A few things about Renaissance music you should know (just as a 'reminder' – you made notes also during class):

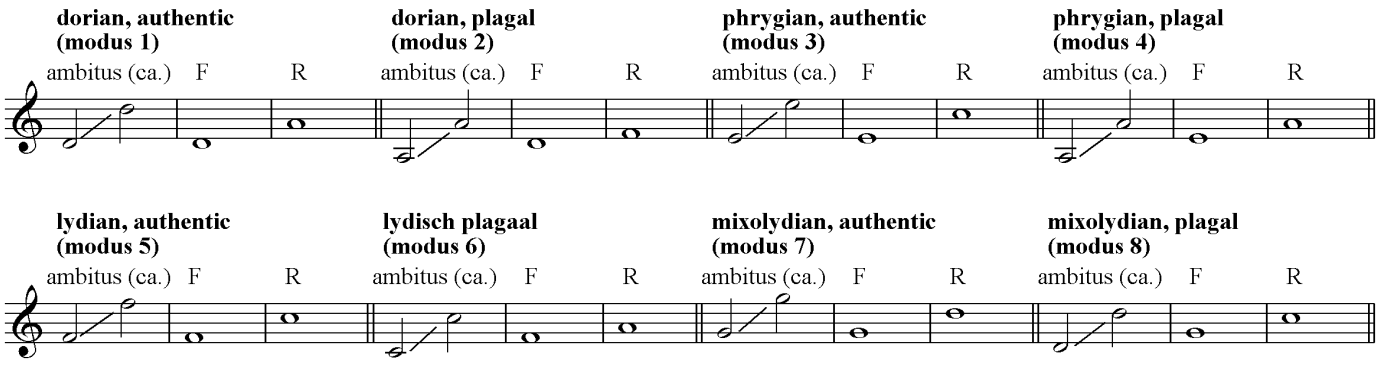
Modi

In the 16th century music is *not tonal* yet - meaning: the 'modern' major and minor keys did not yet exist, and the harmony is not yet what we could call 'functional'. Therefore it does not make much sense to work with terms like 'tonic' or 'dominant' etc. (Neither does it make much sense to describe the harmony with scale degrees..) Instead of the minor and major keys, this music is using **modes**, or the '**modal system**'.

In every modus two tones are very important: the **finalis** (the 'tonic' or 'root') and the **repercussa** (often also described as '**reciting tone**' , **tuba,** or **dominant** - I think that last name is quite misleading in fact...). In Gregorian chant, the repercussa was the tone on which the major part of a text was sung. In the 16th century it is very often used as melodic 'corner point' , 'resting point' or as a tone on which a cadence may end.

Depending on the **ambitus of the melody** we speak of an **authentic mode** or a **plagal mode.**[1] On average, the ambitus of authentic melodies is from the finalis to the finalis of the mode, and of plagal melodies from the fourth to the fourth or fifth to fifth. So: when the finalis of a mode is D, then a melody is authentic when its ambitus is from D to d, and plagal when it is from A to a. (Do not take this too literal: very often authentic melodies also use the tone below the root, very often the ambitus is a little more then an octave, and very often the ambitus of plagal melodies is not precisely from 4 to 4 or 5 to 5).

The **finalis** in an authentic mode is the same tone as in the plagal mode, but the **repercussa** differs. Originally, the repercussa in authentic modes always was the fifth, and in plagal modes the third. This worked well during the Middle Ages as long as melodies only were sung unisono, or in octaves. As soon as more voices were added, and the need might be felt to use the repercussa as a cadential point, this caused problems, as no multiple-voice cadence *on the B* was possible: the final sound in a cadence consisted in most cases of 5 and 8 on the bass - and on the B that is impossible, as the fifth on B is *diminished* (you would get: B – F – B).[2] Therefore, the repercussa became another tone.[3] In a picture (F=Finalis R=Repercussa):



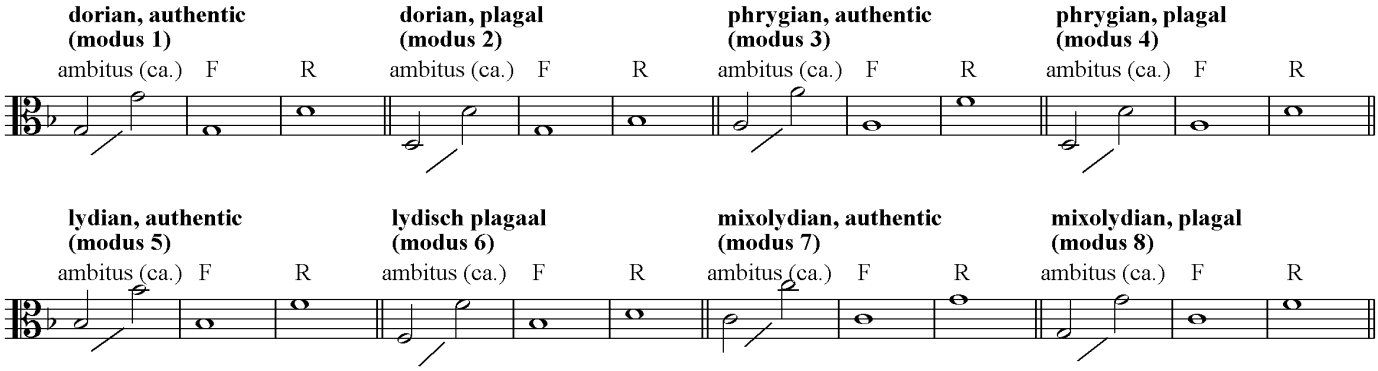
As you can see also in the above picture, the modi were *numbered* as well: e.g. Authentic Mixolydian can be called: modus 7, etc.

1 It is also possible to speak of an authentic or plagal *ambitus.*

2 The augmented fourth or diminished fifth was considered as *diabolus in music,* see page 3

3 This does *not* explain why the repercussa in plagal Phrygian became A instead of G, by the way...

The whole 'system' of 8 modi could be transposed *a fifth down.* Other transpositions were not possible yet, as the only possible key signature was Bb. In the music theory of the 16th century these transposed modes sometimes were called the 'transposed system'. The tone Bb was called: **B rotundum (**the 'round' B), and this B rotundum is contained in all modes in the transposed system (whereas the **B quadratum** is in all non-transposed-modes, see the above picture). In the transposed system the modi, their ambitus, finalis and repercussa look like this (F=Finalis R=Repercussa):



When you want to find out in wich modus a particular piece or melody is written, very often these are your 'clues':

- look at the key signature: when there is no Bb as key signature, we are in the 'natural' system, when there is a Bb, we are in the 'transposed' system
- look at the ambitus of a melody, and its most important tones
- look at cadences (cadences to the finalis and to the repercussa are very common)

When thee piece contains more then one voice (normally that is the case in the 16th century), normally the voices are alternating plagal and authentic, for example: when the Superius is plagal, the Altus is normally authentic, the Tenor plagal, ant the Bassus authentic. When you want to decide whether the *whole piece* is in an authentic or in a plagal mode, it is good useance to consider the *Tenor* as the *main voice* of the piece, as the Tenor (the 'bearer' or 'holder') is originally the voice that contains the most important melody.[4]

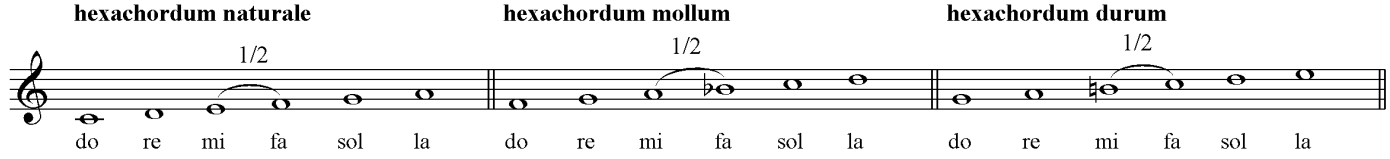
Hexachords

Next to the modal system in the 16th century **hexachords** were used, for several purposes. Keep in mind that the hexachords do *not* have a clear connection with the modes - you may even think it is quite weird that on the one hand 7-tone-modi were used, and on the other hand 5-tone-groups, as they seem to contradict. And in a way, it is...
Hexachords were used

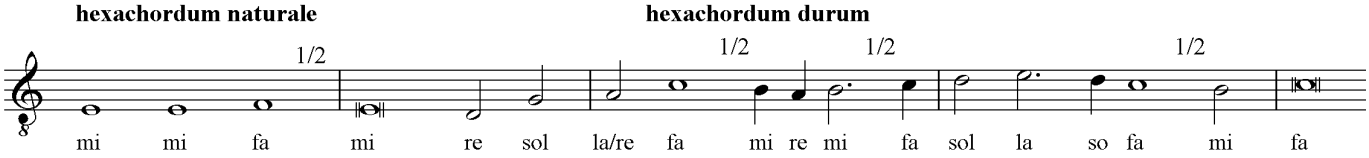
- to *name the notes.* We can be quite certain that, especially in the singing practice, the names Do (or: Ut) -Re-Mi-Fa-Sol-La of the hexachords were used to name (and sing) the notes, rather then 'absolute' names (like C D E etc.). This is called: **solmisation.**
- to *explain* certain technical and musical habits, and to formulate *rules.*

The hexachords, used in the 16th century are *symmetrical:* they consist of four whole tones, and a semitone in the middle:

4 In the Middle Ages, the Tenor often sang the original (Gregorian) melody. The other voice or voices were added to that original melody, the *cantus firmus.* This procedure we still find in the Renaissance in the *cantus-firmus-Mass,* where the tenor sings the original Gregorian melody. We could call Josquin's *Missa da Pacem* a (somewhat free...) cantus-firmus-Mass.



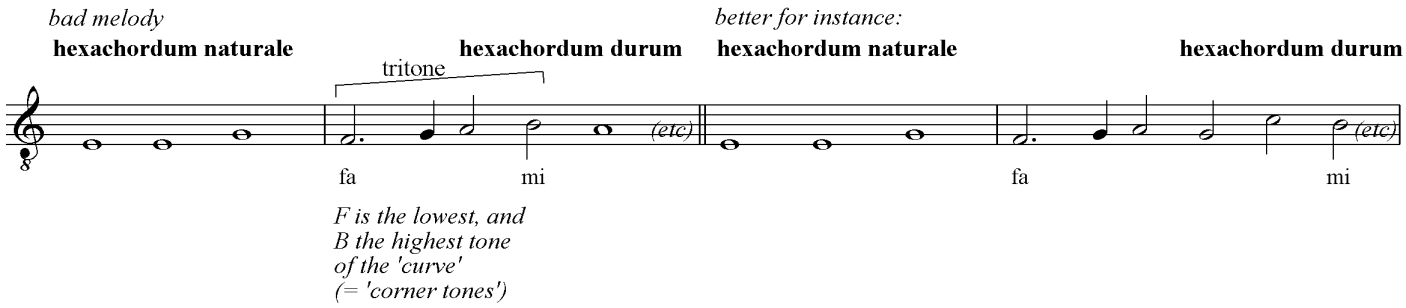
Using these hexachords when singing a melody has the advantage that the singer always knows where the half tone is, and how to name it (mi-fa). But, as in most melodies the ambitus exceeds a sixth, the singer has to **mutate** from time to time from one hexachord to another. Very often this means that *Re* has to be changed to ('mutated to') *La* or vice versa (but sometimes the mutation is different). See for instance the example below, the beginning of Josquin's *Missa Pange Lingua,* with solmisation-syllabes: we have to mutate from the hexachordum naturale to the hexachordum durum:



The hexachord-syllabes are also used to name (and shame...) the **tritone**[5]:

Mi contra fa *(Mi against Fa*
Diabolus in musica *is the devil in music)*

To understand this rhyme, you have to take the Mi from *another* hexachord then the Fa: the Mi in *naturale* forms a tritone with the Fa from *mollum, and* the Fa from *naturale* forms a tritone with the Mi from *durum* (see the example on page 1). Tritones are nearly always avoided between 'corner tones' of melodies, and can als normally not been used as vertical interval between two voices:



Musica ficta

Another use of the hexachords is the following:
Some tones in Renaissance pieces are chromatically changed when performing the piece - though this is *not made visable* in the score or part. This is known as **musica ficta.** One important use of musica ficta is the following: when a melody is rising *just one tone higher then the highest tone of a hexachord* (in other words: one tone above the La, and then back down), this tone above is performed as a *semitone above the La*. When a melody goes up more then just this single step, the singer has to mutate to another hexachord. The 'just one step above'-situation was described in the following rhyme:

5 Tritone=tri tonus= the distance between two tones is three *whole tones.* For instance: F G A B . In other words: the augmented fourth F - B. In practice, 'tritone' is also often used for the diminished fifth (for instance: B - F , though this interval arises from different steps: B C D E F)

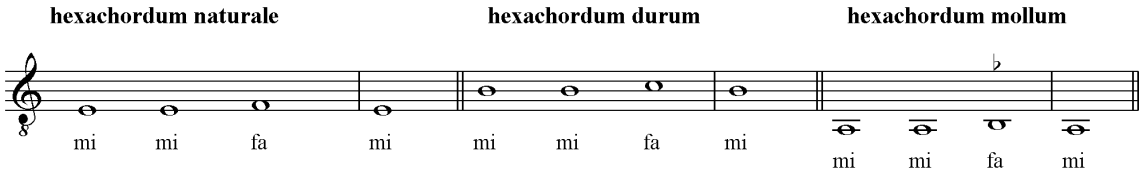
Unum tonum super la *(the tone a whole tone higher then La*
Semper est canendum fa *always has to be sung as Fa)*

In fact the distance between the La and the tone above the La is interpreted as a Mi-Fa-distance (half tone!). And probably people sang: La-Fa-La (which means they took the Fa from another hexachord). Probably therefore the 'unum tonum-rule' is also known as the 'La-Fa-La-rule', or the 'Fa super La-rule'.
Musica ficta is also often used in cadences (clausulae)[6], and sometimes to avoid a tritone between two voices.

Finally, another important use of the 'hexachord system' is the following:

Imitation

Imitations in the 16th century always are on pitches that can bear the *same solmisation-syllabes* in the imitaion as in the original motif. Basically this means of course that any motif, meant to be used in an imitation, can stand *on three different pitches (=in three hexachords).* In the hexachordum mollum this may lead to the introduction of a Bb - which probably is not visible in the score, so: we have to use musica ficta! For example: The initial motif of Josquin's *Missa Pange Lingua* could be imitated as in the example below (at the left you see the first entrance of the motif, then you see the two possible imitations). Josquin is using an imitation a fifth below the original motif, which means that he uses the hexachordum mollum; we have to use musica ficta in the imitation, in bar 2: the performance should be A A Bb A, and not A A B A (as the syllabes *stay* Mi Mi Fa Mi):



In good modern editions musica ficta is indicated *above or below* the stave (like I did in the example above), in order to make clear what *is* in, and what is *not* in the original score or part. Sometimes the use of musica ficta is a matter of interpretation, and then it is practical to know what the composer notated and what not.

Cadences / clausulae

Closings ('cadences') in the music of the 16th century are best described as combinations of motions in *single* voices (that is how they were described at that time). Cadences may take place to the finalis of the modus, but also to other tones of the mode (especially when they do not stand at the end of the piece or movement). Keep in mind that music in the 16th century does not use such a thing as 'modulation', so only the tones of the mode are possible 'cadential points'.

- The motion 2-1 in a closing is called: **clausula tenorizans** (probably because Gregorian melodies always end with stepwise motion down to the finalis - and the tenor is originally the voice that 'keeps' the cantus firmus, the original Gregorian melody)
- The motion 7-1 in a closing is called: **clausula cantizans;** this is the most important motion next to the *tenorizans:* a 'cadence' nearly always consists at least of the motions 7-1 and 2-1.
- A jump in the bass in a closing (in Dorian, Lydian and Mixolydian: 5-1, in Phrygian there is a problem..) is called: **clausula basizans**.

6 See the paragraph about cadences.

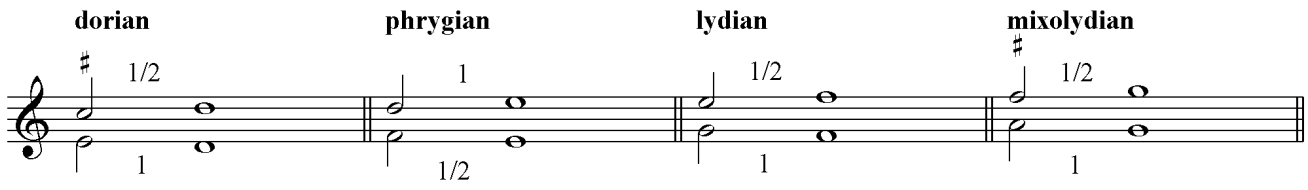
- When a fourth voice is involved in the cadence, this voice normally ends on 5 (and reaches 5 by keeping the same tone, or by stepwise motion). This is called: **clausula altizans.**

Clausulae not necessarily occur in the same voice as their names suggest: a clausuala tenorizans may happen in the Cantus or Altus etc. The clausula basizans though is always in the *lowest voice* (so: only possible in the Tenor when there is no bass involved, etc.)

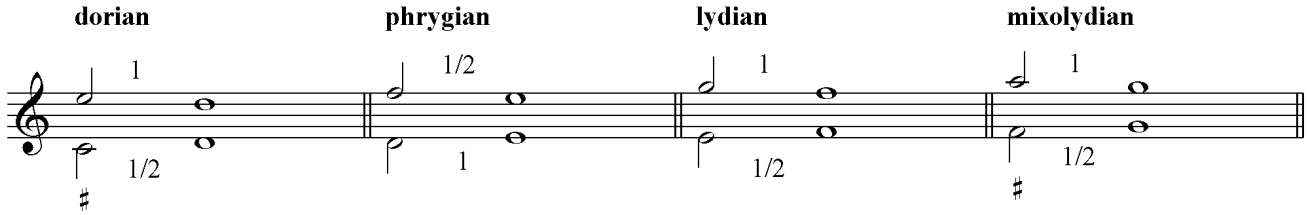
In Renaissance cadences, as far as the *cantizans* and the *basizans* are concerned, as a rule (or: habit..) *one voice goes up or down a semitone to 1 or 8, and the other voice goes up or down a whole tone to to 1 or 8.* In other words: the octave at the end of the cadence is reached from a *major* sixth. In Dorian and Mixolydian we then observe the use of an, in fact: *chromatic,* **leading tone**. This chromaticism is not notated, so this is again: **musica ficta**. These leading tones (C# and F#) are not part of the 'hexachord system' (C# and F#). I assume the singers in the 16th century did not care too much in this case about their solmisation...

So, the cadences to the finales of the eight modes are basically:

clausula cantizans on top, tenorizans at the bottom:

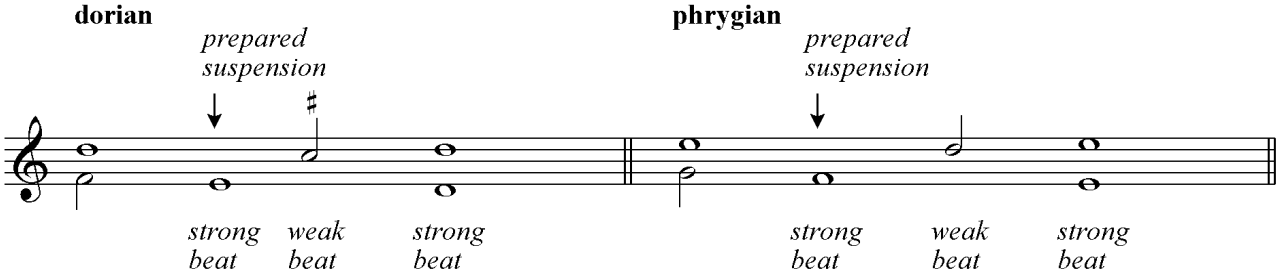


inverted:

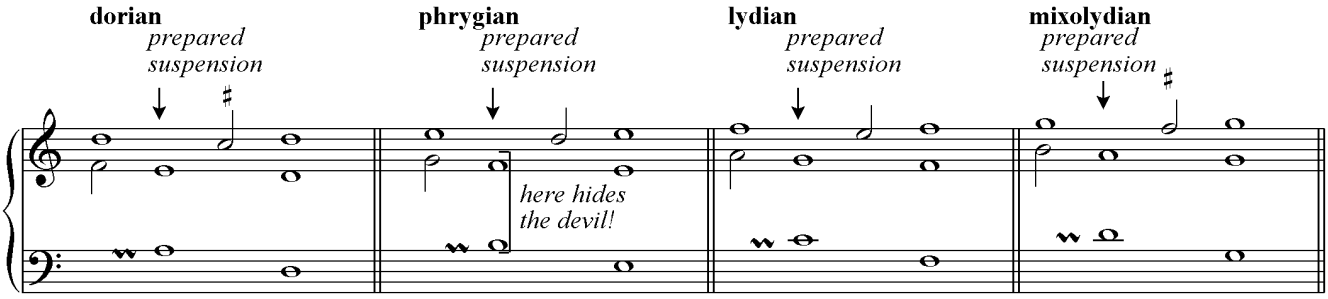


As you can see *no* musica ficta is needed in Lydian, and in the Phrygian mode the clausula tenorizans is a *semitone.*

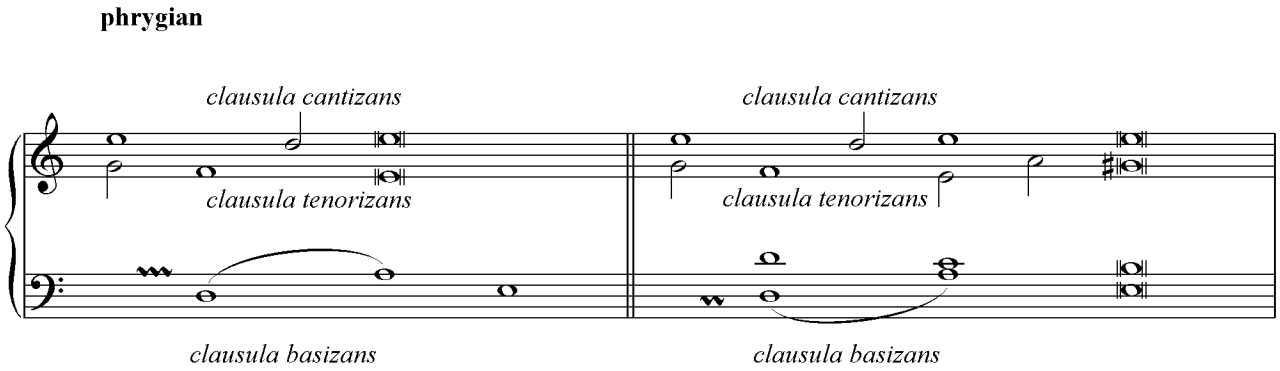
In the clausula cantizans we very often see a *prepared suspension* (7-6 when you relate to the clausula tenorizans):



When a *clausula basizans* is added to these 'formulas', we find that the added bass can jump from 5 to 1 in the Dorian, Lydian and Mixolydian modes. But in Phrygian there is a huge problem, as in this modus a horrible *diabolus in musica* would stand on top of the bass:



The 'solution' for the Phrygian cadence is: do not let the bass jump to the finalis, but to the *fourth;* then the final sound also consists of only perfect consonances (as it should!). The only possible jump to the fourth is a jump from the seventh, so: D - A in E Phrygian. To our modern ears this might sound a bit strange: we have to accept E as the finalis, the root, *even though* there is another tone *below* the E in the final sound. Already in the 16th century this Phrygian closing was obviously felt as strange, or 'imperfect' , as compsers often added a *second jump* in the bass, from 4 to 1 (A - E in E Phrygian). When - later in the 16th century - final sounds with a third (imperfect consonance!) became acceptable, the Phrygian cadence ended on a *major* triad (in E phrygian G# is then used):



We may assume that, as (E-) Phrygian was, in the more *tonal* music of the 17th century, often re-interpreted as *part of the A minor key,* both the 'modern' *plagal cadence* and the *semicadence* originate from the Phrygian cadence (read the sounds in the above example as IV – I – V in A minor...)

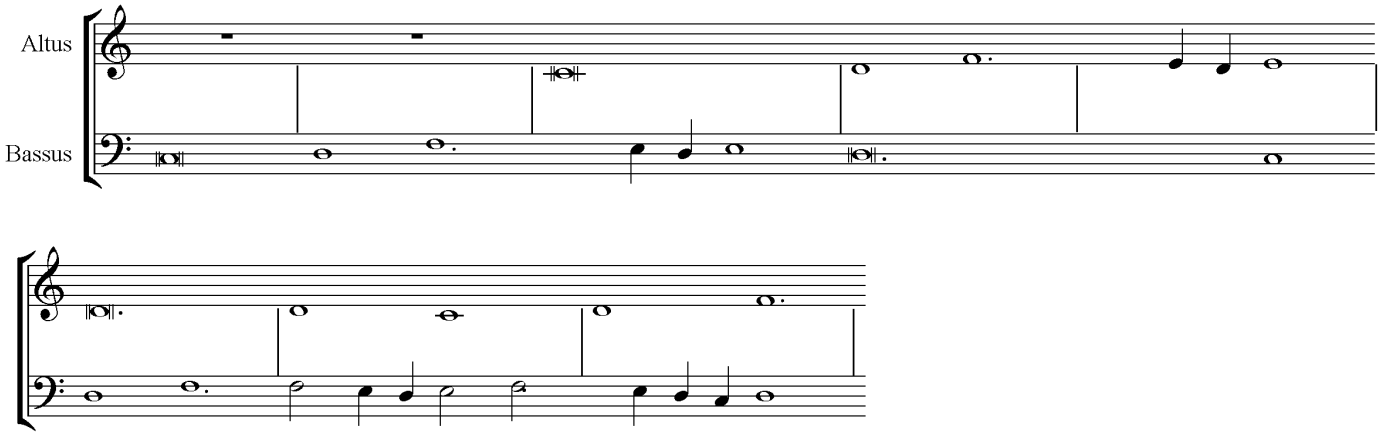
Embellishments / rhythm and metre

Suspensions in the music of the 16th century are always *prepared.* Typically, suspensions are used in final cadences (see the above examples), and nowhere, or hardly anywhere else. **Passing notes** are very common, especially in smaller note values. **Neighbouring notes** are used as well, but only as **lower neighbours**. **Anticipations** may occur in cadences, and nearly always the octave of the root of the final chord/sound is anticipated.

The **rhythm** in the music of the 16th century can be desribed as free-floating: the **metre** is less prominent then in later music, and melodies can move quite freely within the 'framework' of the metre. Keep the following in mind:

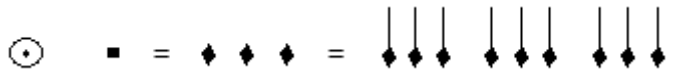
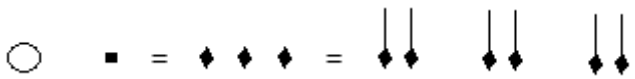
- the *slur* did not exist yet – so durations like half note+sixteenth or whole note+eighth note (etc...) were not possible yet. The *dot* already existed though, so notes could be lengthened by half their value
- music normally was notated *in seperate parts;* scores hardly existed. In these parts *no barlines were used.* In good modern editions (scores) this is reflected: durations may go 'over the barline' - slurs are avoided even when a barline is crossed. And: the barlines stands *between* the staves. The beginning of the *Christe eleison* of Josquin's *Missa Pange Lingua*

should look like this:[7]



The **metre** is indicated with a system in two 'levels': **tempus** is the 'beat' (or: the metre: binary or ternary) and **prolatio** is the subdivision of the beat (binary or ternary). I am stealing from wikipedia here:[8]

> Of most practical importance were the subdivisions from the brevis downwards (by that time, the semibreves and no longer the breves had taken over the function of the basic counting unit). The four possible combinations of *tempus* and *prolatio* could be signaled by a set of **mensuration signs** at the beginning of a composition: a circle for *tempus perfectum*, a semicircle for *tempus imperfectum*, each combined with a dot for *prolatio maior*, or no dot for *prolatio minor*. These correspond to modern 9/8, 3/4, 6/8, and 2/4 meters respectively.

Tempus perfectum	Prolatio maior	9/8	
Tempus perfectum	Prolatio minor	3/4	
Tempus imperfectum	Prolatio maior	6/8	
Tempus imperfectum	Prolatio minor	2/4	

eight or twelve modes?

In 1550, **Glareanus** published his idea[9] that there are in fact 12 modes, instead of eight. He adds to the eight original modus four new ones: Aeolian (authentic and plagal), on A, and Ionian (authentic and plagal), on C. Though this proposal has been quite influential, one could hold against it that - as musica ficta can be used in all modes - the *possibilities* of these new modes are *already contained* in the original system of 8 modes. For instance: when a Bb is used in Lydian (common practice: the augmented fourth B natural is hardly in use in the 16th century any more), or: when the leading tone

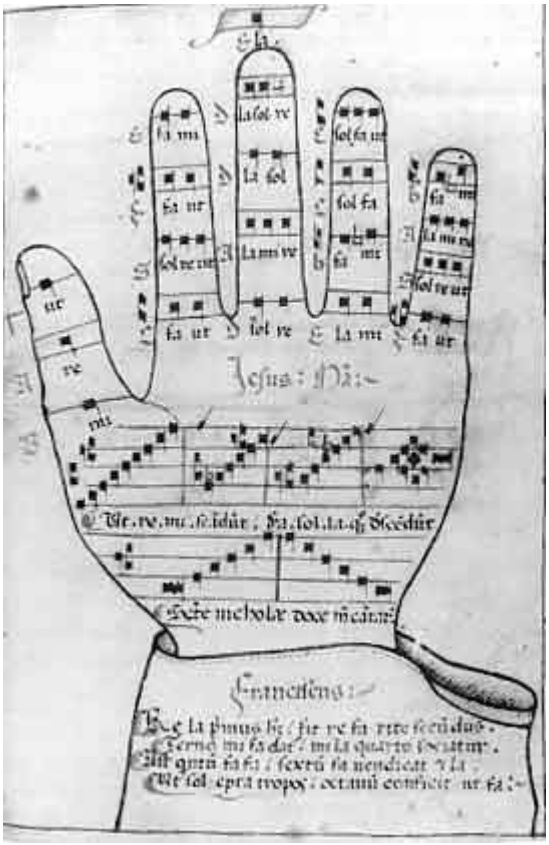
7 It does *not* look like this in the edition I gave you..!
8 http://en.wikipedia.org/wiki/Mensural_notation
9 In the book *Dodecachordon* (literally, "12-stringed instrument"). The title refers to his proposed system of 12 modes.

F# is introduced in Mixolydian, then there is actually no need for a new, Ionian mode. And when the B natural in Dorian sometimes is lowered to Bb (musica ficta, 'Fa super La'), then there is no need for the new modus Aeolian...

http://findarticles.com/p/articles/mi_hb6657/is_4_56/ai_n28784455/ :

> From approximately the eleventh century through the sixteenth, musical space was conceptualized theoretically by a system of overlapping hexachords covering the range from G to e" (the gamut). Pitches occurring within these hexachords were known as "musica recta," while pitches outside the system were identified as "musica ficta." The system was taught by means of hexachordal solmization, traditionally traced back to Guido of Arezzo. The solmization syllables--ut, re, mi, fa, sol, la--derive from the first stanza of the plainchant hymn connected with the feast of the Nativity of Saint John the Baptist: "Ut queant laxis resonare fibris, Mira gestorum famuli tuorum, Solve polluti labii reatum, Sancte Joannes" (Liber Usualis, p. 1504). The pitches connected with these syllables in the hymn--C, D, E, F, G, A--form the natural hexachord in the system of hexachordal solmization. The order of pitches in the natural hexachord (tone, tone, semitone, tone, tone) is identical in the hard hexachord (G, A, B[natural], C, D, E) and in the soft (F, G, A, B[flat], C, D), the semitone always defined by the syllables mi and fa. When solmizing an individual part, the singer would move from one hexachord to another by means of a pitch common to both, a process known as "mutation."

http://en.wikipedia.org/wiki/Guidonian_hand :



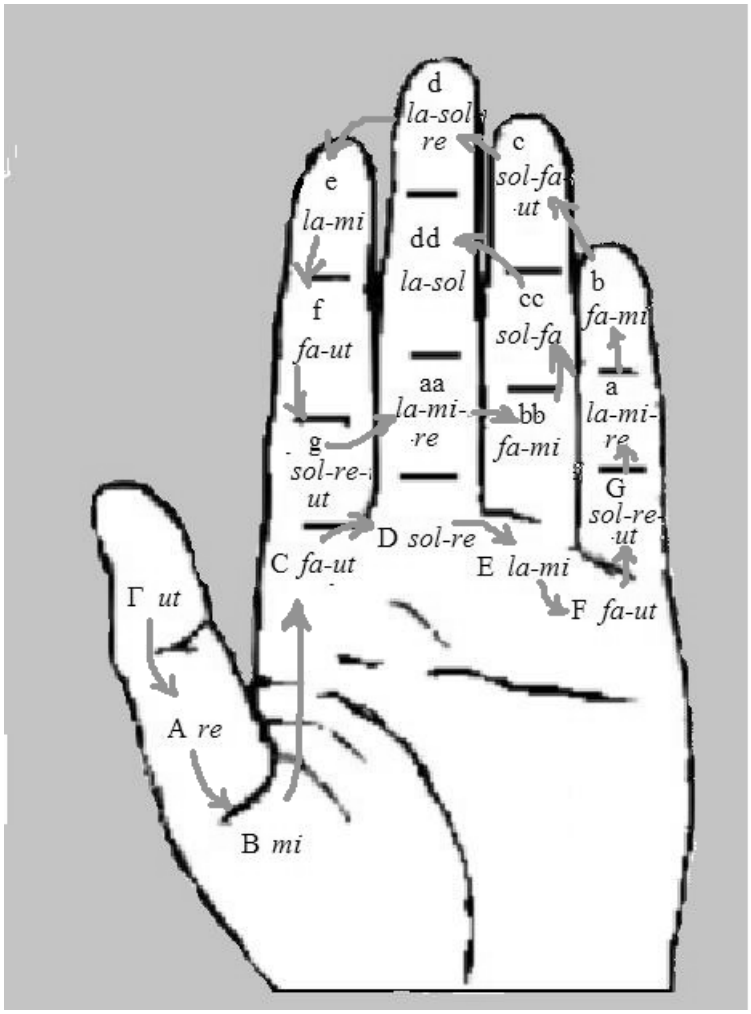
In Medieval music, the **Guidonian hand** was a mnemonic device used to assist singers in learning to sight sing. Some form of the device may have been used by Guido of Arezzo, a medieval music theorist who wrote a number of treatises, including one instructing singers in sightreading. The hand occurs in some manuscripts before Guido's time as a tool to find the semitone, it does have the depicted form until thee 12th century. Sigebertus Gemblacensis (c1105–10) did describe Guido using the joints of the hand to aid in teaching his hexachord. The Guidonian hand is closely linked with Guido's new ideas about how to learn music, including the use of hexachords, and the first known use of solfege.

The idea of the Guidonian hand is that each portion of the hand represents a specific note within the hexachord system, which spans nearly three octaves from "Γ ut" (that is, "Gamma ut") (the contraction of which is "gamut", which can refer to the entire span) to "E la" (in other words, from the G at the bottom of the modern bass clef to the E at the top of the treble clef).

In teaching, an instructor would indicate a series of notes by pointing to them on their hand, and the students would sing them. This is similar to the system of hand signals sometimes used in conjunction with solfege.

There have been a number of variations in the position of the notes on the hand, and no one variation is definitive but, as in the example below the notes of the gamut were mentally superimposed onto the joints and tips of the fingers of the left hand. Thus "gamma ut" (two Gs below middle C) was the tip of the thumb, A ("A re") was the inside of the thumb knuckle, B ("B mi") was the joint at the base of the thumb, C ("C fa ut") was the joint at the base of the index finger, and so on, spiraling around the hand counterclockwise past middle C ("C sol fa ut") until the D a ninth above middle C ("D la sol") (the middle joint of the middle finger) and the E above that ("E la") (the back of that joint, the only note on the back of the hand) were reached.

This device allowed people to visualize where the half steps of the gamut were, and to visualize the interlocking positions of the hexachords (the names of which—ut re mi fa sol la—were taken from the hymn Ut queant laxis). The Guidonian hand was reproduced in numerous medieval treatises.



The medieval hexachordal system (*c′* = Middle C)

Note	Syllable					
e"						la
d"					la	sol
c"					sol	fa
b□'						mi
b□'					fa	
a'				la	mi	re
g'				sol	re	ut
f'				fa	ut	
e'			la	mi		
d'			la	sol	re	
c'			sol	fa	ut	
b□				mi		
b□			fa			
a		la	mi	re		
g		sol	re	ut		
f		fa	ut			
e	la	mi				
d	sol	re				
c	fa	ut				
B	mi					
A	re					
Γ	ut					

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- Andrew Hughes. "Solmization", Grove Music Online, ed. L. Macy (accessed March 12, 2006), grovemusic.com (subscription access).