Signs of the Times

A guide to the mensural and proportional signatures of the 15th and 16th centuries

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Mensural and proportional signatures of the Renaissance period can be a source of bewilderment for many musicians today. This is not too surprising since musicians and theorists in the past were often in disagreement over how to interpret these signs as well. A survey of the different resources easily available today shows that today's situation is not much better. For musicians today wishing to understand this complex subject generally what materials they will find present a far too simplistic summary of a few signs with an insufficient explanation of the mechanics and the history behind them.

Busse Berger's *Mensuration and Proportion: Origins and Evolution* is not such a book however. It is a wonderful resource that covers basic metrical concepts, surveys dozens treatises, corrects some 20th century misunderstandings, and outlines different traditions that existed in different locations and times. It is this book that serves as the basis for the following guide. All information (with the exception of some bits that are common knowledge) contained here comes from Berger's text. Being the only resource cited here, parenthetical citations will contain only the page number(s) of Berger's text from which the information is derived.

All of the diagrams in the following however are of my own design. They show the mensuration of the signs, the placement the tactus (the beat), and the effect of the proportions. Notes are presented in a hierarchy that shows from top to bottom the largest to the smallest notes.¹ The tactus is represented by bars of various lengths to show different tactus speeds. When a tactus bar is placed under a note that means the note in question is played so that its length corresponds to the length of the tactus. In the diagrams below there are several different bar lengths shown for the tactus: (1) the default length represented by a bar roughly an inch in length, (2) a length exactly half as long as the first representing a tactus beat exactly twice as fast in comparison to the default tactus, and (3) other lengths shown to accomplish various proportions.

¹ Deviating from traditional practice, I opted to have all the notes be left aligned rather than center aligned to show more exactly where notes begin and end.

While the following guide does contain a great amount of information it only covers the most common signs and their most common interpretations. There were many other less popular signs and differing opinions. Berger's book covers them all so for a more thorough understanding I recommend that you consult her book. For questions and comments (whether they be praiseworthy or critical) you can contact me at <u>sheridanhaskell@icloud.com</u> or on Facebook. Lastly, be sure to check my website (<u>sheridanhaskell.wordpress.com</u>) for updated versions of this document.

Notes

Mensural notation in the time period in question makes use of notes that look very similar to our own. The main differences are that note heads are diamond or square shaped and that the equivalent to our whole note (the semibreve) is not the usual largest note (the usage of the semibreve during the Renaissance period makes it analogous to our quarter note). Even though these notes look like our own notes it is important that you not think of a semibreve as a whole note, a minim as a half, a semiminim as a quarter note and so on because such usage presupposes the purely modern assumption of smaller notes being even fractions of the whole note. As you will soon see, in many mensurations a "half note" is not a half of a semibreve but is actually a third of the semibreve making it incorrect to refer to it as a "half note." Likewise, in mensurations where the minim is one third of the semibreve then the semiminim would be one sixth of the semibreve making it incorrect to refer to it as a "quarter note." "Whole note," "half note," "quarter note," "eighth note," and so on are all inadequate terms to use in this repertoire and it is better that you instead go ahead and get use to using the following terms for these notes:



It is not necessary to consider notes shorter than the minim to understand mensural and proportional signs so those notes will not be seen again in the following.

Mensuration Signs

Mensuration signs function to communicate the way certain notes are divided into smaller notes. They also imply different placements of the tactus (the beat). There are chiefly three main groups of mensuration signs: (1) tempus signs which concern the division of the breve into semibreves, (2) mode signs which concern the division of the maxim and the long, and (3) signs of prolation which concern the division of the semibreve into minims.

Tempus and Prolation Signs

Signs for the division of breves into semibreves (tempus) and for the division of semibreves into minims (prolation) are the most fundamental of mensural signs being the most common and by far the least controversial of all the signs of the 15th and 16th centuries. Tempus signs continued in use well into the 17th century and the semicircle (reinterpreted by some as the letter C standing for "Common Time") lived on well into the 18th century before finally being replaced by the modern time signature 4/4. Perfect tempus which means that the breve is divided into three semibreves is shown by a circle and imperfect tempus which means that the breve is divided into two semibreves is shown by a semicircle. The tactus in both perfect and imperfect tempus falls on the semibreve (78).



Perfect tempus and minor prolation



Imperfect tempus and minor prolation

Major Prolation Sign

You have already seen the sign for minor prolation since its sign is simply a plain tempus sign. Major prolation is indicated by the addition of a dot. In major prolation the tactus still usually falls on the semibreve (101). When a sign for major prolation is used in a single part while other parts above and below are in minor prolation, then the tactus falls on the minim in the major prolation part making making each minim twice as slow (92). This change is known as augmentation.



Imperfect tempus and major prolation



Major prolation with augmentation (not shown to scale)

Mode Signs

Mode signs, the usage of which were mostly limited to the music of the 15th century, were much more open to interpretation in comparison to tempus signs (20-23). Three different interpretations of mode signs existed over the course of their usage. An initial and short lived interpretation took these signs as proportions. Then during the period of 1440 to about 1480 the most common interpretation of these signs were as mensural signatures that defined the divisions of the long and the maxim while also shifting the tactus up to the breve (155-56). Towards the end of the 15th century the interpretation of the mode signs became confused and they soon went extinct during the 1530s (23).

Hothby Interpretation

Named after the theorist who described these signs, this interpretation was the most popular way to take the mode signs approximately during the period of 1440-1480 (156). In this practice, all the notes from the maxim down to the minim can be defined.

Minor Mode Signs

When a sign normally used for tempus is placed next to a single number, the circle or semicircle now designates the division of the long and the number (which can be either 2 or 3) represents the division of the breve (148). The tactus in these signs is now moved up to the breve (148). Minor prolation versions of these signs are shown below.





Major Mode Signs

When a sign normally used for tempus is placed next to two numbers horizontally arranged as in C23, O33, and etc., the circle or semicircle designates the division of the maxim, the first number represents the division of the long, and the last number represents the division of the breve.

Weyts Intepretation

A less common interpretation of mode signs named after the theorist Weyts who describes it takes it almost as the reverse as Hothby (148). Only minor mode is reflected in these signatures. In this practice, the circle or semicircle represents tempus and the figures 2 or 3 represents minor mode. Notice that C2 and O3 are identical in both Hothby's and Weyts' interpretations. The tactus is beat on the breve (149). Minor prolation versions of these signatures are shown below.







Diminution

Diminution —represented by a vertical line placed through a tempus sign —is thought to be a reduction of the length of all the notes accomplished by either transferring the tactus to the breve or by beating the tactus twice as fast on the semibreve level (121-25). Diminution sign

usage continued well into 17th century. $\mathbbm{C}\,$ survived into the eighteenth century and was referred to as "alla breve."

Diminution by Shifting the Tactus

A good number of southern theorists described diminution as being a shift of the tactus beat to the breve in both perfect and imperfect tempus (125-28).



Diminution by Beating Twice as Fast or by Beating to an Imperfect Breve

Northern theorists (but also a few southern theorists) tend to describe diminution as a literal halving of the note values in all mensurations which will have a very different effect in Φ compared to the southern approach to diminution (125-28). This is done by having the tactus fall on every two semibreves or by beating the tactus twice as fast on each semibreve (132-33). In Φ if you beat every two semibreves you are effectively beating to an imperfect breve despite the fact that Φ only has perfect breves (125). Theorists refer to this as a sesquitactus (133). Below you can see in the diagrams that the tactus on the semibreves is half the length as the tactus bars shown previously. This indicates that the tactus is beat twice as fast. The

last diagram illustrates the sesquitactus. Notice how the beginning of the second perfect breve unit (shown by a dotted vertical line) comes halfway into the the second tactus beat.





Diminution of imperfect tempus by beating twice as fast or by beating on the imperfect breve



Diminution of perfect tempus by beating every two semibreves (i.e. on the imperfect breve)

Proportional Signs

Proportional relationships can be indicated by mensural signs alone (a mostly 15th century phenomena), by fractions alone, or by a combination of fractional and mensural signs (168-69).

Basics of Proportions

Before delving into the proportional signs themselves, the essential mechanics of proportions needs to be understood. A proportion in music essentially tells the performer to play a certain number of notes in the same amount time that a different number of notes of the same type were played before (164). For instance, let us take 2:1 which is the simplest of all the proportions. A 2:1 proportion tells us that two notes should now sound in the time that it took one note of the same type to sound before. To make this concept clearer let us say that we are beating semibreves in C at 60 bpm. If we want to make a 2:1 proportion in this case the semibreves then would now be at 120 bpm because two semibreves at 120 bpm equals one semibreve at 60 bpm.

The most commonly used proportions are as follows (167):

- 2:1
- 3:1
- 4:1
- 3:2
- 4:3
- 8:3
- 8:1
- 9:1
- 9:4
- 9:8

All of these proportions are represented graphically in the table below (the 'x's represent any note value)²:

² 6 is shown because you might see it proportions 6:4 or 6:2 which are really just 3:2 and 3:1 proportions. Other proportions can be simplified too: 9:3 is really 3:1, 9:6 is 3:2, 8:6 is 4:3, 8:2 is 4:1 4:2 is 2:1, 8:4 is 2:1, and lastly 6:3 is 2:1. These multiples were sometimes used in fractional signatures.

| Proportion | | | | | | | | | | | | | | | |
|------------|---|-----|--|--------|-----|---|---|---|---|---|---|-----|---|--|---|
| 9 | х | x x | | x | | x | | | x | | х | x x | | | x |
| 8 | x | x | | х | x x | | x | | x | | | x | | | х |
| 6 | x | x x | | x | | | | x | | х | x | | X | | |
| 4 | x | | | x | x | | | x | | | | x | | | |
| 3 | X | | | , , | x | | | | | | x | | | | |
| 2 | x | | | | | | x | | | | | | | | |
| 1 | x | | | | | | | | | | | | | | |

Proportional Relationships between Tempus Signs

Before the 16th century it was assumed by most theorists and performers, especially Italian performers, that the breve whether it be perfect or imperfect was kept the same length when moving from one tempus sign to the next in performance (58).³ When the breve is kept equal when moving from one sign to the next a proportion will necessarily result between the notes contained within the breve.

The following diagrams illustrate many different possible proportional effects that can occur when different mensurations signs follow each other. Notice that in some of them the length of the tactus has to change by some degree in order to accomplish the proportion.





3:1 proportion of semibreves





3:2 proportion of minims (232)



4:3 proportion of semibreves (227)





8:3 proportion of minims (227-28)



In the early 16th century, the practice of keeping an equal breve in consecutive proportions fell into disuse among both southerners and northerners. What succeeded is an equal minim

tradition which made such proportional relationships between plain tempus signs impossible. Under this newer system, if for instance O were to follow C, the semibreves and minims in both sections would move at the same speed making the breve under O one whole tactus longer than the breve under C thus preventing the 3:2 proportion that would result if the breves were kept the same length.

Fractional Proportional Signs

The use of fractions to indicate proportions originated during the 15th century and lasted until the early to mid 17th century. Fractions, in comparison to consecutive mensural signs, much more precisely indicated proportional relationships and also opened up the possibility to communicate more complex proportions not before accessible with the use of mensural signs alone (178). Fractional proportional signs can be found in a piece of music simply as a fraction by itself or as fraction in combination with a mensural sign. Below you can see the two main sorts of fractional signs with x and y being variables representing any number:

| x y | | |
|---------|-----------------------------|------------------|
| O_y^x | O ^x y | O_y^x |
| C x | C ^x _y | C ^x y |

While fractional proportional signs used during this era did not evolve graphically very much, the way they were commonly interpreted did change. In the following will be discussed both the earlier and the later interpretations of these signs.⁴

Earlier Interpretation (mostly home to the 15th century)

The effect of proportions following one another

In a piece of music from this era you might find the piece starting off with a mensural sign and then eventually going through consecutive proportions. What might the combined effect

⁴ The diagrams in this section will illustrate several different combinations for the purposes of demonstrating different features. You will not necessarily find all of these combinations in actual music.

of these proportions be? In the earlier tradition, there is no combined effect since proportions were not interpreted to be cumulative (182-83). A proportion always relates back to the nearest prior fractionless mensural sign, skipping over the effects of any proportions that might lay in between (183). This feature can be seen in the illustration below:



The 2:1 proportion in the above example indicates that two semibreves should sound in the time of what one semibreve sounded under C. The 4:3 proportion that follows relates not to the semibreves under the 2:1 section but to the semibreves under the original mensuration.

The effect a proportion has on the mensuration

In the earlier practice fractional signs could imply a change of mensuration (185), especially when the numerator compared an odd number of notes when those notes were first grouped 3^3

in an even distribution or vice versa. The example below shows that with $\vec{C^2}$ a switch to

major prolation occurs (why minims are being compared rather than semibreves will be explained shortly).



The notes compared in a proportion

In general, the note compared in a proportion is the note that falls on the tactus in the nearest prior section with a fractionless mensural signature (213): when the mensural sign is diminished breves are compared, when the sign is a plain tempus sign semibreves are compared, and when the sign indicates major prolation minims are compared. The sole exception would be the proportion 3:2 which compares the notes one level beneath the note

that corresponds to the tactus. If for instance Φ_3^3 were to occur, four breves would be

compared to three breves since in Φ the breve corresponds to the tactus. $\vec{C_1}$ would compare

nine semibreves against one semibreve since in C the semibreve corresponds to the tactus. C^2 however should not compare three semibreves against two semibreves even though the semibreve corresponds to the tactus under C because tradition dictated that 3:2 proportions should compare notes one level beneath the tactus level notes which in this case would be minims. Similarly, C^2 would compare semibreves, not breves like you might expect.

How mensural signs coupled with fractions are to be understood

Within a piece, you might find a mensural sign coupled with a fraction. According to the earlier practice, this is used to redefine what note value is being compared in the proportion (216). Thus, if a piece starts out in O but the composer wanted to have a 4:3 proportion

comparing four breves to three breves instead of four semibreves to three semibreves, \mathbb{G}_3^3 would be used. However, such mensuration signs for whatever reasons do not necessarily reflect the correct mensuration of the new section (216).

Later Interpretation (originating in the 15th century and succeeding in the 16th century) During the 15th century a few theorists introduced a new and reformed approach to interpreting proportional signs (182-226). This approach came into common use in the 16th century and is today the most commonly understood way to interpret proportional signs (182-226).

The effect of proportions following one another

In the earlier tradition since consecutive proportional signs always compared notes with the nearest prior section under a fractionless tempus sign they did not have a cumulative effect. The later tradition however insists that a proportion compare notes to the immediately preceding section whether it is under just a plain mensural sign or a fractional sign (182-84). As a result proportions in this later tradition do in fact have a cumulative effect. In the diagram below this principle is illustrated.



Starting off in perfect tempus we have three semibreves. The $\frac{1}{2}$ sign compares two semibreves with one of O. After $\frac{1}{2}$ the $\frac{3}{2}$ sign will compare three semibreves with two semibreves of the $\frac{1}{2}$ section, not the original O section. This means that the $\frac{3}{2}$ section in relation to the O section is actually a $\frac{3}{1}$ proportion.

The notes being compared in a proportion

Unlike the earlier practice where the note value compared is whatever corresponds to the tactus, in the later practice the note value compared is the semibreve no matter what

mensural sign is being used (220-21). An exception to this rule would be 3:2 proportions where minims are compared instead (220).⁵

The effect a proportion has on the mensuration

Unlike the earlier practice, the later practice does not allow for a change of mensuration in any proportion unless the fraction is combined with a new mensural sign (187-96). This means that for instance if ³ were to follow O, perfect tempus would still be in effect (in the ⁴

earlier tradition, a switch to imperfect tempus would take place). If however ³ was combined with C then a switch to imperfect tempus could occur simultaneously with the proportion. This principle is illustrated below:



⁵ It eludes me what possible difference in performance comparing semibreves versus comparing minims could have in a 3:2 proportion assuming the mensuration is preserved. It might be simply a conceptual aid to help in performance.

References

Berger, Anna Maria Busse. *Mensuration and Proportion Signs: Origins and Evolution*. New York: Oxford University Press, 1993.