

MUSICA RHYTHMICA AND MUSICA METRICA  
IN ANTIQUE AND MEDIEVAL THEORY

by

Richard L. Crocker  
Yale University

The concepts of "rhythm" and "meter" attract more and more attention from those who think about music in our own time. In an effort to elucidate the meanings of these terms, various writers have investigated their use by theorists in the past, particularly of classical Antiquity and of the Middle Ages.<sup>1</sup> These investigations have sometimes been coupled, unfortunately, with a disdain of the necessity for determining the various meanings of such terms under different historical circumstances. Terms do have a way of changing their meaning, and there is a danger in assuming that one knows beforehand what a theorist fifteen centuries ago is talking about.

A study of the terms *rhythmica* and *metrica* in the older sources not only reveals meanings somewhat different from those which we attach to these terms, but also leads us to an understanding of the nature of medieval music theory itself, which can provide stimulation for our own thinking about theory. The following discussion is concerned primarily with the position of these terms in music theory of the early Middle Ages, and with their background in Antiquity.

It has been remarked that the medieval theorist stands at the juncture of two quite different traditions. On the one hand he inherits from classical Antiquity a set of terms, methods, and ideas which were originally created in connection with the music of Greek classical culture. On the other, he must deal with a legacy of song, the sacred chant of the Church, which seems to have its roots in quite a different culture. Furthermore, the methods and ideas of Greek culture are inherited in the absence of the art-works themselves; the medieval writer knows Greek music only as theory. Contrariwise, the sacred chant presents itself as a practical phenomenon. If there was a corpus of theoretical doctrines indigenous to the chant, it has left but few traces for us to follow. The history of early medieval theory may be seen as the working-out of a relationship between these two elements, a rationalization of the sounding art work — the sacred chant — according to the intellectual methods of Greek theory. For the medieval theorist is immediately concerned with the art-work, which he must sing and teach others to sing from day to day throughout the cycle of the liturgical year.

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1. See especially Curt Sachs, Rhythm and Tempo (1953) p. 11 ff.; p. 138 ff.

Since the medieval theorist does not create his terms and methods, but adapts them from a pre-existent body of doctrine, it is important to understand these terms and methods in their original context. This is not to say a priori that a term must mean the same in the third century and in the tenth, or that it must be used in the same way; but merely that we should seek our first understanding of the term at the same source whence the medieval theorist came to know it.

We begin with a text well-known to the Middle Ages, from the Institutiones of Cassiodorus (ca. 470-570 A.D.):<sup>2</sup>

Musical science is that discipline which discourses of numbers which are in proportional relationships as these numbers are found in sounds: e. g. duple, triple, quadruple and the like, which are said to be proportions.

There are three parts of music: harmonics, rhythmic, metrics. Harmonics is that musical science which distinguishes between high and low sounds. Rhythmic is that part of musical science which investigates the progression of the words, whether the sound hangs together well or not. Metrics is that part of musical science which recognizes and identifies by demonstrable reason the measure of the various meters, e. g. the heroic meter, the iambic, and so forth.

Earlier in the Institutiones Cassiodorus (following the traditional divisio philosophiae) has defined mathematics as that which treats of quantity, or number, and the four disciplines of mathematics as each pertaining to a different manifestation of number<sup>3</sup>; hence the definition of music in the passage just cited: "Music is that discipline which deals with proportions as they manifest themselves in sounds." It is of primary importance to recognize that here, as elsewhere in antique and medieval theory, this definition is not an answer to the question: "What are the attributes of the audible art-work?" but to the question: "What does the vocable musica refer to?" The definition does not involve us in an argument as to whether the creation of the sounding art-work is an art or a science, but simply with a methodological definition of that discipline which goes under the name of "music." The antique (and medieval) theorist uses "music" to refer to what we call "music theory."

Once we understand that music is an investigation of certain phenomena (sounds) in the light of certain basic elements (numbers) the three parts of music fall readily into place. Harmonics, musica harmonica, investigates the proportional relationships between sounds of different pitch — "high and low sounds" — and a glance at any treatise on the subject will reveal that this is universally the case, even today when the overtone series serves as a basis for theories of harmony.

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2. Cassiodorus, Institutiones, ed. R. A. B. Mynors (1937), p. 144.

3. *Ibid.*, pp. 92, 111.

The other two parts of music both deal with words, i. e. poetry, at least in Cassiodorus' definition. Since poetry is a variety of sound, and since it is susceptible to systematic investigation in terms of proportions, it is legitimate subject matter for the discipline of music. The distinction of rhythmic and metrics as stated by Cassiodorus is entirely clear and accurate, but so compact as to appear somewhat enigmatic without consideration of a much larger group of texts to which we may now turn our attention.

The distinction between rhythmic and metrics goes back at least to Aristoxenus (4th Century B.C.)<sup>4</sup> and is mentioned regularly up to the end of Antiquity. It has been the subject of numerous discussions in modern times, by philologists as well as historians of music. Perhaps the best summary of the doctrines involved is to be found in Aristeides Quintilianus (1st-2nd Century A.D.)<sup>5</sup>, whose remarks are reproduced in more condensed form in Martianus Capella (3rd-4th Century A.D.)<sup>6</sup>. The standard work devoted exclusively to rhythmic is of course the *De musica* of St. Augustine (354-430 A.D.)<sup>7</sup>, and as such this treatise stands beside that of Boethius (ca.475-525 A.D.)<sup>8</sup> devoted to harmonics. In addition, mention is made of rhythmic in many of the late Latin grammatical and metrical treatises<sup>9</sup>. Throughout this body of literature the terms involved and their meanings are used consistently.

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4. Cf. R. Schäfke, *op. cit. infra* (note 5), p. 31.

5. Aristeides Quintilianus, *Von Der Musik*, trans. by R. Schäfke (1937), pp. 209-245.

6. Martianus Capella, *De nuptiis Philologiae et Mercurii*, ed. A. Dick (1925), pp. 516-533.

7. Augustine, *De musica libri sex*, Texte de l'édition Bénédictine, Introduction, Traduction et Notes de G. Finaert et F. J. Thonnart (1947).

8. Boethius, *De institutione musica libri quinque*, ed. G. Friedlein (1867).

9. Fabius Quintilianus, *Institutionis oratoriae libri duodecim*, ed. C. Halm (1868), IX, 4, 45; pp. 178-181. This perennial masterpiece on style of expression is available in an English version by C. E. Little (1951).

The following treatises are all to be found in the collection *Grammatici Latini*, ed. H. Keil (6 vols. 1857-80).

Sergius, *Explanaciones in artem Donati* (Keil IV, p. 533).

Marius Victorinus, *Ars grammatica* (Keil VI, p. 39 ff.).

Maximus Victorinus, *Ars Palaemonis de metrica institutione* (Keil VI, p. 206 f.).

Atilius Fortunatianus, *Ars (metrica)* (Keil VI, p. 282).

Terentianus Maurus, *De metris* (Keil VI, p. 364 ff.).

Mallus Theodorus, *De metris* (Keil VI, p. 588 f.).

Audax, *Excerpta* (Keil VII, p. 331).

We have not included the discussions of the *clausula* or *cursus*, although this phenomenon employs *rhythmus* and is referred to as *numerus* in the sources; cf. M. Nicolau, *L'origine du "Cursus" Rhythmique* (1930).

As seen in the discussion of Cassiodorus, "music" in these surroundings is a discipline, a mode of investigation, and in like fashion so are the parts of music. Musica rhythmica and musica metrica are not rhythmic music and metrical music; they are not art-forms but modes of analysis; methods, not things. They represent two ways of analyzing one and the same category of art-forms, namely classical quantitative poetry, whether Greek or Latin. It is essential in this connection to recognize that music as a discipline, and thereby also its parts, concerns itself with assessing, in a rational fashion, art-works already created; it is not directly associated with the creative process of the artist. This meaning of "theory" must be differentiated from our contemporary understanding, whereby "theory" consists of systematic precepts of composition. Antiquity and the Middle Ages regarded this latter as a separate phenomenon.

If we consider by way of analogy the study of harmonics, we find that the object of study is the relationship between two tones; this relationship bears the generic name of "harmony," be it a consonant or dissonant relationship, and can best be expressed by a mathematical ratio, e. g. unison (1:1), octave(2:1). All discussions of rhythmic and metrics present the terms rhythmus and metrum as the respective objects of rhythmic and metrics. In place of the obvious translations "rhythm" and "meter," which are liable to involve ambiguity in a contemporary discussion, let us render rhythmus by "proportion" and metrum by "measure."<sup>10</sup>

Proportion, Aristeides tells us<sup>11</sup>, may be understood in a variety of ways, general and specific. A statue may be said to have rhythmus, proportion. One may also detect it in motion, as in the dance, and also in sound. It is with the last manifestation that we and the theorists are primarily concerned. In this case the proportion must involve the relationship of units of time. For convenience of presentation, poetry is always selected as the subject matter for rhythmic (and metric) analysis, and hence the syllable is taken as the unit of time.

Quantitative poetry consists of an orderly arrangement of syllables which are linguistically long or short, grouped first into feet and then into verses; e. g. (dactylic hexameter):

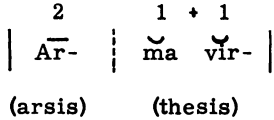
Ar-mā vī | rŭm-qŭe cā | nō Trō | iae qui | pri -mus āb | ō -rīs |

Word-accent played no essential role in this technique. Accents may fall on any part of the foot, as for example: cáno, Tróia.

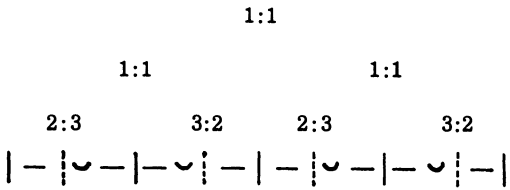
10. In modern usage, of course, the relationship of two numbers is called a "ratio"; "proportion," strictly speaking, refers to the statement of equality between two ratios. We will use "proportion" here in the sense of "ratio," however, since this corresponds to Latin usage. The Greek term  $\rho\acute{\upsilon}\theta\mu\acute{o}\varsigma$  is usually transliterated by the Latin grammarians as rhythmus, although sometimes as rhythmos, and translated into Latin as numerus.

11. Aristeides Quintilianus, Von Der Musik, p. 209.

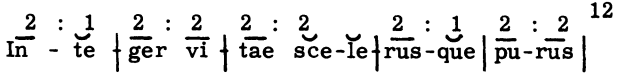
For the purposes of rhythmic, each foot is considered to have two parts, called arsis and thesis, each containing one or more syllables. The short (v) syllables are measured by one unit of time, the long (—) syllables by two:



Rhythmus, or proportion, is the relationship between the times of the two parts. Three genera of proportions are generally accepted; equal, or 1:1 (— | —); duple, or 2:1 (— | v); and hemiola, or 3:2 (— v | —). The proportions of 3:1 and 4:3 are, in the sources, a matter of controversy; they may occur under certain conditions. These proportions between times may occur either in their simple form; or combined, each with its own kind, into larger groupings, e. g. :



They may also be mixed, e. g. (Sapphic):



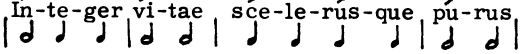
This, then, is rhythmus, and with this musica rhythmica is concerned.

A proportion does not contain within itself any limitation. It may be repeated indefinitely:



The concept of a particular length, a finite group in sound, is referred to as a metrum or measure. The length of a verse of poetry is described as being of a certain measure, specifying the kind and number of feet therein, e. g. "dactylic hexameter," in which each verse contains six dactyls (or their equivalent in terms of time and proportion).

12. Compare this temporal order, produced by the original quantitative structure, with the modern one which results from placing long tones over accented syllables; and imposing a binary system of beats:



Metrics, musica metrica, is concerned with identifying, analyzing, and classifying the various measures as used by the poets.

This is the basic distinction between rhythmus and metrum. There are, of course, many implications. A survey of the peculiarities of every discussion in the sources would be far too extensive for presentation here. We may mention only one or two important points. Proportion and measure are both found in quantitative poetry; both involve syllables and feet; and the same theorist may speak now of the proportional, now of the mensural characteristics of a particular poem. Yet there seems to be a distinction between a theorist who concentrates on measures and one who concentrates on proportions. The metricist emerges in most cases as a cataloguer of all the measures which have been sanctioned by use in the classical poets. He describes in a purely empirical fashion the standard forms, and exceptions, which occur in the literature. There is rarely an attempt to theorize, to explain rationally, either the rule or the exception. It is significant that discussions of metrics usually occur in conjunction with those on grammar. It is the grammarian whom Augustine characterizes as the conservative custodian of the literary heritage.<sup>13</sup>

On the other hand, the investigation of proportion is basically a rational matter. This easily leads the theorist who is concentrating on proportions to extend his analyses to include more than merely relationships within a single foot. If he considers the proportions existing between compound feet, he is dealing with groups of syllables whose magnitude is comparable to that of the common measures. He may in other words, not be content to classify measures in the traditional, empirical way, but may treat them as further manifestations of those same proportions he has analyzed within a foot. Thus it is possible for a theorist such as Augustine to analyze poetic structures completely in terms of a rational approach. Significantly, he arrives at some conclusions different from those of traditional metrics.<sup>14</sup> Such alternative analyses (which occur in other treatises as well) are most frequently connected with the complicated "lyric" measures of the Odes of Horace, where there is occasionally a real question as to how a specific arrangement of long and short syllables should be described.

One final qualification — the sources frequently specify that proportion is detected through the sound, the sonus, with the implication that the metricist does not use the sound of the verse as a criterion. In some cases this statement is more carefully explained, and it turns out to have a perfectly clear, but complicated and relatively minor significance. In other cases, however, it is presented in a general way, and here its meaning is not as apparent. It seems to depend upon the circumstance that the analysis of measures is chiefly a traditional affair. Furthermore, particularly at the end of the Antique era, recognition of syllabic quantity became increasingly dependent upon seeing the word on the page rather than hearing it. Both of these circum-

13. Augustine, De musica, II, I, 1 (p. 94).

14. Ibid., V, especially V, 9 (p. 310): Ar†ma vir-um†que ca-no  
Tro-iae|qui†pri†mus ab or†is.

stances point to an analysis by rule and by rote, a visual rather than an auditory approach. The perception of proportion, on the other hand, was from the beginning a study of motion in sound, rational rather than traditional, and even experimental in nature. Whereas syllables need only be recognized as long or short in order to establish the measure, they must be subjected to the *judicium auris*, the judgement of the ear, in order to determine the actual proportion of times. We may note that Augustine is constantly calling upon his pupil to listen to a line of verse and to judge the proportion accordingly.

The subsumption of rhythmic and metrics under "music" in antique (and medieval) theory is frequently a stumbling block to the modern reader, who immediately assumes that reference is being made to the text of a musical composition and to the relation between the text and its music. As we have shown, this is not a proper inference, for it rests upon a modern interpretation of the term "music." If, in a treatise, "music" does not mean "art-work" or "Rules How to Compose," but rather "theory of proportions in sound," then the inclusion of rhythmic and metrics has no such implication.

Another source of confusion lies in the opposite tendency to assume that rhythmic and metrics are included solely for the sake of an analysis of poetry, whereas they are primarily discussions of temporal proportions *per se*, using poetry only as one manifestation of these proportions.<sup>15</sup> This is more true of rhythmic than of metrics, for in practice, as we have seen, metrics was carried out in a fashion much less theoretical than was rhythmic, and was nothing but an empirical description of poetic practice, while the rational analyses of the higher, "metric" levels was carried on by an extension of rhythmic from relationships within a foot to those between combinations of feet. Thus, although both rhythmic and metrics were included as parts of music, the inclusion of metrics was purely nominal. Discussions of metrics were usually grouped with grammar rather than with music.

A medieval example of the grammatical environment of metrics may be seen in the *Ars metrica* of the Venerable Bede (ca. 673-735)<sup>16</sup>. This treatise, exclusively concerned with poetry, contains a brief discussion of rhythmic which is sometimes cited by modern scholars in investigations of medieval rhythm. The discussion involves an application of the classical doctrine of rhythmic to a kind of poetry not hitherto included by antique theorists.

Bede's treatise may be described as a selection of those elements of an antique discipline which are useful and edifying to a Christian and hence worthy of being preserved. The usual detailed description of a hundred or so different measures has been omitted, with a reference to an antique authority for the benefit of the curious. Only the dactylic hexameter is analyzed, and for another half-dozen of the most celebrated measures Bede contents himself with examples, all

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15. Cf. the discussion of Augustine in this light in W. Waite, The Rhythm of Twelfth Century Polyphony (1954), p. 29 f.

16. Bede, De arte metrica (Keil VII, p. 227).

by Christian poets. At the end of the treatise Bede mentions rhyth-  
mics in a passage which, as several historians have pointed out, is  
derived for the most part verbatim from a late classical fragment on  
metrics.<sup>17</sup> Bede's remarks are thus entirely in line with the classical  
doctrine as we have described it. The only new feature is the reference  
to a poem which embodies proportion but not measure, or at any rate,  
not a standard measure. Bede describes this as a metrical pattern  
achieved through the number of syllables. His example, in keeping  
with the rest of his treatise, is an Ambrosian hymn. Some hymns of  
this type are strictly "metrical," that is quantitative, in that the long  
and short syllables are arranged according to one of the standard  
measures, as for example:

Ĵam sūr | Ĵit hō | řa tēr | ŷti - ā |

Bede describes this as an iambic tetrameter, i. e. a measure contain-  
ing four iambic feet. Some Ambrosian hymns, however, are not strictly  
quantitative, for the long and short syllables are not arranged accord-  
ing to one of the traditional patterns, or in any pattern. Bede cites as  
an example:

Rēx ae-ter-ne do-mi-ne  
Re-rum cre-a-tōr om-ni-um

The discrepancies from the classical model are, in the case of these  
two verses, admittedly slight; indeed the long initial syllable of the  
second line is permitted as a variation within the classical form. An  
examination of the whole poem shows, however, frequent discrepancies  
which are not permissible, such as the syllables -ne and do- of the  
first verse, and these are apparently sufficient for Bede to disqualify  
the style as quantitative. There is, nonetheless, a similarity to the  
metrical model, and Bede describes this similarity as residing in the  
number of syllables in each verse, namely eight. (Here too the first  
verse is irregular, lacking a syllable, but succeeding verses are not.)

Bede is referring here to a relatively new kind of poetry, whose  
verse- and strophe-structure is based upon the technique of counting  
syllables rather than arranging long and short syllables in patterns.<sup>18</sup>

17. Ibid., p. 258 corresponds to the Ars Palaemonis (Keil VI,  
p. 206).

18. Cf. W. Meyer, "Anfang und Ursprung der lateinischen und  
griechischen rhythmischen Dichtung," Gesammelte Abhandlungen zur  
Mittelateinischen Rhythmik, II (1905). Some critics call this kind of  
poetry "accentual," asserting that patterns of accented and unaccented  
syllables replace patterns of long and short syllables. But before the  
twelfth century the poetry itself reveals an irregular treatment of ac-  
cent, as in the present example. Furthermore, word-accent is not  
specifically described by medieval commentators in this connection,  
while Bede's mention of the "number of syllables" is quite explicit.  
Either the poets were hopelessly incompetent or accent was not used  
to organize poetry until later in the Middle Ages.



This new technique, characteristic of Christian poetry rather than pagan, resulted in a variety of poetic forms. One way of applying the technique was to imitate classical measures, as in the example just discussed, where verses and strophes are constructed with an analogous number of syllables, but disregarding the length of the syllables. The appearance of this technique at the end of Antiquity is associated with the simultaneous disappearance of the differentiation of long and short syllables as a phonetic reality. The result of this technique was a poetic form which could not be analyzed by classical metrics, since the sequence of long and short syllables was uncontrolled, yet which had a familiar ring and a certain symmetry (i.e. "proportion") which was apparent to the ear but not the eye of the classically trained critic. The only tool of analysis available to this critic was rhythmic, which, since it was a rational technique operating independently of traditional measures and even of the presence of long and short syllables, could demonstrate the proportion between various numbers of syllables. It could show, for example, that verses which contained an equal number of syllables were equal, a fact self-evident to the ear (if all syllables were pronounced with the same length) but not to the mind of the classical theorist, who would attempt to detect the same pattern of long and short syllables in each verse, or to add up the times of the syllables in each verse, thus arriving at inequality.

Such a poetic form was scarcely recognized by antique theorists, but in early medieval Christian culture it became necessary to deal with it as an increasingly prominent phenomenon. Bede seems to have been one of the first to apply the classical doctrine of rhythmic to this non-metrical poetry. This application was not without later consequence in the history of poetry, as is clear from the use of the English term "numbers" (Latin numerus, Greek rhythmos) to describe poetic constructions, as in the quotation "I lisped in numbers, for the numbers came."

Turning now to the music theory treatises of the early Middle Ages, we find that the comprehensive exposition of musica regularly includes musica rhythmica and musica metrica. These forms of analysis are mentioned in the introduction to a treatise and thereby given their proper place within the framework of music theory as a whole. They are not necessarily discussed in any detail or integrated into the body of the treatise, which regularly concentrates on the third division of music, i.e. harmonics. An example of this treatment of rhythmic and metrics may be seen in the Musica disciplina of Aurelian of Réomé (9th Century A.D.).<sup>19</sup> In defining rhythmic and metrics, Aurelian draws on the texts of Cassiodorus and Bede, adding but little of his own.<sup>20</sup> He understands both of these divisions of music to pertain to the analysis of poetry.

Thus rhythmic and metrics find their way into the medieval music treatise as theoretical tools without practical application. That

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19. Scriptores ecclesiastici de musica, ed. M. Gerbert, I (1784), p. 27.

20. *Ibid.*, p. 33 f. But compare p. 35, and our note 21 below.

they are parts of music, i. e. of the mathematical analysis of sound, is unquestioned by the medieval theorist, who inherits the structure of music theory from Antiquity. But this theorist has no need to explain or illustrate them since he can consult any one of several classical authors on metrics and Augustine on rhythmic; and he apparently has little need — or opportunity — to make further application of them to new material, i. e. the sacred chant. Little, that is, in comparison to the application of harmonics, which could be, and was, used systematically and extensively to explain and rationalize the tonal phenomena of the sacred chant.

It was not long, however, before the theorists found ways to apply these tools to chant, for nothing seems to bother an ingenious and resourceful theorist quite so much as to have a tool that he cannot use. Actually, it was only a question of rhythmic, for metrics was forever a thing of the past. The existence of metrical poetry depended upon the phonetic reality of long and short syllables; when these vanished, quantitative poetry could only come about by academic imitation of classical models. But all the models had already been analyzed by classical metrics, therefore there was no creative use to which metrics could be put. But rhythmic was from the beginning concerned with temporal proportion, and only incidentally with poetry. Even in the case of poetry, as we have seen with the Venerable Bede, new application of rhythmic was made. Rhythmic, or proportional analysis, could be applied independently of words in a variety of ways to tonal phenomena. It seems to have been this variety, reflective of the fertility of proportional concepts, which produced such diversity of application as exists among the early theorists. One may suspect that in addition the temporal organization of the sacred chant did not in itself demand any one type of analysis. In any case, the discussions of rhythmic to be found before the twelfth century can only be described as sporadic, exploratory, and even enigmatic. We may mention here another passage from the Musica disciplina of Aurelian of Réomé in which, apparently for the only time in the literature, "rhythmic" is taken to imply that the rhythm of the text affects the rhythm of the melody.<sup>21</sup> This reference is so cursory that no practical information can be deduced from it, except that Aurelian seems to have had no very clear notion of what rhythmic might have to do with singing. Nor is there any reason why he should since his is perhaps the first effort to apply rhythmic to the singing of the chant.

As an example of the way in which this application took place, we will consider the passage cited most frequently in connection with discussions of the rhythm of early medieval music: Chapter XV of the Micrologus of Guido of Arezzo (11th Century A. D.). Its testimony has been summoned to support a variety of theories, and its meaning has been interpreted in manifold ways.<sup>22</sup> Before discussing this chapter,

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21. Aurelian, Musica disciplina, p. 35: "In rhythmica autem provisio manet, ut cum verbis modulatio apte concurrat: ne scilicet contra rationem verborum cantilenae vox inepte formetur."

22. Cf. the authors cited by Jos. Smits van Waesberghe, De musico-paedagogico et theoretico Guidone Aretino (1953; cited below as

we must take the liberty of presenting it in extenso, since it is not available in English translation in its entirety.<sup>23</sup>

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Guido of Arezzo  
Micrologus

Chapter XV - Concerning Proper Modulation and How It  
Is Accomplished

Therefore, just as in poetry there are letters and syllables, words (partes) and feet and verses, so in harmony there are phongi, that is sounds, of which one, two, or three are fashioned into syllables; and these, either alone or repeated, constitute a neume, that is a part of a song; and one or more parts (partes) make a phrase, that is a suitable place to breathe. Concerning which things this is to be noted, that the whole part is to be compact both in notation and expression, and the syllable even more compact.

Indeed the tenor, that is the delay (mora) on the last sound, which however small it may be in the syllable is larger in the part and longest in the phrase, stands as a sign of these divisions.<sup>24</sup> And thus it is necessary that we beat time to the song as with metrical feet, and some sounds have a length (mora) twice as long or twice as short as others, or have a tremula, that is a diverse (or "changeable" — varium<sup>25</sup>) length (tenor), which length is sometimes indicated by a horizontal stroke placed next to the letter.<sup>26</sup> And special care is to be taken [to produce] such a grouping of neumes that they, whether made of one tone in repercussion or of two or more linked together, are always related to each other either with respect to the number

<sup>23</sup>"De Guidone", p. 188 f. Also: L. Kunz, Aus der Formenwelt des Gregorianischen Chorals. 3. Metrische Gestaltung; Textformen (1949).

23. Our translation is based upon the splendid edition of the Micrologus by Smits van Waesberghe (Corpus Scriptorum de musica, 4, 1955). The same editor provided a translation of the beginning of Guido's Chapter XV in his edition of Aribio, De Musica (Corpus Scriptorum de musica, 2, 1951) p. XX.

24. Cf. Quintilianus, Institutionis oratoriae, XI, 3, 37 (p. 287); Donatus, Ars grammatica (Keil IV, p. 372); Sergius, Explanationes artis Donati (Keil IV, p. 484), etc., for descriptions of an analogous grammatical phenomenon.

25. The tremula might involve a length which is not proportionally related, or it might refer to one which can be long or short according to context, as suggested by Kunz, op. cit., p. 31; this would be analogous to the syllaba communis of the grammarians, as in Donatus, Ars grammatica (Keil IV, p. 368).

26. I. e., next to the note for the individual sound as in the analogy at the beginning of the chapter.

of sounds or to the proportion of the lengths (in ratione tenorum) so that equal [neumes] may correspond to equals, or duple or triple to units, and others by a relation of sesquialtera or sesquitertia.<sup>27</sup>

And let the musician ask himself, in beginning his song, which of these divisions to use, just as the metricalian makes verses out of certain feet, except that the musician does not bind himself by such inviolable rules, because in all respects this art continually rearranges the disposition of the sounds in a rational variety. Even if we do not often understand this rationality, nevertheless it is believed to be rational for the reason that the mind, which operates by reason, is pleased [by it]. But this and similar things are shown in oral instruction far better than in writing.

Likewise, as is customary, let the phrases of the verses be equal,<sup>28</sup> and sometimes let them be repeated, or varied with some change, however small;<sup>29</sup> and they would be most beautiful in pairs, having parts not too different; and these repetitions may sometimes be changed with respect to mode,<sup>30</sup> or phrases may be found which are similar in ascending and descending.

Likewise let the reciprocal neume return by the same way that it came, and by the same path.<sup>31</sup>

Likewise, whatever distance or direction one [neume] makes in leaping from a high pitch, let the other, answering in the other direction from a low pitch, be opposed by the same, just as happens when we see our own image facing us in the mirror.

Likewise, sometimes one syllable may have one or more neumes, sometimes one neume may be divided among several syllables. These, or indeed all neumes, will be varied, whether they begin with the same pitch or with one

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27. Cf. Quintilian, *op. cit.*, IX, 4, 68 (p. 183) where an analogous grouping of syllables within a line is suggested.

28. Here Guido applies a series of rhetorical techniques, derived from antique doctrine, to music. We will give the rhetorical term for each technique, insofar as we can identify it, as well as an appropriate reference to classical sources.

Equality of phrases is known as isokolon or exaequatum membris; Quintilian, *op. cit.*, IX, 3, 80 (p. 164).

29. Parison, or prope aequatum; *Ibid.*, IX, 3, 76 (p. 163).

30. Metabole, or transitum in aliud genus; cf. Quintilian, *op. cit.*, IX, 4, 50 (p. 179); Martianus Capella, *op. cit.*, p. 514.

31. Cf. the versus reciproci (e.g. Marius Victorinus, *op. cit.*, p. 113), a type of verse which reads from right to left as well as left to right.

different with respect to the different qualities of high and low.

Likewise let almost all phrases move towards the principal tone, that is the finalis,<sup>32</sup> or, if desired, towards a closely related one in its stead, and just as the same tone may sometimes end all neumes or most phrases, so may it sometimes begin them; which, if you be curious, you may find in Ambrosian [hymns]. Indeed, there are certain prose-like songs which pay less attention to this, in which large and small parts, and here and there phrases, are found with no care paid to their articulation, in the fashion of proses.

I speak of metrical songs, however, because often we sing in such a fashion that we seem to scan the verses with feet, just as is done when we sing those meters in which care must be taken lest they contain a superfluity of disyllabic neumes without an admixture of trisyllabic or tetrasyllabic.<sup>33</sup> For just as the lyric poets join now these now other kinds of feet, so also those who make songs put together in a rational manner separate and diverse neumes. There is a rational articulation if a moderate variety of neumes and phrases is accomplished in such a fashion that always neumes correspond to neumes and phrases to phrases with a certain similitude; that is, let there be a dissimilar similitude, in the manner of the very delightful Ambrose.<sup>34</sup>

For there is no small similarity between meters and songs, when neumes are in the place of feet and phrases in the place of verses, inasmuch as this neume proceeds in the fashion of a dactyl, that one as a spondee, and the other as an iamb, and the phrases may be analyzed some as tetrameters, others as pentameters, and still others as hexameters, and many other things in this vein.

Likewise let the parts and phrases of neumes and of words end together, lest a long tenor on certain short syllables or a short one on long syllables provide a barbarism, which, however, there is rarely need to observe.

Likewise let the effect of the song so represent its matter that in sad things the neumes are low, in happy

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32. Homoeoteleuton, or rime; classical rhetoric also knew initial rime; cf. Quintilian, op. cit., IX, 3, 78 (p. 163).

33. A similar formulation, pertaining to irregular meters, in Marius Victorinus, op. cit., p. 97.

34. Cf. Quintilian's discussion of the simultaneous requirements of aequalitas and varietas, op. cit., XI, 3, 43 (p. 288).

things tranquil, in good fortune rejoicing and the rest.<sup>35</sup>

Likewise often we place a grave or acute accent over sounds, because often we bring [it] out with a greater or lesser impulse, in such a fashion that often the repetition of a sound seems to be a raising or lowering of the pitch.

Likewise that, in the manner of a galloping horse, always at the end of a phrase the sounds become farther apart as they approach the breathing place, as if, being exhausted, they arrive at the resting-place slowly. By being written densely or widely spaced, as the case may be, the notes can give an indication of this.

Sounds are made liquescent in many cases in the fashion of letters, so that [the voice] beginning in one kind [of sound] moves limpidly over into the other and does not seem to stop. Furthermore we place a dot under the liquescent sound, like a spot, in this fashion:

[Guido's own illustration of this notation is apparently unavailable.]

If you wish to pronounce this more fully, not making the liquescence, it will do no harm, but is often more pleasing.

And concerning all which we have said, let it be done not too infrequently nor too incessantly, but with discretion.

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Before discussing the contents of this chapter in detail, it is important to recall its position in the Micrologus. This "short discourse" on music is devoted primarily to harmonics, that is, to analyses of phenomena concerning pitch. At the end of these analyses, as adjuncts, appear several chapters devoted to other aspects of music. These include 1) a discussion of the effects of music, 2) the chapter on modulation translated above, 3) an analysis of melodic progression (the motus-theory), 4) an exposition of the technique known to the sixteenth century as the soggetto cavato della vocali; 5) precepts on the performance of diaphony, and finally, 6) an account of the origin of music. The first and last chapters of this group, namely those on the effects and origin of music, represent material traditionally contained in antique treatises.<sup>36</sup> By their position in the Micrologus Guido seems to

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35. Cf. Quintilian, op. cit., I, 10, 22 (p. 59): "Namque et voce et modulatione grandia elate, iucunda dulciter, moderata leniter canit, totaque arte consentit cum eorum, quae dicuntur, adfectibus." Also XI, 3, 61 (p. 292).

36. Cf. Smits van Waesberghe, De Guidone, p. 147 f., where the plan of the book is interpreted in a different fashion. Pp. 185-198 of De Guidone contain the most recent, as well as the most comprehensive and authoritative discussion of this chapter. With respect to its interpretation, however, we beg leave to differ, both in principle and in detail, from the acknowledged expert on Guido.

indicate that everything in between is likewise a continuation of classical models, if only in method; that these two chapters constitute a frame, so to speak, for the kind of material normally found at the end of a theoretical exposition. And what kind would this be? The comprehensive classical treatise included divisions of music known as melopoeia and rhythmopoeia, which were concerned with the practical application of the principles expounded in the divisions of harmonics and rhythemics.<sup>37</sup> Practical application in this case included both composition and performance. (This aspect of antique music theory was continued in the sixteenth century under the title musica poetica.) Melopoeia and rhythmopoeia naturally followed the strictly theoretical exposition in the structure of the treatise, since they were dependent upon it. And since artistic creation was an ultimately mysterious process, for the antique and medieval theorist as much as for us, such discussions of "making" music could never attain the stature of systematic theory. They remained collections of precepts, some general, some specific, none axiomatic. Their purpose was to guide the composer (and performer) toward arranging his inspiration into artistic order. In Guido's fifteenth chapter melopoeia and rhythmopoeia appear side by side, which is quite natural since the real subject under discussion is not harmony or rhythm as such, but rather the orderly arrangements achieved by harmony or rhythm, that is by pitch or duration.

Thus the very nature of the chapter is responsible for the somewhat confusing organization; it is difficult to find a truly logical order for a collection of practical precepts. Three other factors militate against easy comprehension: first, the fact that this is a "short discourse," executed in a highly compressed style; second, that it is a compendium of precepts, culled from a number of sources, juxtaposed rather than integrated;<sup>38</sup> and third, that Guido seems to be imitating the convoluted elegance of the Latin authors of the Empire. In any case this is hardly the style of an original, creative spirit, as Guido has sometimes been characterized.

A general plan may, however, be perceived in this chapter. After the introductory paragraph, which gives the key to the prevailing method, comes a series of precepts devoted to the temporal relationships of various sized units, proceeding from small to large; then another series concerning harmonic relationships. This merges directly into a more general statement of the types of organization found in the chant, following which the author returns to another series of detailed precepts, this time more appropriate to the performer than to the composer.

We cannot deal here with all aspects of the chapter but only with its method and with the application of rhythemics. The first paragraph contains the well-known analogy between poetry and music. The source of the analogy need not concern us — it is not original with Guido<sup>39</sup> —

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37. Cf. Aristeides Quintilianus, *op. cit.*, pp. 205, 227.

38. As Smits van Waesberghe, De Guidone, p. 197 points out.

39. W. Waite, in a review of Smits van Waesberghe's edition of the Micrologus (Journal of the American Musicological Society IX, 2,

but its function, here and elsewhere, is of interest. In the first place, it operates within the liberal arts curriculum in such a fashion as to relate the composition of music to subjects already mastered by the student, namely grammar and rhetoric.<sup>40</sup> In the second place, it opens the way to a ready-made system of terms and methods of analysis which may be applied to musical composition.

A brief survey of the chapter reveals one discussion of proportions, several references to metrics or meters in poetry, and a fairly consistent application of precepts analogous to those of rhetoric, or the analysis of oratorical prose.<sup>41</sup> Now we know that rhythemics, "numerosity," was held in high esteem by these theorists; it represents the learned way of doing things.<sup>42</sup> Therefore we can presume a theorist to make as much application of the doctrines of rhythemics as he reasonably can. But Guido (and the others) make only a limited application. He relies more on metrics and even more on rhetoric to provide terms and methods for analyzing music. An analogy between poetry and music would not be necessary if only rhythemics were to be applied, since rhythemics, *musica rhythmica*, was the division most akin to harmonics in its underlying mathematical method. But such an analogy would be highly appropriate to introduce the methods of metrics or rhetoric, since these disciplines are much more closely tied to their subject matter, namely words. Guido can invoke metrics, quite properly, as a basis for the discussion of longer phrases; he does not include in metrical concepts the requirement of a regular succession of equivalent feet, as we shall see. Even so, the application of metrics, like that of rhythemics, remains limited. Rhetoric seems to have the greatest affinity with the kind of analysis Guido is pursuing. The rhetorical precepts involved deal with similarities and differences between adjacent phrases in prose; they are not concerned with precise arrangements at the syllabic level, as would be the case in poetry. Phrases in prose may be considered symmetrical if almost equal, and it is exactly in these terms that Guido describes the balance of musical phrases; he also remarks that the precepts of metrics are not as strictly observed by the musician. Since Guido is talking about the sacred chant, the inevitable conclusion seems to be that the musical subject matter itself is much more susceptible of a rhetorical analysis than a metrical one, and even less one involving proportion.

To discover how the application of rhythemics is made, we may

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1956, p. 146 ff.) called attention to the textual derivation of a similar passage in the Musica enchiriadis from the commentary of Chalcidius on the Timaeus of Plato.

40. The study of grammar and rhetoric, being parts of the trivium, would precede music, undertaken only within the quadrivium.

41. We have made a beginning in showing the contact with rhetoric by the footnotes to the translation given above. Since the doctrines involved are the common property of the entire Graeco-Latin pedagogical system, our references should be understood as exemplary rather than restrictive.

42. Cf. the Scholia to the Musica enchiriadis, Scriptores ecclesiastici de musica I, p. 183.



examine more closely the second paragraph, which deals with the tenor, or mora. Guido, like the Scholia to the Musica enchiriadis, insists upon a proportional rendering of this longer value which marks the end of a phrase; the longer value must not be simply longer, but must stand in some multiple proportion to the shorter. This is the simplest application of rhythmic. It involves exact proportion and therefore depends on exact measurement of time; hence the reference to beating time: "cantilena plaudatur." The plausus, or beating of the time, was executed in classical rhythmic by a raising of the hand (elevatio, arsis) during the first half of the foot, and a lowering (positio, thesis) during the second.<sup>43</sup> The ratio of the two temporal intervals thus delimited would be the proportion, or rhythmus of that foot.

The sole purpose of the plausus, as far as Guido is concerned, is to ensure the use of equal units of time, and hence a longer value which is exactly twice as long as the shorter. Although the use of the plausus has suggested to many that some kind of poetic rhythm is involved, the plausus does not necessarily imply any specific pattern of feet, or any repetitive grouping of the smallest temporal unit, either in Guido's understanding or in its use in Antiquity. It does not, in other words, represent a "beat" or "pulse" of the type which forcibly projects itself into the future at equidistant intervals, but rather simply marks off time intervals as they go by. The intervals themselves may be equal or unequal; if the latter, then they must be proportional, or at any rate the discipline of rhythmic so demands.

That Guido understands the plausus in this fashion seems apparent from the following considerations. In the paragraph under discussion the plausus is mentioned in connection with the mora at the end of each phrase. Now this particular kind of mora which is the sign of the distinctio seems to be a phenomenon of rhetoric and affects prose, not poetry.<sup>44</sup> This use of a longer time value to mark the end of phrases has nothing to do with arrangements of long and short syllables in poetry. The tenor, then, is to be applied to chant in situations analogous to those occurring in prose, namely at the ends of phrases. Prose, in this case, involves a lack of control of syllabic order, so that no regularity or repetition is present at the level of the smallest temporal unit, as there would be in poetry. Thus the plausus, in these circumstances, could have the function only of rendering the tenor in proportion to the prevailing equal unit of time.

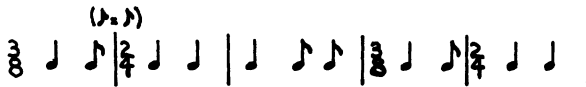
Furthermore, when Guido does refer to rhythmic orders of chant analogous to meters or fixed patterns in poetry (ninth paragraph), he specifically mentions those types of classical meters characterized by a free mixture of feet with proportions of 1:1 and 2:1 — the so-called "lyric" measures. It is precisely these meters, of all classical types, which do not suggest the equidistant repetition of a "beat" or "Takt."

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43. Augustine, De musica, II, X, 18 (p. 132).

44. See the sources for this precept indicated above. Quintilian seems to be referring to a silence or rest, whereas Guido is clearly talking about a prolongation of a sound. But compare Aribo, who again understands it as a silence; op. cit. supra (note 23), p. XXIII, 66.

For example, the first verse of the Sapphic strophe (as above, page 6) would be rendered in modern notation thus:



Hence even in the "metrical songs" Guido does not imply any kind of temporal organization except an equal unit of time. Actually, the occasion for Guido's distinction between "prose-like" and "metrical" songs was not rhythmic but melodic order. Only after referring to the stricter (but still irregular) melodic structures implied by the lyric meters does the author turn to a more general discussion, using the "dissimilar similitude" of the lyric meters as a pivot. It is this passage which summarizes the manifold similarity between poetry and music, after the separate discussions of rhythmic and harmonic structure have been completed.

Thus the plausus has the function only of producing an equality of temporal units. It is this equality which is the foundation of all analysis proper to rhythmic as opposed to metrics.<sup>45</sup> For as far as the metricist is concerned it makes little difference whether the long and short syllables of a poem stand in the relation of 2:1 or 7:4 or x:y, as long as "x" is greater than "y". There are, in fact, references in the classical treatises to these irregular lengths which occur in practice.<sup>46</sup> Significantly, these references tend to appear in the context of rhythmic; for it is the rhythmicist who perceives the irregularity, since he, rather than the metricist, is keeping track of the regularity, the equality against which the lack of proportion is perceptible.<sup>47</sup>

Once equality has been established, then proportions between various quantities can be perceived. Guido formulates the conditions under which proportion may occur in very general terms: either between two sounds of different lengths, or between groups containing differing numbers of sounds; the possible proportions include 1:1, 2:1, 3:1, 3:2, 4:3. We may provide our own hypothetical examples for

45. It is perhaps necessary to point out that Guido refers to "metrics" in opposition to "prose," not to "rhythmics."

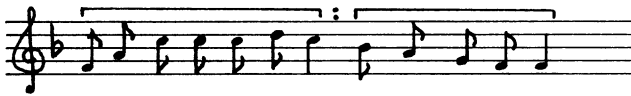
46. Marius Victorinus, op. cit., p. 39, refers to short values shorter than normal, and long ones longer than usual, and describes these as the province of the musici, that is the rhythmici.

47. The Commemoratio brevis de tonis et psalmis modulandis (Scriptores ecclesiastici de musica I, pp. 226-228) identifies aequitas with rhythmus; that is, the author sees that without equal time units there can be no other kind of proportion. His point of departure in the surrounding discussion seems to be Quintilian XI, 3, 43: "Nam prima est observatio recte pronuntiandi aequalitas."

Guido's remarks:<sup>48</sup>

	"with respect to the number of sounds"	"with respect to the proportion of the lengths" <sup>49</sup>
1:1	■ : ■	■ : ■ (musical notation: two notes of equal length)
2:1	■ : ■	■ : ■ (musical notation: two notes, the first is twice as long as the second)
3:1	■ : ■	■ : ■ (musical notation: two notes, the first is three times as long as the second)
3:2	■ : ■	■ : ■ (musical notation: two notes, the first is 1.5 times as long as the second)
4:3	■ : ■	■ : ■ (musical notation: two notes, the first is 1.33 times as long as the second)

All proportions can, of course, be applied at any level; for example, to show the proportion between two parts of a verse:



4:3 A-do-ro te de-vo-te, la-tens De-i-tas

It should be pointed out that our examples are not meant to be representative of any system of transcription, nor are they the only ones which could be picked. They simply embody circumstances which permit application of the mode of analysis described by Guido.

This mode of analysis is, in fact, so general that it can be applied to almost all modern interpretations of Gregorian chant, without providing decisive evidence for any one of them. Furthermore it is applicable to virtually all Western non-monophonic music, simply because it rests upon conditions of temporal organization which were fundamental from Leonin on. In order to see more clearly what the proportional concept of rhythm means, we must ask what Guido (and the other early theorists) were trying to avoid. Clearly, at some times and in some places, the singers performed chant in a way that was unequal and hence non-proportional. Whether this was by use or abuse is

48. Cf. C. Vivell, *Commentarius anonymus in Micrologus Guidonis Aretini* (1917), p. 65, where other examples from the *Commentary* are given. Vivell, too, refers the contents of this chapter to antique sources, but, in our opinion, not the appropriate ones.

49. The examples at the right may be understood to occur at the ends of phrases, hence be apt for the *tenor*, applied here as a doubling of the final tone, and indicated by the "horizontal stroke."

not within the province of this paper to investigate, but we may be permitted a brief summary of the possibilities. The inequality may have been carelessness, a departure from the standard of equality through simple negligence. On the other hand, it might have been the kind of deliberate distortion which creeps into the performance of a familiar repertoire; a metronomic analysis of most performances of a Beethoven sonata would, for example, reveal such irrational, non-proportional time intervals. Or, finally, it may have been the remnant of a rhythmic tradition which recognized irrational lengths as a normal rather than a distorted element. Such a phenomenon has been reported, among other places, in music from Greece.<sup>50</sup>



According to the report, the tempo is sufficiently fast so that the two values (♩. and ♪) are understood not as multiples of a common denominator (♩), but as two different rhythmic elements, one long and one short.

Most, if not all, of the theoretical documentation brought to bear upon discussions of the rhythm of Gregorian chant shows contact with the body of classical doctrines which we have discussed. Furthermore, most, if not all, modern interpretations of the rhythm of the chant summon the witness of the early medieval theorists at least to establish the use of an equal unit of time or of a longer value twice the shorter. If these two cases seem trivial to us, it is only because they are so fundamental to our notion of musical time; apparently they were not trivial for the medieval theorist.

Establishing the genealogy of a mode of thought does not, obviously, invalidate its application; but in dealing with the evidence of the early medieval theorists the following observations would seem to be pertinent. First, the appearance of metrics and rhythmic in theoretical discussions is due to the relevance of their method, not their subject matter; they belong to the discipline of music theory because they are analyses of temporal events in terms of numbers. Second, the mode of their application to the chant is such a general one, being concerned with proportion *per se*, that it scarcely allows specification of any one arrangement of temporal values. Third, in applying these doctrines to chant, the medieval theorist is relating the theory of one culture to the music of another; the relation may be largely of his own making, not intrinsic to the materials. The very tentative and cursory nature of these applications by theorists who are otherwise passionately comprehensive would seem to be in keeping with the tenuous connection between the doctrines and the art-works themselves.

The treatises of the later Middle Ages present quite a different

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50. Thr. Georgiades, Der Griechische Rhythmus (1949), p. 99 ff. The chapter discusses irrational values in general.

picture. A new kind of music — polyphony — became established, and one of the most striking features of the new style at Notre Dame of Paris in the twelfth century was the systematic use of exact and strictly proportional mensuration of tones. Now the theorists were provided with subject matter, art-works, eminently suited to the application of the proportional analyses of *musica rhythmica*. The diligence with which these analyses are applied after the twelfth century seems to imply, once again, that the cursory application before that time reflects a lack of suitable material.

Without attempting to write the history of the theory of rhythm from the Middle Ages to the present, we may sketch briefly the circumstances of modern usage of the terms involved. From the time of Leonin until the end of polyphonic supremacy around 1600 A.D., theoretical discussion of the temporal aspect of music was concerned with proportional mensuration and was couched in terms derived ultimately from *musica rhythmica*. The terms standard from the eighteenth century on, namely "Takt," and "measure," are directly derived from those of the polyphonic period: "mensura," and "tactus." "Rhythm" was used in the latter part of the eighteenth century to describe the relationship of phrases, or period-structure.<sup>51</sup> This is what Antiquity included in *rhythmopoeia*, and indeed one of the most famous theorists of the nineteenth century, Gottfried Weber, mentions this very term.<sup>52</sup> But "rhythm" was used in another and more significant way from time to time: some writers designated thereby the subjective, intangible experiences produced by the temporal relationships of music, as opposed to the objective, mechanical qualities of the varieties of "Takt" or "measure," the temporal framework of music.<sup>53</sup> The word "meter" was introduced to describe this latter phenomenon only incidentally in the eighteenth century, and does not seem to have become regular until our own time.<sup>54</sup>

As a general rule, such changes in terminology reflect real changes in musical style and in ways of thinking about music. This is not the place to describe the stylistic circumstances which evoked a differentiation of "rhythm" from "meter," but it may be mentioned in passing that such a differentiation would have little or no function within Baroque style, and is, on the other hand, very significant in terms of the aesthetics and repertoire of the late eighteenth century.

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51. Cf. the informative study by L. Ratner, "Eighteenth-century Theories of Musical Period Structure," Musical Quarterly XLII, 4 (1956).

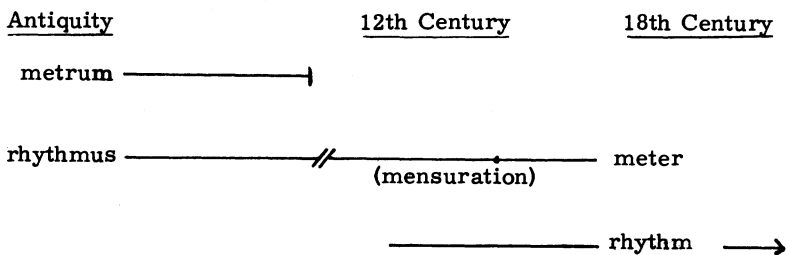
52. Weber's General Music Teacher (trans. J.F. Warner from the third German edition, 1841) p. 69. This is a handy version of the first part of the interesting and important Theorie der Tonsetzkunst (first edition 1817).

53. Cf. the articles "Rhythmus" and "Takt" in the Allgemeine Theorie der Schönen Künste, ed. J.G. Sulzer (1777).

54. Grove's Dictionary (Fifth Edition, 1954 article "Time") still uses "metre" primarily in a poetic sense, while the Harvard Dictionary (1944, article "Meter") equates "meter" with measure, i. e. variety of time-signature.

More germane to our topic is the observation that this opposition of meter and rhythm is analogous to that of musica metrica and musica rhythmica at the end of the Antique era. In each case the first term involves an empirical description of a set of frameworks, mechanical patterns, while the second opens the way to an analysis of the inner workings of temporal phenomena in terms mathematical or emotional, depending upon the philosophical climate. Or, to state the same in such a way as to remove the apparent dichotomy, "meter" describes the completely familiar and predictable, "rhythm" the less predictable elements in the temporal order of a musical composition.

This parallelism between musica metrica-rhythmica and meter-rhythm must be supplemented, however, with the observation that in the course of two thousand years the phenomenon referred to as rhythmus has crystallized into the mechanical patterns we call "meter." We may conclude with a diagram showing the progressive shift which has accompanied the re-introduction of the terms "rhythm" and "meter."



Rhythmus, or proportion, begins as a vital aspect of quantitative poetry. It manifests itself in purely musical form in the mensuration of medieval polyphony. Finally, the patterns of polyphonic mensuration become the meters, the abstract coordinates, which, when enlivened by dynamic accents, serve as background to the increasingly complex and individualistic rhythms of the nineteenth century.