (*battuta*), syncopation (*syncopa*), and rest (*pausa*), and it appears reasonable to define these before proceeding, for to employ undefined terms would not lead to any true knowledge.

Because they saw that disorder could arise from the diversity of movement within a composition, one voice moving more quickly or slowly than another, musicians devised a certain sign by which each singer might orient himself through faster or slower measures according to the note values in his part. (These were given in Chapter 2.) Such a sign, they found, was best when it was made by the hand in a way visible to all the singers through regular movements in the manner of the human

pulse. Some called the sign “measure,” others “sounding time,” and others—among them Augustine, that very saintly doctor, in Chapter 10 of his second book on music—call it by the Latin word *plausus*, after *plaudo*, which means hand-clapping.¹ This reasoning appears sound to me, for I cannot think of another movement they could have found that is made naturally that could have given them a rule or proportion, for if we consider the common quality in the two actions, the measure and the pulse, we find in them much resemblance. Pulse, which the Greeks call *σφυγμός*, is described by Galen² and Paulus Aegineta³ as a kind of expansion and tightening, or lifting and falling of the heart and arteries. It is composed of two movements (see Avicenna,⁴ second part of Book I) and two rests. The measure also has two movements, the fall (*positione*) and rise (*levatione*) of the hand—equivalent to the expansion and tightening or lifting and falling—and these are contrary to one another. It has two resting points also, for between contrary movements (according to Aristotle) there are always resting points⁵ (see Chapter 42 above), it being impossible for one movement to merge into the other. As medicine terms the first movement *συστολή* and the second *διαστολή*,⁶ music names the placing motion or downbeat *θέσις* [thesis] and the lifting *ἄρσις* [arsis]. Similarly, since medical authorities say that the pulsebeat may be either equal or unequal, musical rhythm results from the kind of equality and inequality found in quick and slow notes. [208]

Thus rhythm is born, and from it the many-proportioned movements

1. “In plaudendo enim quia levatur et ponitur manus, partem pedis sibi levatio vindicat, partem positio” (“In beating, the hand is raised and lowered; so the elevation demands one part of the foot, and the lowering the other part”). Augustine used *plaudo* in the sense of “beat” rather than “clap.”

2. *De pulsuum differentiis*, i.3. *Claudii Galeni opera omnia*, ed. Carolus Gottlob Kühn (Leipzig, 1821–33), 8, 500.

3. Paulus Aegineta, *De re medica*, ii.12. Ed. I. L. Heiberg in “Corpus medicorum graecorum,” 9 (Leipzig and Berlin, 1921–24); trans. Francis Adams (London, 1844–47), 1, 202.

4. *Canon of Medicine*, i.2. Facs. of *Liber canonis Avicenne*, Venice, 1507 (Hildesheim, 1964).

5. *Physica*, viii.8.

6. Zarlino has *συστολή* and *διαστολή*.

Although we still honor the names of some of these musicians, it is not for such chimeras that they are reputed but for the good harmonies and harmonious thoughts heard in their compositions. Despite their dabbling in these intricacies, they were able—through instinct rather than theory—to bring their harmonies to an ultimate perfection, even though their method was badly understood and abused by many others, to which the many errors committed by other composers in their works bear witness.

As regards theoretical or speculative music, few have taken the right path. Apart from Boethius, who wrote in Latin about our science and whose work is also imperfect, there has been no one who has gone beyond him into speculation on things pertaining to music, discovering the true proportions of the intervals—leaving aside Franchino⁶ and Fabro Stapulense,⁷ for one might call them commentators on Boethius—except Lodovico Fogliano of Modena.⁸ He, having perhaps considered what Ptolemy left written on the syntonic diatonic,⁹ took the pains to write a Latin book on the subject to demonstrate the true proportions of the intervals involved. The other theorists, leaning on what Boethius wrote on these matters, were unwilling or unable to go further, and occupied themselves by writing of the things mentioned. These things, which they said belonged to the quantitative genus, have to do with *modus*, *tempus*, and *prolation*, as may be seen in the *Recaneto di musica*,¹⁰ the *Toscanello*,¹¹ the *Scintille*,¹² and in a thousand books like them. In addition there are on such matters a diversity of opinions and lengthy disputations without end. There are also many tracts and apologies, written by certain musicians against others, which, were one to read them a thousand times, the reading, rereading, and study would reveal nothing but vulgarities and slander rather than anything good, and they would leave one appalled.

6. Franchino Gaffurio.

7. Jacobus Faber Stapulensis (Jacques Le Fèvre d'Étaples), *Musica libris quatuor demonstrata* (Paris, 1551; earlier editions as far back as 1496).

8. Lodovico Fogliano, *Musica theorica* (Venice, 1529).

9. *Harmonics*, ii.14.

10. Stefano Vanneo, *Recanetum de musica* (Rome, 1533). A copy in the Newberry Library, Chicago, Ill., contains three pages at the end with writing in Zarlino's hand.

11. Pietro Aron, *Toscanello in musica* (Venice, 1523; and many later editions).

12. Giovanni Maria Lanfranco, *Scintille di musica* (Brescia, 1533).

But actually we should excuse these writers, for they were the sophists of their time. They were as highly esteemed as the sophists in the time of Socrates and Plato. Their quantitative genus, which might truly be called sophistry in music, was as popular in their time as sophistry in the time of the philosophers mentioned. So we may well call this the sophistic art in music and these musicians musical sophists. [280] Therefore we ought always to praise and thank God that little by little—I know not how—all this has passed, and we have come to an age in which the only concern is the multiplication of good harmonies and melodies.

CHAPTER 72

The Common Steps, and the Characteristics of Diatonic, Chromatic, and Enharmonic Compositions

Up to now I have discussed matters pertaining to composition in the diatonic genus. It is reasonable—not to omit anything worthy of consideration—that I speak a bit about the other genera, the chromatic and the enharmonic, especially since there are some musicians today who labor and take great pains to put them to use.¹ Before starting our discussion, I think I should outline the steps of these three genera on the usual lines and spaces according to the manner of these musicians and show which steps are common to all the genera and which are peculiar to one. Then it will be easier to understand what is to follow.

It is essential to know that the greater system of each genus is contained between *proslambanomenos* and *nete hyberboleon*, eighteen steps divided and organized into five tetchords. Some of the steps were called—as Boethius shows²—natural and essential to the genus, others inci-

1. The reference is to Don Nicola Vicentino and his followers. From here to the end of Chap. 80, Zarlino seems to have as his object the refutation of the theories expounded in Vicentino's *L'antica musica ridotta alla moderna prattica* (Rome, 1555).

2. *De institutione musica*, i.21.

dental. The natural are those included in the four tetrachords: hypaton, meson, diezeugmenon, and hyperboleon; the incidental, those contained in the tetrachord synemmenon. The steps of the latter are named incidental (*accidentali*) because they are incidentally arranged among the first. This terminology is understandable, since few of the steps of the synemmenon correspond at the diapason with steps falling between proslambanomenos and mese, as do the steps of the other tetrachords [above mese], namely diezeugmenon and hyperboleon. Indeed, many of these steps [below mese] are different from certain steps of these two tetrachords only in name. There result, then, fifteen natural and essential steps, and three incidental ones, inasmuch as the step mese marks the end of the tetrachord meson and begins the synemmenon, as may be seen in many sources.

The steps are named according to the order given in Chapter 28 of Part II, so that there is no difference in denomination between the diatonic parhypate and lichanos and the corresponding steps of the chromatic and enharmonic. They do differ, however, when arranged on an instrument with respect to position or location. They will be higher or lower in the different genera, as may be seen in the case of the enharmonic parhypate, which is lower than parhypate in the other two genera, and the same goes for the diatonic lichanos, which is higher than the chromatic or enharmonic lichanos. This is explained also in Chapter 38 of Part II.

To show which steps are proper and natural, which incidental, and which common to the three genera named, I shall present three series of steps. The first contains only those which serve the diatonic; it includes no foreign step, so to speak, and is arranged according to common practice. The second series contains those steps which serve the chromatic, even though we will find among them many common to every genus but none peculiarly diatonic or enharmonic. In this order we will be able to recognize the characteristic steps of the chromatic and distinguish them from those peculiar to the other genera, for the former are all marked with a #, whereas the common steps are not. Although the steps *b* and *h* form the tetrachord synemmenon in this [chromatic] genus, they are not

Diatonic, Chromatic, and Enharmonic Composition

peculiar to any one genus but are common to all genera, because this tetrachord is joined to the first four incidentally, as I said. The third series, finally, contains those steps which serve the enharmonic. It includes the steps peculiar to this genus. These are marked with the sign \times , which differentiates them from steps peculiar or common to the other two genera. This may be seen in the series given in Ex. 189.

Example 189.

The image displays three musical staves, each representing a different series of tetrachords. Each staff is divided into five sections, each labeled with a tetrachord name. The first staff is labeled 'Diatonic series' and shows five tetrachords: 'Tetr. hypaton', 'Tetr. Meson', 'Tetr. diezeug.', 'Tetr. hyperbol.', and 'Tetr. Synem.'. The second staff is labeled 'Chromatic series' and shows five tetrachords: 'Tetr. hypat.', 'Tetr. Meson', 'Tetr. diezeug.', 'Tetr. Hyperb.', and 'Tetr. Synem.'. The third staff is labeled 'Enharmonic series' and shows five tetrachords: 'Tetr. hypat.', 'Tetr. Meson', 'Tetr. diezeug.', 'Tetr. Hyperb.', and 'Tetr. Synem.'. In the Enharmonic series, certain steps are marked with an 'X' to indicate they are peculiar to that genus.

Thus the characteristic steps of these genera are these: first, the third step of every tetrachord of the first series, proceeding upward, is peculiar to the diatonic; then the third of each tetrachord of the second series marked with the sign # is peculiar to the chromatic; and every second step of each tetrachord in the third series marked with the sign \times is peculiar to the enharmonic. [281] Those not marked by either sign are common to all the genera. Although these series are restricted in range, they could be enlarged as convenient. Such has been, indeed, the practice of composers, as may be observed in their works. No one should marvel at my decision to use the sign \times , perhaps not used previously. I could not find a more suitable sign already in use to indicate the enharmonic step or interval. If it is legitimate for philosophers—for example, Aristotle in the *Categories*³—to evolve new names for new concepts, why should not musicians invent new signs to indicate things pertaining to harmony? All

3. *Categoriae*, vii.7.

the more, I think, since music, as every scholar knows, is a part of philosophy.

CHAPTER 73

Whether in the Last Two Genera the Natural Steps May Be Used Simply Without the Steps Peculiar to Them

I have said so much already about the diatonic genus, that everyone must understand that this genus may be used perfectly well while remaining within its natural steps as well as otherwise. Since this is apparent, I shall expend no further discussion on the matter. Going on, then, we shall see whether the same applies to the other two genera; whether they may be written without the steps peculiar to another genus and without losing many consonances that produce perfect harmonies. This is how we shall find out. Let us take as the subject of a composition the tenor in Ex. 190.

Example 190.

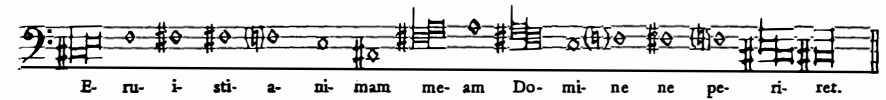


It is of the first mode¹ and follows the natural steps of the diatonic genus. There is no doubt that we could write a four-voice piece or one with more voices around this subject, using only the natural steps of this genus throughout without having to use any step peculiar to the other genera, as anyone may see in the example.

[282] But if we wish to transpose this tenor into chromatic steps, as in Ex. 191, anyone with common sense can see that it would be impossible to write a composition upon it. Unless we depart from the essential steps contained in the second series shown above and use some of the steps

1. The standard numbering is used here.

Example 191.



peculiar to the other genera, we cannot have the perfect harmonic accompaniment required for a perfect composition. It is clear, then, that in this genus it is not possible to compose a perfect piece, as some have dreamed. Besides, we shall find some very strange melodic progressions in this tenor, the intervals of which are far from the ratios found in the sonorous numbers.

But let us leave this matter, for I believe it should be apparent to everyone learned in this art, and pass on to the enharmonic. In this connection it will become evident how unscholarly are those who have said that it is possible to write in this genus without departing from its proper, natural steps and without the help of steps peculiar to the other genera. If we try to set down the following tenor [Ex. 192] using only enharmonic

Example 192.



steps without departing from the given steps of the third series, we shall find many notes that cannot be accompanied by consonances in the other parts in a way that will produce the perfect harmony necessary to good, sonorous, and perfect compositions. If in certain places the enharmonic steps should be capable of such harmonies, it will be necessary for the parts to sing in a way that produces unpleasant and harsh sounds, as experience has always shown. We may therefore conclude that it is impossible to use the last two genera simply and independently and to obtain the perfect harmony without the steps peculiar to the other genera.

*There Are Two Styles in Music, and
the Compositions of Certain Modern Composers
Do Not Fall into Any of the Genera Mentioned*

Music has two styles (*maniere*): the ancient style demonstrated in Part II¹ and to be demonstrated again shortly, and the modern style. If one wished to write in the ancient style it would not be impossible to observe everything the ancients themselves did in their melodies. But if one wished to employ the modern style, with its multiplicity of parts, always seeking the perfect harmony, it would be vain to try to accomplish this while putting the last two genera into use. This should be clear from the preceding chapter. It is particularly true if one aimed to respect all the precepts of the ancient musicians I have given. While some persons today think they are writing ancient chromatic and enharmonic melodies, they are not. For they exceed their bounds and fail to use things appropriate to such compositions, namely melody, rhythm, and text coordinated together. They use not only the steps of the genus in which they say they are composing but also steps proper and peculiar to other genera and still others that are altogether foreign. They use also many diatonic intervals and strange melodic turns, such as the intervals of the tritone, semidiapente, and similar ones, all strictly avoided by the ancients because they not only offend the ear but contradict reason, as may be seen and heard in their works. [283] Since these works fail to meet the given requirements, they cannot be said to be composed in these two genera as used by the ancients; rather they are in a genus invented by them and subject only to their own whims.

1. Chap. 4. By ancients Zarlino does not mean here, as he usually does, the older polyphonic composers, but the ancient Greeks.

*The Diatonic May Proceed Melodically with
the Intervals of Major or Minor Third, and
This Does Not Change Its Genus*

The composers I speak of realize they have no solid evidence to prove that their works are either purely chromatic or enharmonic. Yet they would adduce as proof the fact that the diatonic proceeds by two whole tones and a semitone in each tetrachord, the chromatic by two semitones and a trihemitone (which is the minor third), and the enharmonic by two dieses and a ditone (which is the major third). Since the diatonic [tetrachord] does not proceed by a ditone or semiditone, they argue, the use of these intervals produces a change of genus. This argument would be conclusive, if what they say were true. In my opinion, however, they are deluding themselves, inasmuch as all these intervals are found in the diatonic, as we showed in many places in Part II. Therefore, there is no reason why they should not be used, undivided, in that genus; nor will their use change the composition to chromatic or enharmonic, as they believe. Used in this way they do not appear as elements or simplest parts of the genus but as mixtures or composites compounded from the primary intervals or elements. That this is true is shown by Boethius in Chapter 23 of his first book on music, where he states that though the whole tone and semitone in the diatonic genus could be called a trihemitone, it is not uncompounded, since it is formed of two intervals. From this it follows, as I showed in Part II,¹ that Boethius considers the non-composite trihemitone to be an element of the chromatic genus, whereas the composite one, composed of two elements, whole tone and semitone, belongs to the diatonic.

The same may be said of the ditone in the diatonic, which is composite and not simple. In the enharmonic, however, it is uncompounded, that

1. See the extensive discussion of the diatonic use of the trihemitone in Part II, Chap. 46.

is, it is an element of this genus. He makes this even clearer by using the phrase “which are called noncomposite,” never saying “which are non-composite” in referring to these intervals. He knew well that the last two genera borrowed intervals from the diatonic; and this I demonstrated in several places in Part II. There is nothing inappropriate about passing from the simple to the composite, for such is the order of things. It would, however, be impossible to pass from the simple, from the elements, to something still simpler in the same genus. We may draw an analogy from the letters that make up words: we cannot pass to a simpler unit than the letters, for within their genus there is nothing simpler. 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. They can be easily derived, that is, or else the potential would be vain. This should not seem strange. Though man is an animal who laughs, he is not constantly in the act of laughing. Similarly, in the ditonic genus one does not always actually proceed through each tetrachord by whole tone, whole tone, semitone.

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. It is not valid to say, as these musicians do: In this piece the intervals of ditone and semiditone are found in succession; therefore it is chromatic or enharmonic. However it is valid to say: This piece proceeds by a small semitone; therefore it is chromatic; or: This proceeds by a diesis; therefore it is enharmonic. [284] Similarly it is not valid to say: This is a rational animal, therefore it is human. Because this distinction of rational is common to us and the gods, as Porphyry states.² But it is valid to say: This animal is rational and mortal, or it is one that laughs; therefore it is human. For the proper

2. Porphyry, *Isagoge et in Aristotelis Categoriae Commentarium*, 3b.16.

difference is what determines the species. In the same way these last differences of semitone and diesis are the ones proper to these two genera.

Therefore the intervals found in diatonic tetrachords may be considered in two ways: simple, as those mentioned a short while ago; and composite, as are the major third and minor third. When these latter are combined with intervening sounds, they may be called, as they were by the Greeks, *systemata*, meaning complexes or ordered compounds. With no intervening sound, they may be called *diastemata*, meaning spaces or intervals. It would indeed be very foolish to believe that we and before us the ancients, before the other two genera were in use, could use only the single kind of minor interval found in the systemata, which are not themselves systemata, and not use the larger intervals which could also be systemata. For without the liberty to use the larger intervals, I do not know how good melodies could be achieved, since every time we began to sing we would have to ascend from a low note of the scale to the top note by small intervals, and down the same way. Now tell me: what kind of sweetness or smoothness of melody could result from that? This would be analogous to having to proceed in speaking from whatever letter of the alphabet one began through the rest of the alphabet in that order, omitting none. How could we express ideas that way?

Someone might state that it is legitimate to depart from the series and take it up again at an octave, fifth, or fourth. If this were so, the diastemata or large intervals would also be legitimate. If not only the intervals mentioned but also the tritones—which these composers use although they are dissonant—are legitimate, I do not see why such smaller intervals as the ditone and semiditone, consonances whose ratios are in the sonorous numbers, should not be permitted in any part of a piece. Since there is no contrary reason, we may state that if the large diastemata are legitimate in the diatonic genus, the others mentioned must be also. Nor does their use prevent the genus from being diatonic, and not only this but a simple diatonic, unmixed with another genus. This never happens with the other two genera. For each time composers progress by a large whole tone they use an interval that is properly diatonic. Thus there result genera that can be called mixed.

What I have said about one genus with regard to diastematic progres-

sions by large intervals applies also to the others. When we hear in a diatonic composition a melodic step of the small semitone or diesis, we can call the melody mixed or even chromatic. But let us be cautious. Although a proper diatonic melody moves upward by a semitone and two whole tones per tetrachord, and a chromatic one moves by a large and small semitone and then a trihemitone, and an enharmonic one moves by two dieses and a ditone (and the converse in descending), nevertheless many of the large diastematic intervals are common to all the genera. The intervals that remain proper to a particular genus are: the large whole tone to the diatonic, the small semitone to the chromatic, and the diesis to the enharmonic, as anyone's experience will demonstrate.

In conclusion let us analyze the validity of these statements: [1] In this piece a major third without an intervening sound is sung; therefore it is enharmonic. [2] Here is the minor third; therefore this is chromatic. If these statements are true, they should have been valid also before the last two genera were discovered, when only the diatonic was used, and the chromatic semitone and the diesis were not employed. Yet the ancients did use the intervals of major and minor third without intervening sounds, and this is certainly proved by the reasons given above. How little logic there is in the statements will therefore be plain to all who have even a little musical knowledge.

CHAPTER 76

*Where No Change of Melodic Style Is
Heard in a Composition, There Cannot
Be Any Change of Genus*

[285] We have seen that changes of genus are brought about not by the introduction of major or minor thirds, divided or undivided, but by a melodic progression through intervals proper to certain genera. It remains to be noted that the change from one genus to another is also accompanied by a change in melodic style, just as a change of mode con-

sists of a change melodically from one species of octave or system to another and of a change in the cadences. Thus if I hear the same melodic style in one piece, whose parts proceed by a systema of ditone or semiditone, that I hear in another, whose parts proceed by the diastema of the same intervals, and if my ear is affected in the same way by both, I do not see how any great difference can exist between the two compositions. Therefore I say that there cannot be a difference in genus between compositions that do not sound different in melodic idiom, just as there cannot be a difference in mode between compositions that do not differ in their melodic progressions and cadences. Conversely, a difference of genus may be assumed when a notable divergence in melodic style is heard, with rhythm and words suitably accommodated to it. Now I do not allude to the kind of difference in melody that we observe between one mode and another, as between the first mode and the third, for such variation remains within the diatonic genus. I refer rather to a difference in melodic style that separates it entirely from that of diatonic compositions. Used in the manner of the ancients, accompanied by a characteristic meter, such melodies should move the ear in a peculiar way by comparison with those commonly heard and they should reveal a diversity of style. Whether such a diversity is really heard in those modern chromatic compositions that they call simple I shall leave to those skilled in the art and science of music to decide for themselves.

CHAPTER 77

*The Utility of These Two Genera, and How
They May Be Used with Good Effect*

I said above that the last two genera could not be used simply without being mixed with the diatonic. I do not believe that I erred in saying so, for I have not found a single Greek or Latin writer who states that any genus besides the diatonic was or can be used separately, as I showed. Boethius confirms this in the fourth chapter of his fourth book on music,

where he gives the division of the Lydian mode in the simple diatonic genus, although he does not offer demonstrations of the other genera; and in the beginning of the fifth chapter he refers to it not only as simpler but as the prince of all the other genera. In this division—to confirm by example what I have said—he places four minor thirds without intervening steps. In the third chapter, moreover, he writes the signs of this mode in all three genera reduced into one, putting off to another time and to a more convenient place the demonstration of the other modes. Yet I find no example of the other genera used simply. Ptolemy, in Chapter 15 of his second book on music, gives examples of the modes in other genera, but never unmixed, as anyone may see.

I have wanted to state this because it is one thing to write the intervals of a genus as a series of pitches, and another to say that they can be used simply in that genus with good effect. 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. Flour is an example. Alone it would hardly be eaten with delight or do us any good, but blended with other things and used properly it is part of bread and other confections very agreeable to men. The same may be said of these last two genera. [286] 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. This will be clear from what I am going to say.

Their first advantage is this: 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. These steps are at times wanted to create a harmony that corresponds to gay or sad words. With the steps of these genera we can moreover transpose modes into higher or lower registers. Such transpositions are very necessary to chapel organists, who must at times move a mode from one register to another according to the voices available. This could not be done without the aid of these steps. Although the steps are often used on such

occasions, it does not follow that they are other than diatonically treated. When we proceed as described, they give the highest pleasure and delight to all who listen. On the other hand, listeners are much annoyed and their senses much offended at the inappropriate use of these steps without order and rule. When one step is too frequently substituted for another, a situation arises which Horace speaks of:

Citharoedus ridetur, chorda qui semper oberrat eadem.¹

Let no one be surprised by my saying we use the steps from these genera while proceeding in the manner described. We actually do use their steps but not the genera themselves. We use the parts but not the whole. As we shall see later, the genus used as a whole does not have a good effect, but in its parts it does. This is when the steps indicated by the accidental signs ♯, ♭, and ♮, and × only are employed. They must, however, be used in the manner described above.

If at times we come across a piece entirely free of these signs, we may say truthfully that its progressions are exclusively diatonic. But of a piece that includes such signs as ♭ and ♮ we would say that its progressions are chromatic mixed with diatonic. If, finally, we should come upon one that includes some step that is neither diatonic nor chromatic, we may name it enharmonic, provided such a step can be designated with the enharmonic sign, which is ×, and that the large semitone can be divided into two parts. Such a step will be among those found in the third series demonstrated above, and we can then say that such a piece progresses by steps from all three genera.

Such a mixture can be accomplished in many ways, according to the desires of the composer or performer. The mode in any case is transposed upward or downward out of its natural steps in the diatonic genus, and the composition is then said to be sung in *musica ficta*. The first way to do this—ignoring the little-used methods—is to have the piece proceed with steps marked by the sign ♭ right from the start [that is, in the key signature], resulting in a transposition down by a whole tone. Ex-

1. *Ars poetica*, 355–56: “a harper [kithara player] is laughed at who always blunders on the same string.” Fairclough trans., p. 479.

amples are the five-voice motet “Verbum iniquum et dolosum” by the Spaniard Morales,² and the very beautiful, artful six-voice motet “Aspice domine” by Adrian [Willaert].³ The second way is to use the steps marked with the sign #, again from the start. Then the mode is transposed upward by a whole tone. In both methods enharmonic steps are sometimes resorted to in order to make available the desired imperfect major and minor consonances. Although these steps are infrequent, the effect produced by the use of the two genera when they are touched is marvelous. I repeat that we do not use the entire genus but only a part of it, a few steps, indeed, blended with the diatonic genus, whose characteristic steps, whole tones, and large semitones, remain the basis of the composition, as anyone may observe.

2. In Felipe Pedrell, ed. *Hispaniae schola musica sacra* (Barcelona, 1894–98), 1, 1–55.

3. *Musica nova di Adriano Willaert* (Venice, 1559), eds. Hermann Zenck and Walter Gerstenberg in *Opera Omnia*, 5 (1957), 144.

CHAPTER 78

The Reason That Chromatic Compositions by Certain Moderns Have A Poor Effect

[287] We have replied sufficiently to those who insist that we compose in the chromatic and enharmonic genera when we are using only some steps from these genera. Truly it is one thing to use a genus and another to use only steps from it. In one case we use the whole, and in the other only parts. The use of the steps or even an interval, provided it is harmonious, may be conceded, since their effect is good; this constitutes the use of parts. It is not legitimate, however, to use the whole, that is, all the steps of a genus and all its intervals. To do so leads to a poor effect. I refer to the use of all the steps and intervals that a musician considers to be part of one genus and of no other in the melodic lines of the parts of a composition. To use steps from a genus, on the other hand, means to

accommodate parts of it to the melodic lines of diatonic compositions, proceeding with intervals found or possible in the diatonic genus. This has been successfully accomplished by many. Excluded from this usage, though, are the steps proper to the chromatic and enharmonic, the small semitone and the diesis.

There are some who say that, since the use of chromatic steps—if not the genus itself—leads to admirable effects, the use of the pure genus should increase the beauty of the melody. To these I reply what I have already said: the simple chromatic and enharmonic genera cannot be used. But even if they could be used, I would reply that it is not necessarily valid to state that if the part suits the purpose the whole will have an even better effect. It is a fallacy, in fact, as anyone with judgment will confirm. This may be verified in the other arts. For instance, in sculpture only a part of the whole piece of marble with which the sculptor begins is used in the statue. After selecting it, he uses only parts that suit his purpose, removing what is superfluous, and thus achieves the desired end. He does not accept all of the stone before him but only the part that fulfills his needs. Similarly musicians, recognizing that steps from the chromatic genus suited their purpose very well, whereas the use of the genera themselves was very awkward, selected those parts that served to make the diatonic more beautiful and graceful. By this means they led the diatonic to its perfection. They made possible in it every kind of harmony: sweet, bitter, or whatever was desired. This is notably true when the consonances are handled by a composer tastefully. The use of the parts, then, is valid, indeed necessary, but not so the whole. Through the aid of chromatic steps we may achieve good, sonorous harmonies and escape poor relationships in the diatonic, such as the tritone, semidiapente, and similar intervals that result from simultaneous singing, as I have shown already. Without the chromatic, many harsh harmonies and awkward lines would be heard. Although the poor relationships could be avoided with only the diatonic steps, it would be rather more difficult to do so, particularly while seeking, as one should, to vary the harmony. It follows that the use of the steps mentioned will render the modes sweeter and smoother.

I cannot help believing that the ancients considered the diatonic a more severe and natural genus than the other two for no other reason than because they observed how chromatic steps multiplied the melodic resources and rendered the melody more seductive. Standing alone on its proper steps, the diatonic was more virile and fierce. I think also that the chromatic was called lascivious, soft, and effeminate because of the effect of mingling its steps with those of the diatonic. I am led to this belief by Boethius' statement that a single step placed by Timotheus on a diatonically ordered ancient instrument had precisely this effect.¹ The same is said to have occurred—so one reads—when Terpander did likewise with the same instrument.² [288] The reason may be readily comprehended: they did not use the simple chromatic, but only a certain step from it to adorn the diatonic.

It seems to me that the ancients referred to the enharmonic as difficult because it must have been then, as now, a difficult genus to perform on an instrument. To make use of enharmonic notes on our instruments requires a far more expert performer than does the diatonic or chromatic. It was, however, difficult in other respects as well, but of this I shall speak later.

To return to the subject at hand, let us say then that the use of the parts is good and convenient to the composer, and that the whole, aside from its inconvenience, deprives a composition of all its beauty because it introduces a number of very disproportionate elements that are completely inharmonious and cannot lead to a good ensemble. Someone might state that such things displease not because they are poor in themselves but because our ears are unaccustomed to them. This is as much as to say that some bad, tasteless food will seem savory after it has been eaten over a long period. I do not believe that anyone accustomed to inferior food who tastes some that is superior will be unable to distinguish between them and fail to recognize that the latter is delicious and pleasing whereas the former had been poor and without pleasure. Likewise I feel that even if a person were to habituate himself to such sounds,

1. Boethius, *De institutione musica*, i.1.

2. *Ibid.*, 20.

he would confess to their poverty upon hearing a well-written diatonic composition.

So that what I have been saying will not seem unreasonable, I would like to investigate why such compositions sound poor. It must be understood that nothing whose parts possess what the Greeks called *συμμετρία* [symmetry] can fail to please the senses, for the senses are delighted by proportioned objects. Conversely, it is impossible for the senses to be pleased by what is not proportioned. Therefore, the diatonic genus cannot but superbly please the senses, since it is proportioned, as I shall show. On the contrary, since the parts of the chromatic and enharmonic are disproportionate with the whole, it is impossible for them to please the senses. It must be noted that I say whole at this time in the sense of the entire composition, that is, with all the parts united; and by part I mean here the melodic line of one of its voices. Likewise I mean by whole a single consonance, and by part each interval contained in the systema of that consonance. This understood, I can say that it is impossible for the diatonic not to please, since its parts are in proportion with its whole, inasmuch as there is not found in its parts any melodic interval not similar to a consonance used in counterpoint. For instance, the diastema of the octave as sung by a voice corresponds to that of the octave when it is arranged in counterpoint between two voices. Similarly the [melodic] interval of the fifth as sung is like that placed [simultaneously] in counterpoint. The same may be said of the fourth, both thirds and both sixths, the whole tone, and the large semitone. Their proportions are the same, whether in counterpoint or sung in the parts of a composition.

So there is no need to wonder when I say that the diatonic genus cannot but have a good effect, and on the contrary that the chromatic has a poor effect, and the enharmonic likewise. For in the latter two genera the intervals as used in the counterpoint do not have the same ratios as those the parts sing, and the converse. The interval of the small semitone sung in the chromatic is not proportionate to some used in the counterpoint. Besides, that interval is not actually set in counterpoint because it would have a bad effect, which is obvious: even syncopated it cannot blend with another interval to form a consonance. This is because it is

one of the *ecmeles* of which I spoke in Chapter 4. The enharmonic diesis also belongs to these, and its ratio is altogether alien to those used in counterpoint, resembling none of them, and is even farther from them than the small semitone.

Thus the enharmonic is less harmonious in counterpoint than the chromatic, for a genus is more offensive as it departs from any proportion. Many call the enharmonic “harmonic,” and consider it a very good genus, because used in combination with other genera it can have a good effect, as I have shown. Yet, as Psellus says, *Δυσμελωδικώτατον μέντοι τὸ ἀρμονικὸν, γένος τῆς μελωδίας ἐστί,*³ that is, the harmonic genus makes very poor melody, even though some think that its harmony can be utilized, if with great difficulty. [289] It is true that its melody is very bad and also that contrapuntally it has a very poor effect, since, as I have said, its melodic and contrapuntal intervals are not in proportion. Therefore I say that counterpoint or harmony in these two genera can never be good. Harmony improves as it approaches the correspondence of ratios we spoke about earlier.

3. Michael Psellus, *Opus dilucidum in quattuor mathematicas disciplinas* (Venice, S. Sabium et fratres, 1532), *Tes mousikes synopsis*, fol. e^{4r}.

CHAPTER 79

What Was Involved in Composing in the Genera

I showed in Part II¹ how the ancients recited their music and what was involved in the composition of their melodies, and this may suffice to permit the reader to compare modern and ancient usage. Now I want to show, lest something of value go unmentioned, certain things the ancients observed in the composition of melodies in these genera. We may then judge whether modern chromaticists are close to the truth or are straying from the proper path.

Let us recall, then, what I said. The ancients considered a song to be comprised of meter, harmony, and words, and this combination they

1. Chaps. 4, 5, and 7.

called melody. In composing in the genera they had not only different melodies, but also diverse meters. For the number of feet in a verse changed from one genus to another. This is clear from reading Plutarch on music. Speaking of the feet used in the enharmonic, he states that the spondaic was used,² and he implies as much in other places. Later, speaking of the enharmonic of Olympus, he recalls the part the paeon and trochaic played in composing in this genus.³

The ancients followed this practice in the others as well as in the enharmonic, as may be learned from Boethius in Chapter 3 of his fourth book on music, where, to put it briefly, he says that the ancients invented certain signs to write in their songs in place of the full names of the steps. These signs were allocated according to the genera and modes and were used for the sake of brevity when they wanted to write a melody on a poetic text. Thus they managed to note down not only the words of the verse but also the melody.

Plutarch says later that the first *nomoi* (*leggi*) sung with string instruments were mixed with verses in which the dithyrambic word was sung.⁴ This was a word composed of several words, as is this one: *σελαενονεοάεια*, written by Plato in *Cratylus*. It consists of three words: *σέλας*, meaning “light,” *νέον*, meaning “new,” and *ἔνον*, meaning “old.” This, he says, would be an appropriate word for the moon, since it is constantly changing in light and renewing itself.⁵ Aristophanes uses such words copiously in the comedies; and perhaps it is these that Horace calls *sesquipedalia*.⁶

The dithyrambic word was contained in certain quick feet more than in any other feet. From these verse feet was derived the measure of the melody. The melody consisted of a certain mode (*modo*) or *aria di cantare*, as we would say, such as the airs on which we now sing the

2. *De musica*, ed. François Lasserre in *Plutarque de la musique* (Olten and Lausanne, 1954), Chap. 11.

3. *Ibid.*, Chap. 33.

4. *Ibid.*, Chap. 28. Zarlino refers to the *nomoi* as *leggi*, deriving this term from one of the principal meanings of the Greek *νομός*, which signifies “custom,” “law,” or “ordinance.”

5. *Cratylus*, 409. Zarlino’s text has *Σελαενοάεια* and *ἔνον*, which have here been corrected.

6. *Ars poetica*, 97, literally words “a foot and a half long.”

sonnets or *canzoni* of Petrarch or the *rime* of Ariosto. These airs cannot be changed or altered in any particular from their determined meter, or they would offend the ear, just as we are disturbed if the meter in a dance is even slightly altered.

Thus we see clearly that in composing in the genera meter was involved, since it was contained in the verse, and not just meter in a general sense, but this meter or that one; that is, this foot or that one: dactyl, spondee, trochee, or similar ones. So it is apparent that the ancients used in these genera one determinate verse, but it is not possible to state with certainty just what kind of verse it was. Similarly we have no knowledge of their modes or airs for singing. For none has been left in writing so far as we know. Nor have we learned that the ancients sang in many parts in one ensemble as we do. [290] Rather, the ancient practice was to sing alone, accompanied by one instrument. The Hebrews did likewise. Those who testify to this are Josephus⁷ and Saint Jerome,⁸ who state that in ancient times the sacred psalms were sung by one voice with the organ.

It is my firm belief that some of the strings of their instruments were tuned in octaves, fifths, and fourths, as are many I have seen and heard, and that the harmony that issued from these strings was continuous and without intervals of quiet. Above this they improvised another part with the high strings. What makes me believe this is that there remain very ancient instruments constructed in this way and played as I have indicated. One of them is called *sinfonia* by the Tuscans; some say that it is the ancient lyre. Possibly Ottomarius Luscinius was of this opinion, because he names it lyre in Book I of the *Musurgia*.⁹ It may be what Horace commemorates when he says:

Ut gratas inter mensas symphonia discors.¹⁰

7. Josephus Flavius, *Jewish Antiquities*, ix.269, ed. with Eng. trans. by Ralph Marcus (9 vols. Cambridge, Mass., 1937), 6, 143.

8. St. Jerome, *Ad Marcellum*, ed. Jacques Paul Migne, *Patrologiae cursus completus, series latina*, 30, 219.

9. *Musurgia seu praxis musicae* (Strassburg, 1536), Chap. 1.

10. *Ars poetica*, 374: "At a pleasant banquet a symphonia is out of tune."

Another instrument with strings tuned to the consonances mentioned is called *altobasso* in Venice and is square and hollow. This is how it is used: while the performer keeps the time by striking the strings with a stick held in one hand, he holds a flute in the other hand and plays a melody after his own fashion. Such a performance is not restricted to string instruments; it can be observed on winds also. In Tuscany there is an instrument called the *cornamusa*, on which two or three continuous sounds, tuned in consonance, can be played. These sounds result from two or three bass pipes, but at present one hears but a single pipe. Above the bass sounds a melody played on a treble pipe used to be heard, which, though it did not sound in tune with the bass at every point, harmonized correctly at the end and at certain cadences. This is the custom on all such instruments, and it is also the practice when groups of military or naval trumpets play together. While many of them produce a continuous sound, others play an appropriately varied melody that gives the signal to fight or gather into ranks, etc. All of this leads me to believe that those pipes the ancients named "right" and "left" which they used, as I have said, in the comedies, were coordinated in this manner.

Ancient organs were also similarly constructed, for they were not made like modern organs. I base this on the testimony of the most excellent builder of such instruments, Maestro Vincenzo Colombi of Casalmaggiore, who told me in Venice that many years ago in Piedmont near Turin he found a very ancient organ. It was without pipes and completely rotten. The left or bass part of the keyboard had keys so wide that even a large hand could barely stretch to five keys. But the size of the keys diminished progressively toward the right or treble register. From what he saw he held that it certainly could not have been tuned in the manner of our modern instruments. There are many other string and wind instruments constructed to be played in this way, but not to be overlong I shall drop the subject.

The genera, then, consisted of melody, meter, and words. Not every kind of verse or foot was involved in one of their compositions but only a determinate meter. This is how they practiced their genera, and it was not difficult or impossible for them, because they could sound any inter-

val they desired in the melodies without intolerably disturbing the ear. For they did not write counterpoint as we do but used a simple kind of harmony, as we have seen.

CHAPTER 80

A Rebuttal to the Opinions of the Chromaticists

Finally, the chromaticists are of the opinion that any interval whatsoever may be sung, even though its ratio or proportion is not found among the harmonic numbers. Here is how they justify this. The voice is capable of forming any interval, and it is necessary to imitate ordinary speech in representing the words as orators do and ought. Therefore it is not inappropriate to use all these intervals to express the ideas contained in the words, with the same accents and other effects we employ in conversation, so that the music might move the affections. [291]

I reply that it is indeed inappropriate. It is one thing to speak normally and another to speak in song. They say we must imitate orators if our music is to move the affections. Yet I have never heard an orator use the strange, crude intervals used by these chromaticists. If orators were to use them, I do not see how they could sway the mind of a judge and convince him of their point of view, as is their goal; rather the contrary would occur. It would be possible to include such things comfortably in one voice of a composition, where these accents, properly used, would have a good effect. Were this voice combined with others, however, the result would compel one to seal one's ears.

Their contention that because the voice can sing every interval all of them may and ought to be used is also not valid. One might as well say that since man is capable of both good and evil, it is legitimate for him to commit any infamy and act contrary to good custom and against all that is proper and just. Certainly the ancients never held such malign opinions, or took such presumptuous license as to spoil anything good in music. Rather they sought to diminish the bad and increase the good and

even to improve it. What they would have thought of such license may be gathered from what the prince of ancient musicians, Ptolemy, wrote against Aristoxenus, Didymus, and Eratosthenes. He not only would not praise, but condemned some of their divisions of the tetrachord, because they included intervals in ratios outside the superparticular genus.¹ If he so severely criticized those ancients for a tetrachord out of which they did not make counterpoint, how much more would Ptolemy have reprimanded these moderns if he could have seen their compositions! Disturbances and disproportionate intervals are found not just in one part, but sometimes in all the parts together. Surely, as a man of great authority and a good teacher, he would have wasted few words on them; he would simply have punished them as their presumption deserved.

They also say that we should use all the steps available on an instrument, so that they would not be there in vain. So much is true certainly: something not used serves no purpose. But the use must be reasonable and purposeful, for an unreasonable and purposeless use is a bad use. If every possible interval of an instrument had to be used—and there would be a great many in some cases—why not also say that each of these intervals should be divided into two parts, and the resulting intervals divided, and so on to infinity? This multiplication of the possible sounds, they say, would permit the expression of every nuance through every kind of tone. Just how ridiculous this is I shall let decide whoever is capable of reason. While many steps and intervals are possible on an instrument, these should not be used without purpose or unless demanded by the composition and the mode. To employ something without need or purpose is truly futile and indicative of a lack of discrimination, not to mention the irritation that it causes the senses involved.

True, there are many who are not disturbed by hearing fantastic new things, whether they are good or bad, but connoisseurs of the precious and good cannot tolerate what is poor. There are some, on the other hand, who, deceived by the opinion of many and lacking any judgment themselves, attend to the words of a few with more authority than them-

1. *Harmonics*, ii. 14.

selves and repeat after them: this is good; this is bad. If such persons were shown the truth, they would soon change their minds. They are like persons ignorant of jewels, who, presented with a beautiful counterfeit and told it is valuable, appreciate it greatly. They think all jewels are worth a lot of money and do not recognize the true worth of what they see. A less beautiful but good gem is not so much appreciated by them, but when they are told the first is a fake and the second true, their opinions change quickly.

I have said all this for those who cannot see the difference between a flea and an elephant to make them realize that nothing good can be accomplished outside of our genus, used, as we are accustomed to, with chromatic and enharmonic steps where appropriate. Only if we return to the practice of the ancients and coordinate meter, melody, and words can we use these genera otherwise. This technique was explained in Chapter 7 of Part II. If any way to use the genera better than ours were possible, surely in all the years music has existed since the last two genera were abandoned, some ingenious person would have put at least one of them to use. [292] For I have heard that many have spent years on this; yet they have not succeeded in finding anything pleasing.

It would have been tragic indeed if the beautiful in music had been set aside and the less beautiful retained. But this would have been incredible, for in the other arts and sciences that are full of grand speculations but are of little utility the good has always survived, while the bad has been abandoned as useless. This, in my opinion, is the way it happened with music.

I hope some day to see this science so well established and perfect that no one will desire more than what is actually in use. I say this because I do not see that it is now in such a perfect state as may come. This I cannot describe but can imagine. It may come when music is embraced by some noble spirit whose goal will not be the mechanical one of gain but honor and immortal glory. These he may earn after laboring in our science and raising it to the ultimate point that I have suggested.

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