

*The Letters of*  
**MARSILIO FICINO**



Translated from the Latin by members of the Language  
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SHEPHEARD-WALWYN

76<sup>1</sup>

## De rationibus musicae

*The Principles of Music*<sup>2</sup>

Marsilio Ficino to Domenico Benivieni, illustrious philosopher and master musician: greetings.

PLATO thinks that true music is nothing other than harmony of mind: natural, insofar as its powers are consonant with the powers of mind, and acquired, insofar as its motions are consonant with the motions of mind.<sup>3</sup> He thinks that the reflection of true music is that music which modulates notes and sounds to charm our ears.<sup>4</sup> He believes that the Muse Urania presides over the former and Polyhymnia over the latter.<sup>5</sup> Hermes Trismegistus says that both have been assigned to us by God, so that through the former we may continually imitate God Himself in our reflections and dispositions and through the latter we may regularly honour the name of God in hymns and sounds.<sup>6</sup> Pythagoras was accustomed to call him a master musician who had attained both the true music and its reflection, and he and his followers have acknowledged this in both word and deed.<sup>7</sup>

So greetings, Domenico, you master musician! As for your long-standing questions to us on some of the principles of music, you really know the answers yourself. Nevertheless, since you so wish, accept a brief re-statement of them in our letter.

*Ratios*<sup>8</sup>

As you are aware, musicians consider the principal ratio to be that of two to one. This produces the *diapason*, the perfect consonance of the octave; the consonance which poets entitle Calliope.<sup>9</sup> The second ratio is considered to be that of one and a half to one. This produces the *diapente*, the almost perfect harmony of the fifth note, five being the number to which the lyric poet ascribes the nectar of Venus.<sup>10</sup> The third ratio is that of one and a quarter to one. From this is born the gentle harmony of the third note, recalling Cupid and Adonis.<sup>11</sup> The fourth ratio is that of one and a third to one, by means of which the fourth note now reverberates, as if midway between a consonant sound

and a dissonant, blending something of Mars with something of Venus. In particular, the third, the fifth, and the eighth, which are more pleasing than the rest, remind us of the three Graces.<sup>12</sup> The ratios which unfold at will beyond the double<sup>13</sup> can be reduced to the likeness of those we have mentioned. Here I would just add that the ratio of one and an eighth to one produces a tone, while a smaller ratio produces a semitone.<sup>14</sup>

Advancing step by step on this principle, the notes proceed from the low one, which Orpheus calls *hypate*, up to the high one which he calls *neate*, by way of the intermediate ones, which he calls *dorians*.<sup>15</sup> To begin with, the low note, because of the very slowness of the motion in which it is engaged, seems to stand still. The second note, however, quite falls away from the first and is thus profoundly dissonant. But the third note, regaining a measure of life, seems to rise and recover consonance. The fourth note falls away from the third and for that reason is now somewhat dissonant; yet it is not so dissonant as the second, for it is tempered by the charming approach of the subsequent fifth and simultaneously softened by the gentleness of the preceding third. Then, after the fall of the fourth note, the fifth now arises; it arises, mark you, in greater perfection than the third, for it is the culmination of the rising movement; for indeed the notes that follow the fifth are held by the followers of Pythagoras not so much to rise as to return towards the earlier ones.<sup>16</sup> Thus the sixth note seems to return to the third and accords very well with its yielding gentleness, for six is three doubled. Next, the seventh note unhappily returns, or rather slips back, to the second and follows its dissonance. Finally the eighth is happily restored to the first, and by this restoration it completes the octave together with the repetition of the first and it also completes the chorus of the nine Muses,<sup>17</sup> pleasingly ordered in four stages as it were: the still state, the fall, the arising, and the return.

The followers of Pythagoras think that a chorus of this kind is round, yet ovate rather than spherical.<sup>18</sup> Within it, as if uniting the breadth of the first note to itself through the more pointed end, the eighth now produces a single note from itself and the first. And just as the eye perceives ovate roundness as a single shape, though it be broader at one end than at the other, so the hearing takes in as one the note which resounds from the low one and the eighth and which rises sweetly and gradually, like a pyramid, from a broad base to a sharp peak.

We believe this is why nature has bestowed this sort of shape upon the instrument of hearing and a similar shape upon the instrument of

speech; and why art, likewise, has done all it could to bestow a similar shape upon the instruments of music. There is no doubt that the closer they are in shape to an oval or pyramid, the more harmonious they are.

### *The Universal Causes of Harmony*

Next, we must ask why all musicians make especial use of those ratios which we have described above. They acknowledge them in different ways on different occasions – in the size of pipes, in the mass or weight of other instruments, in the tension and length of strings, and finally in the vehemence of action and the speed of motion, as well as in their opposites. The followers of Pythagoras and Plato consider the one itself the most perfect and the most pleasing of all. On the next level they put rest in the one; then, thirdly, actual restoration to the one; and finally, an easy return movement to the one. At the other extreme, they consider disconnected multiplicity the least perfect and most distressing; second to this is movement towards multiplicity, I mean a multiplicity which finds it difficult to return to the one.

Now that we have laid these foundations, let us build what I may call the house of music. If you tension two equal strings on a lyre absolutely equally, you will say that they are in the one, and hence you will hear unison. But if one of the strings be tensioned more than the other, there will now be a departure from the one. For example, if you add a tenth part more,<sup>19</sup> this departure from the one occurs by means of that part which can restore the wholeness of the one only with considerable difficulty, because it needs the addition of nine parts for full restoration. Consequently, the ears are brutally offended in that sound because of its excessive distance from the one. And if you add a ninth part rather than a tenth, this is also very far distant, for it needs eight parts to effect the return. The principle will be much the same if you add an eighth part instead, or a seventh or a sixth or a fifth, since fractions of that kind still have difficult access to the whole. However, if you proceed to tension one of the two strings above the other by a fourth part, this is the point where the ear is in some way delighted, since easy access to the one appears here, the addition of three parts being sufficient for this fourth to complete the whole. Now three parts are easily added to one to achieve unity, for the number three is considered by many to be indivisible, all-embracing, and the most perfect of all, in which respects it corresponds most closely with unity. Indeed, the ratio of one and a quarter to one produces the

melody of the third note. Moreover, if you proceed from the outset to increase the tension by a third part, the harmony of the fourth will delight you, for a third part easily recreates the unity as a whole, since it completes it by the addition of two parts. Now two are easily added to one and easily come to rest in one, for duality is the first departure from one. However, this superior harmony produced by the third part will charm you the more fully because duality is reduced to unity purely on the basis of three. Similarly, if from the outset you correctly tension one of the two strings by a half more than the other, this ratio of one and a half to one produces the harmony of the fifth and gives greater delight because from there the return to one is very short and rapid. For when one part has been added to it, it becomes whole, since a whole is made from a half and a half. Now one is easily added to one, and through them both there is a blending into one.

But if after tensioning one of the strings, you now increase the tension on the other by exactly the same amount,<sup>20</sup> you certainly do not move further away from one, as in the previous examples, but you instantly recreate that full unity which had to some degree been dissolved. At this point, therefore, the ratio of two to one now fills the ears with wonderful pleasure by means of the octave, the most perfect harmony of all. One must indeed remember that the hearing is in all places soothed by unity and always offended by duality, as if by division. And so, whenever it most clearly perceives two notes as two, then is it most offended. But when it perceives this less, less offence arises; and when least, least. Hearing indeed longs for unity, since it itself is also one and arises from one, but it desires a unity perfectly blended from the many and composed in the same proportion as that by which it itself is also naturally brought to a unity from the many.<sup>21</sup> Finally, since hearing itself consists of a multitude of natural parts which blend fully together into one form, it readily welcomes a number of notes when they are brought perfectly into one note and into harmony. This occurs particularly when one of the two notes in some way absorbs the other into itself or joins it to itself. This can be achieved solely by virtue of those ratios which we have been discussing.

### *The Physical Causes of Harmony*

Almost all philosophers consider that pleasure arises from a correspondence of object with sense. For the moment, I make but passing mention of the fact that the followers of Plato, in their scheme of the senses,<sup>22</sup> match sight with fire, hearing with air, smell with a vapour

blended from air and water, taste with water, and touch with earth; and they think that wondrous pleasure appears when the proportions of something perceptible through its qualities and degrees match up and harmonise at every point with the proportions which constitute the combination of the particular sense with spirit.<sup>23</sup> The nature of pleasure itself is a question which we have dealt with at great length in our book *On Pleasure*.<sup>24</sup> And so – not to digress further from our purpose – the followers of Plato locate in the constitution of hearing<sup>25</sup> one measure of earth; also one of water, but with a third more; one and a half measures of fire; and lastly, two of air. Hence they consider that the power of proportion appears most strongly in the ratios of one and a third to one, one and a half to one, and two to one.

#### *The Astronomical Causes of Harmony*

There are those who trace such things back to a loftier plane and, in the manner of the Pythagoreans who affirm a celestial harmony, derive the principles of harmony from some celestial power or some celestial correspondence.<sup>26</sup> And while merely alluding to their view that the extent, or depth, of the celestial spheres, as well as their intervals and the rapidity and slowness of their movements, are determined by those ratios which we have described, I certainly cannot pass over in silence the fact that if you start out from the very head of the twelve celestial signs<sup>27</sup> and then wish to move through those that follow, you will find that the second sign falls away from the first in some way. And just as with notes we find the second dissonant from the first, so here we find that the second sign is in some way dissonant from the first. But then the third sign, as though it were the model for the third note, looks upon the first constellation with that friendly aspect which astronomers call sextile. The fourth sign, although dissonant, is but moderately so, as they say, and in the view of musicians this is the nature of the fourth note. Then the fifth constellation looks benevolently upon the first with a very friendly and agreeable aspect, thereby providing a model for the fifth note in music. Astronomers give the name 'trine' to an aspect of this kind and consider it most beneficial.

But what shall we say of the sixth constellation, by which is indicated the soft and, so to speak, frail consonance of the sixth note? Although astrologers, in judging a natal star, consider this frailty to be undoubtedly bad, the ancient theologians think it useful, since man himself is in truth soul, while the body is the prison both of soul and of man, and

the frailty of a prison will be useful to anyone shut in by the prison. After this, the seventh constellation, which they call 'angular', being very vigorous in its discord, which is set against the first constellation, and in its open hostility, seems to pre-figure the seventh note of music, which with its vigorous, even violent, tone is now most clearly discordant from the first note.

There follows the eighth constellation, which, though commonly seen as unfavourable because it is allotted to death by astrologers, is nonetheless most fortunate for the celestial soul, in the view of the ancient theologians, since it finally unbars for it the earthly prison, freeing it from elemental dissonance and restoring it to celestial consonance. It is not without good reason, therefore, that it denotes the absolute consonance of the eighth note, the consonance that returns to the beginning. If someone then asks about the ninth sign, let him understand that it is as far from the first as the fifth is and that it now looks back at the first with a trine and kindly aspect; in the view of astronomers, wisdom and the goddess Pallas are expressed by it, and in the view of musicians, the nectareal Venus of the fifth note. Now what of the tenth constellation? It displays ambition, which astrologers see as the foundation of human discord and which musicians see as the moderate and seemingly human discord of the fourth note. Then the eleventh, the sign of human friendship, demonstrates the friendly melody of the third note. Lastly, the twelfth, allotted to hidden enemies and to prison, expresses the dissonant falling away of the second note from the first.



## 72

- 1 Kristeller identifies the addressee as Paolo Attavanti (*Sup. Fic.*, II, Index, pp. 357 and 361). See letter to Paolo Theologo, a member of the Servite Order, in Book IX, *Opera*, p. 904. See also *Letters*, 2, 38 which was wrongly associated in the notes with Paolo Orlandini. Paolo Ferobanti, to whom Ficino writes Letter 8, was also a member of the Servite Order. It is possible that the two Paolos are the same person.
- 2 *Valere*, to flourish; *volare*, to fly.
- 3 Daedalus made wings for himself and his son Icarus; but Icarus disobeyed his father and flew too near the sun. The wax holding his wing-feathers melted and he fell into the sea and drowned.

## 73

- 1 See Letter 50 on this theme and Notes on Astrological Terms.
- 2 See Notes on Astrological Terms.
- 3 Cf. Plato, *Republic*, V, 473d.
- 4 See Porphyry, *Vita Plotini*, X; Ficino's translation of Porphyry's *Life of Plotinus* is in *Opera*, pp. 1538-47.

## 74

- 1 Virgil, *Aeneid*, VI, 129-30.
- 2 *ibid.*, 730.
- 3 Saturn was in the ascendant at Pico's birth.

## 75

- 1 *Callidus*, 'ingenious'.
- 2 Cf. Virgil, *Aeneid*, II, 337.
- 3 See note 5.
- 4 Psalm 119, v. 144.
- 5 Letters 23, 25, 44, and 47 show Ficino's concern that the scholarly Barbo should help to gain approval for Ficino's writings in papal circles: he had already sent Barbo the first edition of his Plato translations and commentaries, and would soon be sending his *De Vita* and his Plotinus translation and commentary. Calderini, was the intermediary in these matters and was in Barbo's service at the time. In L28 and printed editions, this is the last letter of the book. It is followed by a colophon:  
Finis octavi epistolarum libri  
Die xviiiij octobris MCCCCLXXX  
(The end of the eighth book of Letters, 19th October, 1480, Florence.)  
For the scribal error in the date, see Notes on Collation.

## 76

- 1 Codex R10 in the Riccardiana library, Florence (Ricc. 797) contains the only manuscript of this letter. It was not included in Ficino's *Epistolae* published in Venice in 1495. In R10 it is placed at the end of the 7th book of letters; however in his commentary on the *Timaeus*, Ficino refers the reader to the 8th book of Letters for this letter (*Opera*, p. 1458). Kristeller gives the Latin text in *Sup. Fic.*, I, pp. 51-6.
- 2 The significance of this letter as a musical document is probably yet to be recognised. It is remarkable for several reasons:  
The scale presented is normally now referred to as the 'Just' or 'Natural' scale. While the principal proportions are those given by Plato in the *Timaeus* (31-7), the remainder are developed in an original way. This scale is presented not just as a possibility but categorically as the foundation of music, and is quite unlike the work of contemporary theorists such as Bartolome Ramos de Pareia or Gaffurius. Ramos' *Musica practica*, published in 1482, outlines the same scale as Ficino's, but as a proposed scale rather than an absolute one. There is no evidence of a connection between the two men.  
The description of the qualities of the individual notes of Ficino's scale (falling away, rising etc) is also apparently original.  
The philosophical background to this letter is developed at greater length in Ficino's Commentary on Plato's *Timaeus*, chapters XXVIII-XXXVI (*Opera*, pp. 1451-61).
- 3 For music as harmony of mind, see *Letters*, I, 92, and for the natural and acquired parts of the soul, *Letters*, I, 115, p. 172.
- 4 Plato, *Republic* III, 401 ff. See also *Letters*, I, 92.
- 5 Plato, *Symposium*, 187.
- 6 Hermes, *C.H.*, XIII, 17-19; *Asclepius*, I, 9.
- 7 For Pythagorean use of music, see Iamblichus, *On the Pythagorean Life*, 25 (110-14).
- 8 Ficino uses three systems of reference: naming the ratios in order of their departure from unity; as mathematical ratios; and in their sequential order up the rising scale to the octave. To this is added here the more familiar sol-fa notation:

Principal ratio: octave	2:1	<i>doh</i> to <i>doh</i> above	<i>Diapason</i> , Calliope
Second ratio: fifth	1½:1 (3:2)	<i>doh</i> to <i>sol</i>	<i>Diapente</i> , Nectar of Venus
Third ratio: third	1¼:1 (5:4)	<i>doh</i> to <i>mi</i>	<i>Sesquiquarta</i> , Cupid and Adonis
Fourth ratio: fourth	1⅓:1 (4:3)	<i>doh</i> to <i>fa</i>	<i>Sesquitertia</i> , Mars and Venus

- 9 Ficino in his commentary on Plato's *Ion* calls Calliope the harmony of the eight heavenly spheres sounding together (*Opera*, p. 1283). See also *Letters*, I, 7. Calliope presides over eloquence and epic poetry. She is said to be the mother of Orpheus by Apollo.
- 10 Horace, *Odes* I, 13. The phrase has been associated with the quintessence, the fifth element (sometimes taken to be aether).

- 11 Cupid's quiver accidentally wounded his mother Venus while he was kissing her and caused her to fall in love with the beautiful youth Adonis.
- 12 i.e. the notes of the chord of the tonic.
- 13 i.e. beyond one octave.
- 14 Ficino gives the classical term 'tone' to the ratio 9:8. 'Semitone' did not always imply an exact half tone, but rather a diminished tone.
- 15 E. Abel, *Orphica*, Leipzig, 1885, Hymn XXXIV to Apollo.
- 16 For further discussion, see Ficino's commentary on Plato's *Timaeus*, ch. 31 (*Opera*, pp. 1455-6).
- 17 For the harmony of the heavenly spheres, see Letters, 6, 17 and I, 7. See also Aristotle, *Posterior Analytics*, II, 2, 90a but cf. *On the Heavens*, II, 9, 290b.
- 18 For more on this, see Ficino, Commentary on *Timaeus*, ch. 31. (*Opera*, pp. 1455-6).
- 19 Ficino's suggestions about tension are based on an understanding that is not supported by modern physics. However, his remarks are entirely valid in terms of frequency.
- 20 i.e. doubling the tension of the first. This refers to the 2:1 or octave ratio (*diapason*).
- 21 See note 2 above.
- 22 Cf. Commentary on *Timaeus*, ch. 29 (*Opera*, p. 1453.).
- 23 For spirit see Letters, I, 5 and 92 and *De vita*, I, 2.
- 24 *De Voluptate* (*Opera*, pp. 986-1012).
- 25 See Ficino's Commentary on *Timaeus*, ch. 29, for his comments on the greater power of hearing over sight in affecting the mind and soul. Elsewhere in his work, however, sight has primacy over hearing, e.g. Letters, I, 7.
- 26 Iamblichus, *On the Pythagorean Life*, 15, (65) ed. G. Clark, p. 27.
- 27 Ficino numbers rather than names the celestial signs or constellations which he relates to the notes of the octave. This table shows the astrological relationships. See Notes on Astrological Terms and Diagram 3.

HOUSE	NOTE	CONSTELLATION	ASPECT	EFFECT
1	Doh	Aries	Conjunct	unfavourable
2	Re	Taurus	Bisextile (30°)	moderately favourable
3	Mi	Gemini	Sextile (60°)	favourable
4	Fa	Cancer	Square (90°)	unfavourable
5	Sol	Leo	Trine (120°)	favourable
6	La	Virgo	Quincunx (150°)	moderately favourable
7	Si	Libra	Opposition (180°)	unfavourable
8	Doh	Scorpio	Quincunx (150°)	moderately favourable
9	Sol	Sagittarius	Trine (120°)	favourable
10	Fa	Capricorn	Square (90°)	unfavourable
11	Mi	Aquarius	Sextile (60°)	favourable
12	Re	Pisces	Bisextile (30°)	moderately favourable

## Notes to Appendix

## A

- 1 Pico, *Epistolae* and P. O. Kristeller, *Sup. Fic.*, II, pp. 270-71. This letter seems to date from 1484.
- 2 *Corpus Hermeticum*, I, 12 'Nous, the Father of all, who is life and light, brought forth Man, the same as himself, whom he loved as his own child, for Man was very beautiful, bearing the image of his Father.' Cf. Psalm 8:5. In Platonic writings Jupiter sometimes represents pure justice reflected in the activity of life, in contrast to Saturn who represents the life of pure contemplation. See Erwin Panofsky, *Studies in Iconology*, New York, 1972, Ch. 6, esp. p. 210. Ficino (*Letters*, I, 7) represents Jupiter (Jove) as the spirit and mind of the whole universe.
- 3 *Praemonitor*, an unusual word, used elsewhere in classical Latin only by Apuleius, for the activity of Socrates' daemon, in warning him against doubtful actions. *De Deo Socratis*, 16.
- 4 This is the subtitle of Ficino's *Platonic Theology*.
- 5 i.e. reincarnation. See, for example, Iamblichus, *On the Pythagorean Life*, XIV.
- 6 Cicero, *On Friendship*, XVII, 61. Chilon of Sparta was one of the Seven Sages of Ancient Greece. He is said to have died of joy while embracing his son who had just been victorious in the Olympic Games. He was also considered to be the originator of the maxim 'Know Thyself'. Theopompus (4th century BC) Greek historian and rhetorician, became a friend of both Philip and Alexander of Macedon. His pro-Macedonian sympathies often caused trouble with his fellow Greeks. Kristeller's edition of the text has Theophrastus for Theopompus, Aristotle's successor as head of the Lyceum. But the relevance of his name here is less obvious.

## B

- 1 Pico, *Epistolae* and P. O. Kristeller, *Sup. Fic.* II, pp. 272-3. Kristeller notes that there are several lacunae in the manuscript.
- 2 Ezre according to Kristeller, *Sup. Fic.*, and Farmer, *Syncretism and the West*, p. 486. Ezre in Basle *Opera*, Ezra in Gentile, 'Pico e Ficino', 1994, p. 137. Melchiar in Basle and Kristeller, Melchior in Gentile. The biblical Ezra the Priest led the return of the exiles from Babylon to Jerusalem in the reign of Artaxexes (458 BC). See II Esdras 14 for his significance in the transmission of secret teachings. Zoroaster was considered by Ficino (following Pletho) to be the founder of the Chaldaean tradition of the Magi; Melchior was one of the three Magi who came from the East to visit the infant Christ. This Chaldaean text is discussed by Farmer, *Syncretism*, pp. 486-7.
- 3 For discussion of these texts, which have not been fully identified, besides Farmer see Chaim Wirszubski, *Pico della Mirandola's Encounter with Jewish Mysticism*, Cambridge, Mass., 1989, and Franco Bacchelli, *Giovanni Pico e Pier Leone da Spoleto*, Florence, 2001, p. 59.