A BRIEF HISTORY OF MUSIC UP TO THE YEAR 1600 AND AN EXPLORATION OF SUCH RELATIONSHIPS AS EXISTED BETWEEN THE VISUAL ARTS AND MUSIC IN THAT PERIOD.

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Musical angels from Van Eyck's Ghent alterpiece.

INTRODUCTION

Few writers on the history of music omit to make an occasional analogy with the visual arts. Fewer investigate any objective validity these analogies may have.

The facts that physically the effects of sound and colour are produced by vibration, and physiologically the human brain constitutes a unified neurological system provide theoretical grounds for an investigation of this sort.

While I am not equipped, however, to approach the subject from either the points of view of physics or physiology, I do hope to provide evidence to substantiate the validity of such analogies.

This essay is divided into two parts. The first deals with the history of music up to the Renaissance and the second relates this music to the visual arts of the same period.

Girl playing the cythera.

MUSIC IN ANTIQUITY AND PLAIN CHANT

Until quite recently an account of the history of western music would have begun with Christian chant (synonomous with Plainchant and Gregorian Chant) and a necessarily vague account of its classical Greek ancestry. However, scholarship has lately made great progress in research into earlier music. A possible forty musical fragments from antiquity are known, and written music, dating from about 1300 B.C. has been found at Ugarit, now Rar-ash-Shanra, in Syria. It is probable that musical theory, including written notation, was widespread some 1000 years before Homer.

The most important ancient musical theories were those of Pythagoras (c.585 - c.479 B.C.) and his brotherhood, who discovered the precise mathematical basis of all the intervals now known to western music. Their discoveries in music were applied to cosmology in which the firmament was pictured as a "harmony of the spheres." Practically, however, music remained a subservient art in its connections with epic, ode, lyric poetry, dance and theatre; reaching a peak during the sixth to fifth centuries B.C. and declining with those arts, thereafter. By the second century B.C. the word 'music' comes to refer exclusively to harmonic science which had become increasingly more concerned with metaphysics than with sound.

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Despite the existence of a musical notation, ancient music remained an oral tradition and failed to undergo cumulative development in the same way as, for example, poetry or painting. The music of classical Greece was almost as little known in imperial Rome as it is to-day. Musical instruments, on the other hand, did develop considerably within the limited capacity of ancient technology. The most complex of these was the organ or hydraulis, invented, according to many sources, by the Alexandrian Greek Ktesibios in the third centry B.C. as a device to sustain the notes of an oboe-like instrument called the Aulos.[1]

Research into Christian Chant has shown that it owes more to Synagogue Chant and the near East generally, through Byzantium, than it does to the Greeks.[2] Nevertheless, ancient Greek musical theory was to have a delayed influence at a time when Christian Chant was already a centuries old tradition. These theories were transmitted from antiquity through the late Latin writers Boethuis (480-524) and Cassiodoius (c.490 - 583), and more completely through Arab writers such as Al-Thindi (d.c. 874) and Al-Farabi (known as Alpharabius, d.c. 950). A brief outline of Greek musical theory is given in Appendix 'A'.

[1] "The organ from its invention to the 13th Century." Perrot

[2] The tonal system underlying Byzantine music is diatonic and extremely similar to the Gregorian system.

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In a sense the music of imperial Rome may be said to have had a direct, if purely negative, influence on the development of music in the Christian era. During the latter days of the Roman Empire music had degenerated, by all accounts, into a very pagan affair indeed associated with dancing girls in the circus so that much of the character of Christian Chant could well be due to its having been purged of all distinctively secular elements such as the use of musical instruments. Indicative of this hatred of music with pagan associations is the admonition of Clement of Alexandria (d.215):-

"It must be banned, this artificial music, which injures souls and draws them into feelings snivelling, impure and sensual, and even a Bacchic frenzy and madness. One must not expose oneself to the powerful influence of exciting and languorous modes, which by the curve of their melodies lead to effeminacy and infirmity of purpose. Let us leave coloured (chromatic) harmonies to banquets where no-one even blushes at music crowned with flowers and harlotry."

On an even less restrained note, St. John Chrysostus (c.345-407) had this to say:

"As swine flock together where there is mire.....so demons congregate where there are licentious chants.... and those who

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bring comedians, dancers, and concubines into their feasts call in demons and Satan himself and fill their homes with innumerable contentions, among them jealousy, adultery, debauchery, and countless evils."

In the beginning, as far as Christian Chant is concerned, was the word, specifically those words enshrined in the liturgy. The ritualistic declamation of these sacred and immutable texts constituted the vital force of religious ceremony. Gospel readings and prayers were always performed in a manner of heightened speech, known as Cantillation[2], of one sort or another, is used in ceremony all over the world. It involves the chanting of words on one note (known as a reciting note) with cadences to mark punctuation. With verse forms, such as the psalms, cadences occur regularly. In their stricter form, these procedures are mostly Hebrew in origin. The building of large churches at Rome, Antioch, Jerusalem and Alexandria made cantillation a practical necessity but the acoustic properties of these buildings brought out, on the other hand, the essential musical qualities of this form of declamation.

The consequence of the introduction of cadences is the creation of a secondary melodic line which complements the lower reciting note.

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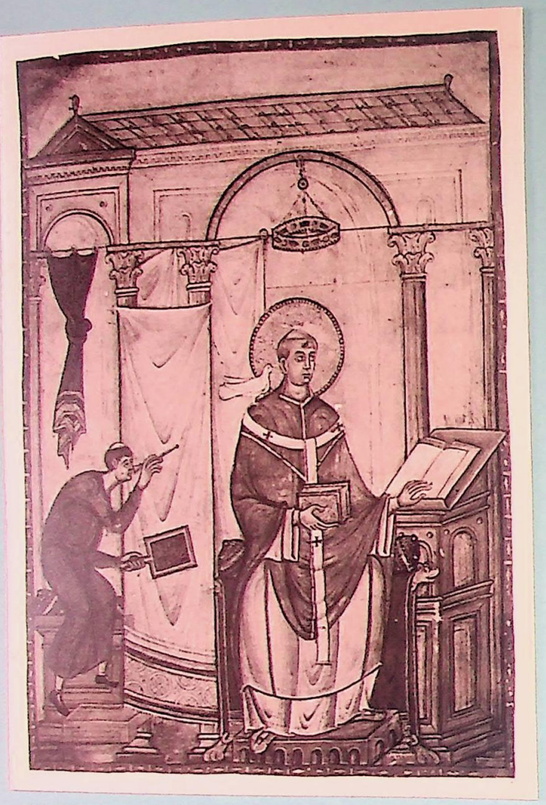

St Gregory being inspired to write the chants. From a 9th century manuscript.

Ornament would have been introduced to bridge the gap between these two notes as the interval of a Fifth is a difficult vocal leap. The primary or root note (reciting note) eventually becomes the "Finalis" of the Church modal system and the upper note becomes the dominant or Fifth.

As Cantillation evolved into a musical experience, the aviodance of monotony became essential. Since chant consists of only one melodic line with no harmonic implications, monotony is avoided by the use of contrary motion, repetitions, imitations, melodic echoes, musical rhymes and, in a word, all that is necessary to make Gregorian Chant pleasing and artistic, so long as it remains within the bounds of what is sufficiently restrained for use in worship. Tradition credits Pope Gregory the Great (540-604) with the inspired composition of the main body of Christian chant. This claim is largely discounted. Apart from one hymn discovered in 1918 - dedicated to the Holy Trinity and written in Greek alphabetical notation - and some fragments from the eighth century, the first complete manuscripts of Gregorian Chant come from the Franco-German Empire of the ninth century. From this evidence it is believed that the elaboration of simpler plain chant into today's Gregorian Chant took place there. Some of these chants, such as Lesson and Psalm Tones, Litany Chants and simple Antiphons, may have been preserved in oral tradition and date back to very early times but others are so complex and ornate that it seems impossible that they could have

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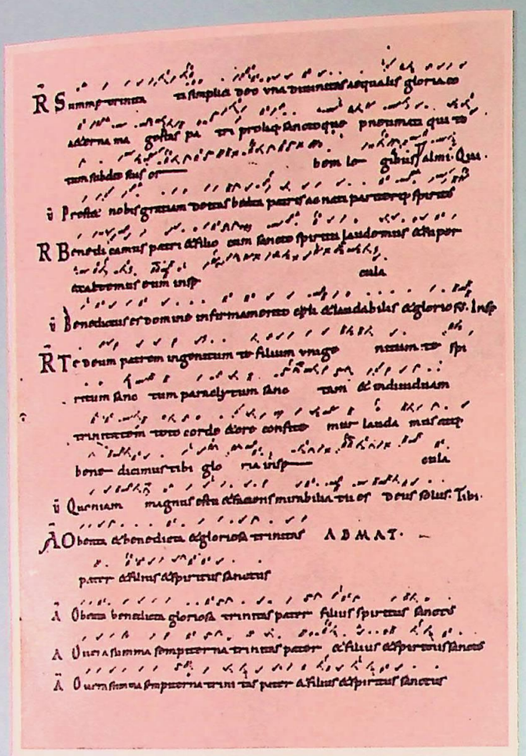

An example of early neumatic notation.

been passed on before the invention of musical notation. As Isadore of Seville said in the early seventh century - "if music cannot be retained by men's memory, it is lost, for it cannot be written down." Even at this early stage, the lack of a system of musical notation was keenly felt.

The earliest notation of Christian Chant dates from the ninth century and is known as Neumatic Notation from the Greek word "neume." It involved the use of symbols derived from the accent marks of the Greek and Latin grammarians, and dots grouped by superposition and conjunction. Using the acute and grave accents, the rise and fall of melody could be shown but the intervals between notes could not be represented. Therefore, these staffless neumes were really only a memory aid. Improvements subsequently made to this system included the placing of notes on different levels according to the variation of the intervals and, sometimes, letters placed above the neumes spelling out the notes. The addition of a horizontal line, representing F, proved a great advance and to this was added one for C. A four line stave was created by the addition of a further two - A and E. Finally, clef signs for C or F were placed on this stave and the square shaped neumes, in use for Gregorian Chant today, appeared around the year 1200.

About 3,000 melodies, collected and organised from the sixth to the seventh centuries constitue the body of Gregorian Chant which we have today. These are largely contained in two choir books, the Gradual and

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the Antiphonal. The melodies can be classified into three types - 1) Syllabic, or one note to a syllable; 2) Neumatic, from two to five notes to a syllable; and 3) Melismatic, long, florid phrases, sung to one syllable. The actual composition of different chants for the liturgy, special feast days and the office was the work of anonymous craftsmen and involved working from pre-existant melodic motives (or melody types, as used in some Indian music today) and short phrases called melodic cento which had specific places in the melody and were associated with particular modes. These modes were the work of ninth century theorists who reformed the basic structure on which the melodies were built into regular diatonic succession in a system of eight musical modes. The modes had originated in seventh century Byzantium where they were called octeochos. There were designated by Greek numerals in accordance with the ascending order, the attribution by early theorists of the names of Greek modes such as Mypodorian, Mixolydian, etc, to church modes, proved to be incorrect, though the Greek names are still sometimes used. The church modal system is given in Appendix 'B'. These musical modes are not to be confused with the 6 rythmic modes.

I will concentrate, in my survey of church music, on those compositions designed for the Mass, to the exclusion of those for the Divine Office. In the following table the structure of the Mass is given. In it the invariable parts, or the Ordinary of the Mass are marked 'O' and the variable parts, or Proper, are marked 'P'.

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The Preparation

1.	Introit	P.	
2.	Kyrie	O.	
3.	Gloria	O.	(Omitted during Lent and Advent)
4.	Collects	P.	
5.	Epistly	P.	
6.	Gradual - Alleluia	P.	(Each sometimes ommitted and replaced by tract or sequence).
7.	Gospel	P.	
8.	Credo	O.	

The Offering

9. Offertory

The Sacrifice

10. The canon (O) which begins after the Preface (P) and Sanctus Benedictus leading to the Eucharistic Prayer.

The Communion

11.	Pater Noster	O.
12.	Agnus Dei	O.
13.	Communion	P.

The Post Communion and Conclusion

14.	Closing prayers	P.
15.	Dismissal	O.

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(Mass for the dead omits Gloria and Credo and has a Gradual, Tract and Sequence).

Of the Proper of the Mass, the Introit, Offertory and Communion are Antiphonal chants. They are also processional chants and therefore more purely musical than the Liturgical recitatives. No action takes place during the singing of the Gradual and Alleluia (or Tract). Everyone sits down to listen to a performance offered for its own sake, as praise, to God. The vocalisation of the final vowel of Alleluia is called the 'Jubilis' and is described by St. Augustine as a "song of joy without words."

After the rather definite codification of the whole repertory of chant for the Mass from the sixth centry, the eight century saw a creative outburse in all the arts and new and adapted chants in the form of tropes and sequences. A trope is an extension of either the words, melody or both, of a chant and a sequence is a troped Alleluia.

Notkar Balbulus, a monk of St. Gall, where he was made librarian in 890, writes in his book "Liber Ymnorum" of his difficulty in learning by heart the very long melodies of the Alleluia, and of how delighted he was when a refugee priest came to the Abbey bringing an antiphonal with him which contained verses set to the Jubilis. He applauded the idea of making the melodies easier to remember and set to work putting

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words to the melodies himself. When he showed his efforts to his master, the Irish scholar Yso, he was corrected and told that every note of the melody ought to have a separate syllable. Yso was therefore quoting a rule already known to him so from this we can see that Notkar did not invent the syllabic sequence. Soon almost every part of the liturgy was troped "farced" or stuffed" in one way or another, but with only the grudging toleration of authority.

Tropes extending melody are the first independant compositions by known authors and the oldest are thought to be the work of Tuitilo, a monk of St. Gall, poet, player on wind and string instruments, architect and sculptor.

This outlet for creativity was, in the end, rather limited, and by the eleventh century had become stretched to the troping of tropes. In one M.S., the Winchester troper, there is a Gloria into which nine extra clauses have been incorporated. Between the third and fourth words of the last clause, a long phrase of over twenty words has been inserted, each syllable placed beneath a note in the melodic flourish on one syllable of a word from the nine clauses troping the Gloria. The following example, in which the trope appears in capitals, demonstrates how this procedure often resulted in a nonsensical text.

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"All the ends of the earth have seen EMANUEL, THE ONLY-BEGOTTEN SON OF THE FATHER OFFERED FOR THE FALL AND THE SALVATION OF ISRAEL, MAN CREATED IN TIME, WORD IN THE BEGINNING, BORN IN THE PALACE OF THE CITY WHICH HE HAD FOUNDED, the salvation of our God. Be joyful in the lord all ye lands."

The Council of Trent removed all but four sequences from the Roman Missal. It is a characteristic feature of these for the melody to be thrown up a fifth in scale after a certain number of phrases; not repeated exactly but definitely continued at a higher pitch. A tenor would have had to sing the higher phrases and a bass the lower because of abrupt changes in register within the large compass of an eleventh. It was as Dom Anselm Hughes writes "a very short step from a repetition of a melody at the fifth above by a different set of voices to the simultaneous performance of that melody by two sets of voices at the interval of a fifth.

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Ars Antiqua and Secular Music

Polyphony (Greek polyphonos from 'polys', 'many' and 'phone', 'sound'), is an element of varying importance in the music of many peoples and cultures. It is the intensity of its development in the west which is unique. Although for a long time it was treated as no more than a form of decoration to be applied to a plainchant, the existance of "Schola Cantorum" engendered a professionalism whcih persued the manipulation of harmony for its own sake in an unprecedented way. As is to be expected, this was without the approval of authority at first.

It seems (according to E.H. Sanders) that this practice of elaboration by means of vertical intervals goes back to unrecorded practices of north western Europe and, in fact, the first written examples of counterpoint to a plainchant may have originated in ninth century Ireland. They are contained in a small anonymous musical handbook and its commentary, "Musica Enchiriadis" and "Scholia Enchiriadis", which were formerly attributed, without foundation, to the Franco-Flemish monk Huchald (c.840-930), author of "De Institutione Harmonica." Jaques Handshin argues for their Irish authorship as they were known to Johannes Scotus who predates Hucbald.

In both these books, and Hucbald's, "De Institutione Harmonica", polyphony is confined to the doubling of vocies at two, three and four levels in fourths, fifths and octaves. This is known as strict, or parallel, organum.[1] A freer type of organum, which includes the interval of a third and oblique and contrary motion, is discussed in

Carving of musicians from the portal of St. Martial in Limoges.

Guido d'Aresso's treatise "Micrologus" (c.1040).

The melodic independance resulting from this freedom was followed by rhythmic independance in the works of the first important schools of organal composition at the Abbey church of St. Martial at Limoges and the pilgrimage cathederal at Santiago de Compostela in north-west Spain. In this style, called 'melismatic organum', a Gregorian chant melody, called cantus firmus or tenor, is sung in long held notes beneath free flowing melismas of shorter notes in the upper voice.

By the second half of the twelfth century, a new school of composers came to the fore at Notre Dame. Their works are contained in a large book of organa, "Magnus Liber Organi," composed mainly by 'Magister Leoninus' with revisions and additions by 'Magister Perotinus.'
It wasn't common at this time for composers to sign their work. The Notre Dame style of composition owed much to the St. Martial and De Compostela styles. The principle difference was the arrangement of the tones of both tenor and duplum (composed upper voice) in brief rhythmic patterns wherever the original plainchant was melismatic. These rhythmically organised sections were called clausulae, descantus or punctum. Leonin's organa often involved astonishingly long melismas over extraordinarily extended notes, probably aided by the organ which had been introduced to Europe from Byzantium by Charlemagne.

1 Organum, at that time, was the generic word for any kind of musical instrument, the particular word for the organ and also came to be used for the art of combining melodies.

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Perotin, who replaced Leonin in 1180, added a third and, in a few cases, a fourth voice (triplum and quadruplum). He also composed processional pieces, called conductus, which were distinguished by a chordal, note against note style and used a newly composed tenor and text. The procedure for writing a conductus was given by a medieval German theorist as follows:

> "First, choose the loveliest melody you can think of, then write a descant to it in the manner already shown. If you wish to add a third part, look carefully at the melody and the descant, so the third part will not be discordant with them both together."

With this method any discord is permissable so long as any two parts are concordant.

During the twelfth century the important schools of polyphonic writing arose at Chartres, St. Gall, Cividale, Padua, Winchester and Worchester. Inevitably authority was unsympathetic, with the abbots of Rievaulx, for instance, raising objections to organum in 1166. Despite this, the thirteenth century saw the growth of the motet and the wedding of sacred polyphonic techniques to secular song.

The motet (from motetus; having words) was the result of the application of the principles of troping to polyphonic music. New texts were added to the textless clausulae of the Notre Dame type, which were themselves based on the textless melismas of the Gregorian cantus firmus. In its.

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simplest form this means that the motet would have consisted of a few long drawn out syllables from Gregorian chant in the lower part (tenor or cantus firmus) and a separate text in the upper part, (duplum or cantus superior). With the addition of a triplum, with its own text, the motet became truly polytextual, gradually moving away from its function as an elaboration of the Gregorian repetoire. Very often, however, no clear distinctions can be drawn with regard to medieval musical forms and, with small changes, a motet could become a conductus or revert to being a vocalised clausula. It differed from organum in having its rhythm rigidly organised throughout by the use of the rhythmic modes. An important aspect of the rhythmic modes was the avoidance of duple time as "tempus inperfectus," "tempus perfectus" being triple time because of the religious significane of the number three.

The new texts employed in the motet were often in the vernacular, and at the height of its development texts of a very secular nature came to be used. Fracne was the original home of the motet, but it came to be quickly established in England, Spain, Burgundy and Italy.

Thr trouvère Adam de al' Halle (c.1237-1286/7) was one of the earliest composers of secular polyphonic song. His few polyphonic rondeaux were the exception in troubador music, rather than the rule, since theirs

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An ancester of the violin in a romanesque carving.

was a tradition of monophony. The beginnings of troubador tradition are somewhat obscure. The word may derive from "troupe" for all but one of the songs of the earliest known troubadour, Guillaume IX (count of Poitiers and duke of Acquitaine), can be traced to conduct from the St. Martial, Limoges school. Their direct predecessors were the minstrels, who were probably descended from the Roman mimes and jugglers. They were called Joglars in Provence, Jongleurs in northern France and Gaukler in Germany. In contrast to the jongleurs, who were itinerant musicians, the troubadours belonged to noble circles and evolved a very sophisticated courtly art of song. They were called troubadours in Provence, trouvères in northern France and minnesingers in Germany.

In subject matter their songs were, for the most part, inspired by "L'amour courtois" and the Marian cult. In Italy the most important non-liturgical songs were the "Laude Spirituali," hymns of praise sung by wandering penitants and flagellants. In Germany the cult of the flagellants was adopted by the "Geissler" who sang very mournfull "Geisslerlieder." Troubadour song seems to have made little or no impression in England although the most sophisticated pieces of thirteenth century secular polyphony was written there. "Sumer is icumen in" dates from about 1280 and is in six parts with the four upper voices in canon.

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some medieval musical instruments including the zither, psaltry, cittern and lute.

Troubadour and trouvère songs were more formally structured than the sacred music of the era. They were also more rhythmically organised and have a quite modern major-minor sound although written in the church modes. While remaining non-polyphonic, these songs would have had instrumental accompaniment. In fact, it was in both the troubadours' and the jongleurs' development of instrumental music that their main contribution, to the music of a later date, lies.

Except for the special case of the organ, the church had frowned on the use of musical instruments well into the middle ages. The jongleurs are known to have used plucked and bowed stringed instruments and reed and flute type wind instruments. With the crusades, many instruments came to be imported from the east and by the fourteenth century the variety of instruments available included the cornet, recorder, flute, citole, rote, psaltery, guitar, portable organ, harp, shawm, bombard (large oboe), slide trumpet, natural trumpet, bagpipes, viol and even the first rudimentary keyborad stringed instruments. The earliest purely instrumental music was, of course, dance music and some of these early "estampie," which seem to have been extremely popular in the thirteenth and fourteenth centuries, have come down to us.

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ARS NOVA

Ars Nova was the title of a treatise, now known only through lecture notes, by Philippe de Vitry (1991-1361). In it he deals primarily with the old and new ways of notating motets, but the terms 'Ars Nova' and 'Ars Antiqua' crystallise the stylistic changes which took place between the thirteenth and the fourteenth century. The music of this era is characterised by the introduction of duple time, faster tempos, greater expressiveness, warmer sonorities of the interval of the third and the sixth, and by a highly intellectualised method of rhythmic organisation called "isorhythm."

With this method the melodies of each voice are broken up into exactly repeated rhythmic patterns. Since each voice had a separate pattern of differing length then superimposition called for extremely rigorous mathematical calculation and in fact De Vitry found it necessary to call in the help of the famous Jewish mathematician Gersonides (1288-1344) to solve a problem connected with the ratios between the various note values of his system. These isorhythmic patterns were often so long and punctuated by rests as to be unapparent to the listener and therefore of purely intellectual significance.

Ars Nova composers were also fond of using a strange device known as the 'Hocket' which means the breaking up of the melody into notes rapidly alternating between the voices. The word 'Hocket' comes from 'hiccup' which gives a fairly good idea of the effect of the device.

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Once again authority comes out against innovation, with Pope John XXll issuing a bull against the new practices in 1324 with the criticism:

> "They chop up the melodies by Hocket, mollify them by descant and triplum so that they rush around ceaselessly, intoxicating the ear without calming it, falsify the expression and disturb devotion instead of evoking it."

Ars Antiqua was also defended against Ars Nova in the monumental musical encyclopedia "Speculum Musicae" (c. 1330) by Jacob of Liege, but this seems to have had little effect, as composers increasingly found outlets for their work outside the Church.

For De Vitry the motet was the most important form of Ars Nova composition, and indeed it proved to be a lasting form. But, along with 23 motets from the greatest figure of the period, Guillaume de Machant (c.1300-1377) we also have 42 ballads, 21 rondeaux, 33 virelais, a Hocket, a complainte, a chanson royale and, most importantly of all, the first complete polyphonic setting of the ordinary of the Mass; a type of composition which came to have great prestige later. Machant's Mass is called the "Messe de Notre Dame."

Most of the Machaut compositions are contained in six lavish manuscripts written for such patrons as the Duc de Berry, and the Comte de Foix.

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One of the most important sources of the period is the satiric "Roman de Fauvel" (1310-1316) by Gervais du Bus, into which 130 musical works have been inserted some of them dating back for 150 years. Five motets attributable to De Vitry are included in this work.

Ars Nova was quickly adopted in Italy where music had up to this time been in a somewhat primitive state. The forms developed to the greatest extent there were the madrigal, caccia and ballata. The 14th century madrigal has no practical connection with its more famous 16th century namesake. It was usually written for two voices and consisted of a few short stanzas followed by a one or two line 'Ritornello'. The 'caccia' was a canonic madrigal with three voices related to the French 'chase' which always described exciting scenes very realistically, imitating the barking of dogs hunting, shouts, and fanfares of trumpets.

The two principal figures of 14th century Italian music were Landini (c.1325-1397) and Johannes Ciconia (c.1335-1411). Landini was Florentine and the first in a long line of blind organists. He was famous as a virtuoso on the portative organ. His music is in a characteristically Italian cantilena style. Johannes Cicconia was from Liege and was first in a long line of important composers from Burgundy who came to dominate Italian music in the 15th century.

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Instrumental music became popular in the 14th century and while not a great deal of composed instrumental music was written down, many transcriptions of vocal music were made for wind, string and keyboard instruments. On the development of music in the Middle Ages towards its ultimate manifestation as a self-contained and purely abstract art Ernst H. Sanders had this to say:

"The musical tradition produced by western civilization gradually gave rise to the unique concept of music divorced from its intrinsic ancillary functions: ultimately music no longer needed to serve as an ingredient of processes such as ritual, ceremony, work, dance or recitation of poetry. The evolutionary accumulation of creative genius that yeilded such autonomous genius as fugue, sonata and symphony was conditioned by three interrelated factors -

1) Musical notation
2) The exploitation of various simultaneous combinations of more than one sound, and
3) The fashioning of discreet, more or less individualised, musical artefacts."

("Polyphony and Secular Monophony from the ninth centry to 1300").

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THE RENAISSANCE.

Between the beginning of the fifteenth and the end of the sixteenth century music changed beyond recognition, yet this change was the most gradual imaginable. At no point was there a sudden break with tradition but there was, rather, a slow accumulation of new recourses and a gradual evolution away from the modal system towardes modern tonality.

During the fourteenth century France had led the musical world of Europe with de Vitry's and Machaut's ars nova. In the next century it was Burgundy which produced the greatest composers. As Burgundy was a somewhat shortlived state, these composers are most often referred to as the Franco-Flemish composers. For a brief period, however, the European stage had been dominated by an Englishman. Before the emergance of the Burgundians, John Dunstable (c.I370-I453) had brought the traditionally sweeter English sonoroties to French ars nova rhythmic organisation combined with Italian tunfullness and became, in the I420s and I430s, the most famous composer in Europe.

The Franco-Flemish tradition was to be a long one with six distinct generations of composers discernible. The most important of these are listed below.

I.fl. I420-I460	Guillaume Dufay	c.I400-I474
	Gilles Binchois	c.I400-I460
2.fl. I450-I490	Johannes Ockeghem	c. I430-I495
	Antoine Busnois	d.I492
3.fl. I480-I520	Josquin des Prez	c.I440-I52I
	Heinrich Isaak	c.I450-I5I7
	Jacob Obrecht	c.I453-I505
4.fl. I520-I560	Cipriano de Rore	c.I5I6-I565
	Phillippe de Monte	c.I52I-I603
5.fl. I550-I590	Nicolas Gombert	c.I500-I556
	Orlando Lassus	I532-I594
6.fl. I580-I620	Jan Pieterzoon Sweelinck	c.I562-I62I

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Johannes Ockeghem with his choir.

The first generation of Franco-Flemish composers, Dufay and Binchois, owed a great deal, in their music, to Dunstable. They used a device, called 'fauxbourdon' involving a succession of six-three chords which Dunstable had helped to make respectable. The influence of Landini and the smooth Italian style was also felt. Most of the Franco-Flemish composers were very international figures, taking up positions in chapels and courts from Spain to Poland and exerting wide influence. They came to completely dominate the musical life of Italy for more than a century.

Dufay was the master of all the forms of music of his day, but it is in his religious music that he excells. Dufay, in fact, led religious music back into the central position it had enjoyed prior to its great loss of prestige in the fourteenth century. Dufay's early work is very much within the ars nova, isorhythmic idiom but later he begins to use an embryonic form of imitative counterpoint. In this form of writing all voices assume equal importance. The tenor becomes one voice among many and the counter-tenor gradually assumes the role of a base-line. The result is a much more human style of music from which the expressive powers of harmony begins to emerge.

Binchois was primarily a composer of secular music. He was a little more open to English influence than Dufay but more conservative in his use of rhythm and form. His fame rested more on personal charm than on any contribution to the language of music.

Ockeghem stands at the crossroads between the music of the middle ages and that of the modern world. In the middle ages the parts, in polyphonic writing, had been distinguished from each other,more by text, rhythmic charecter and function than by pitch. With Ockeghem the parts begin to pull away from each other in pitch making melodic equality more possible With Busnois , he composed the first examples of imitation in all parts which have come down to us. Imitative counterpoint was to become the dominant technique of composition up to the time of Bach. With this method the seperate composition of each voice becomes impossible and musical verticality, or harmonic writing, becomes central. This is slightly paradoxical as imitative counterpoint seems to emphasise the

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horisontal, or melodic, aspect of music, to the ear at any rate. Ockeghem experimented very much in his work, with the more complex ramifications of imitative counterpoint and with such intricate polyphonic devices as canon, inversion, retrograde, augmentation and diminution - where the imitation of the melody is sounded upside down, backwards, or in longer or shorter note values. In his "Missa Prolationum" only two of the voices are written out as the other two may be derived from them by different time signatures. Another of his masses, the "Missa Cojusvis Toni", has no clefs and can be performed in any of the four authentic modes. His "Missa Mi-mi" is based on a descending fifth, E - A, which is outlined in the bass at the beginning of each section. This most cerebral of composers' subtle contrapuntal feats , strangely enough, don't prevent him from writing some of the most warm and humane music written up to his time,,and his famous "seamless" melody has great beauty.

Busnois, like Binchois, was a composer of mostly secular music.With him imitative counterpoint comes to predominate. Of his few religious works which survive one is a mass based on the popular song 'L'Homme Arme'. In it he marks the second and fourth parts 'contratenor altus' and 'contratenor bassus'.These were soon shortened to the modern 'alto' and 'bass'. It is worth mentioning that Dufay had composed the first mass on 'L'Homme Arme'. Ockeghem also composed one on the same melody and a mass on 'L'Homme Arme' was to become almost 'de rigueur' for aspiring composers up to the time of Carissimi in the seventeenth century. Busnois' secular chansons are often in a cantilena style of polyphony in which the treble dominates and the other parts take on the nature of an accompanyment.

Josquin des prez stands out as one of the great composers of all time. He was the first composer whose works continued to be performed long after his death. Dunstable, Dufay, and Binchois were given legendry status while their music ceased to be performed. Even their names had become garbled by 1613 when Johannes Nucius paid his perfunctory respects to 'Dunxtaple, Dupsay, and Binchoy'. Josquin's works were being copied and printed well into the seventeenth century.

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In his earlier compositions Josquin strove to integrate the cantus firmus into the texture of the music. In his mature works total equality was at last achieved.His religious works are in the modern four parts; soprano, alto, tenor and bass. Josquin made great use of the 'programmatic' qualities of music in which the music falls to express the idea of descent, humiliation, or fall, or , for example, he might resort to the trio in fragments relating to the trinity or to the unison for words like 'unigenitus'.He also made use of the major or minor chord to express joy or sorrow. These chords only appear when writing in triadic harmony - harmonies built on the interval of the third - and Josquin can be seen as one of the earliest exponants of this thoroughly modern harmonic writing,now, alas, become almost a musical epidemic.He was a probable pupil of Ockeghem and derived obvious enjoyment from raising and solving the most complex problems of composition. One of the most important advances in the means of music in the fifteenth century was the achievement of full choral polyphony. Before this time polyphonic sections had been sung only by skilled soloists. In part writing for soloists discords are not so obvious because of the different 'colour'OF each voice, whereas in choral polyphony a discord stand out and must be accounted for and controlled. So called 'controlled dissonance' is an important element in Josquin's music, keeping the music moving by the avoidance of the full cadence.

Isaak and Obrecht didn't add anything essentialy new to the Franco-Flemish tradition , But enriched and spread it. Isaak worked for a long time at the court of Lorenzo de' Medici in Florence and later as court composer to the Emperor Maximilian I in Germany. Philippe de Monte and Orlando Lassus also brought the Franco-Flemish tradition to the imperial lands; both spending some time in Italy beforehand. De Monte was Isaak's successor at the head of Maximilian's renowned musical establishment and was an immensly prolific composer, especially renowned for his Italian madrigals. Lassus was, however, an even more prolific composer and his 1580 religious works and 800 secular compositions make him perhaps the most prolific composer of all time.His madrigals combine a Flemish mastery of counterpoint with an Italian finesse and vivacity. He made use of the new powers of music to express the whole gamut of emotion from leaping high spirits to

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The Emperor Maximilian among his musicians.

brooding melancholia and despair. His religious work is more austere than his secular chansons and display a profoundly mystical piety.

Germany, of course, had its own traditions and, in particular, developed instrumental music to a much greater extent than any other country, especially music for the organ. PaulHofhaimer was regarded as the greatest organist of his time. Like the Italian Landini and many other organists, Hofhaimer was blind. What little music of his that has survived is flawed, unfortunatly, by over frequent cadances. A difficulty in extending a musical phrase for any length is a charecteristic of most early polyphony. Conrad Paumann, another blind organist, is chiefly remembered for his treatise on composition with special referance to the orgam, 'Fundamentum Organisandi'. Arnolt Shlick (1455-1525) was yet another blind organist and began to develope a truly instrumantal style moving away from the transcription of vocal writing to the organ.

By now we have come to the extremely complex ℅ period of the late renaissance. At the same time that the Mass came to have great importance the motet was given a new impetus, especially by the Franco-Flemish composers, and secular music developed an almost independant tradition with the rise of town bands, dance music and such domestic forms as the sixteenth century madrigal. The proliferation of different forms and the emergence of a popular style of 'learned' music was a result of the introduction of printed music and the emergence of a wealthy middle class. The chanson, whose music depende to a large extent on the verse structure of the poetry, was developed as just such a popular form by Clement Janequin (1528-1560). The lute was the most important domestic instrument and many transcriptions of vocal works were published for that inst instrument. There was also music published for the keyboard stringed instruments but these were still rather rare at this time.

The sixteenth century madrigal was more concerned with the emotional qualities of the text than with verse forms. While the first known madrigals were by Constanzo Festa (d.1540) and Philippe Verdelot (d.1547), the first masters of the form were Jacques Arcadelt(c.1504-1567) and Adriano Willaert (c.1500-1562).

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Willaert was the maestro di cappella at St. Mark's, Venice , and had a profound influence on all later Italian composers, though himself a Dutchman. He was the first to use chromaticism extensively in the madrigal. Venice had one of the largest musical establishments in Europe and Willaert made use of his unique resourses to produce a special Venitian style charecterised by a concentration on musical colour. He would experiment with combining instruments and voices in different ways and playing one choir,with its own particular instrumantel accompanyment, off against a differently "coloured" one in an antiPhonal manner. Willaert's successer Andrea Gabrieli, extended this to writing for three and even four choirs.Giovanni Gabrieli also worked at St Mark's and wrote complete orchestral composition using contrasting timbres and textures to great effect. The last of the great Venetian composers was Monteverdi who used a baroque style in the Venitian idiom.

The last composer in the Franco-Flemish tradition was Sweelinck who, contrary to the normal practice of musicians from these lands, stayed at home, spending most of his life at Amsterdam. He composed vocal works in all the forms of the time but it was his particular achievement to have introduced a new cohesiveness of organisation into keyboard music.

Palestrina (born Giovanni Pierluigi c.I524-I594.) is the crowned head of Catholic church music and became the exemplar for academic counterpoint up to the dissolution of tonality. All his writing is vocal and still makes use of the cantus firmus . He was in the right place at the right time when the Council of Trent made its proscriptions with regard to music. His musical inspirationwas fully in symphathy with the new requirements and his music is regarded as the perfect model of the style demanded by the council.

After Dunstable, in England, the important composers are Taverner, Tye and Tallis. Of these Thomas Tallis (c.I505-I585) was by far the greatest. He isrembered for his contribution to the developement of keyboard music but is most justly famous for his five part Lamentations of Jeremiahandfor his great tour de force Spem in Alium a motet in forty parts of truly outstanding poignancy, power and beauty.

SOME RELATIONSHIPS BETWEEN THE VISUAL ARTS AND MUSIC UP TO THE RENAISSANCE

"The only really surprising thing would be that sound could not suggest colour, that colours could not give the idea of melody, and that both sound and colour together were unsuitable as media for ideas; since the all things always have been expressed by reciprocal analogies, ever since the day when God created the world as a complex indivisible totality."

Baudelaire in 'Richard Wagner and Tannhäuser in Paris.'

Synaesthetic experience is notoriously subjective and difficult to articulate, yet it is enshrined in language itself. The exchange of vocabulary between the visual arts and music is not a particularly new phenomenon. Even in the thirteenth century music could be thought of in architectural terms for example: "The tenor, however, is that part upon which all others are founded, just as the parts of a house or a building are erected on its fundament." Johannes de Grocleo (d.c.1300)

Long before this, of course, a generalized vocabulary of aesthetics was used freely between all the arts ; which fact speaks for an intuitave appreciation of the equivalences between the arts from the earliest times. Measured space can correspond exactly with measured time only in the abstract; that is to say, in mathematical ratio or proportion. In the case of music the most important measure is not of duration but of pitch. The ratios of the musical scale, as discovered by Pythagoras, have been used extensivly throughout history as a canon of proportion for the visual arts. Christopher Headington, in the Bodley Head History of Music, is a little vague, however, with regard to their use in ancient Greece: -

"Greek architecture and music both owed a debt to the researches into numbers made by Pythagoras. Fairly recently a greek writer has pointed out a close relationship between the placing of temple columns and the Pythagorean theory of musical scales."

In The medieval Architact, Colin harvey is much more conclusive about their use in the middle ages: -

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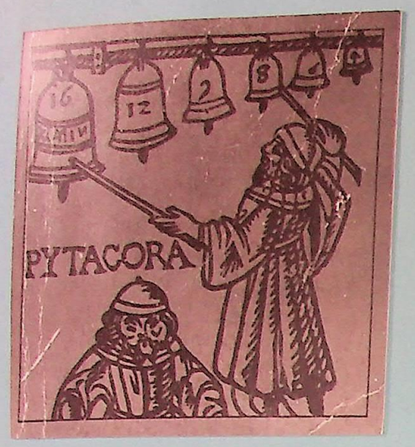

Pythagoras and the musical numbers in a fifteenth century woodcut.

"We have seen that Professor Conant's detailed excavation and analysis at Cluny have demonstrated the existance in the plan of a modular unit of 5 Roman feet, and has further indicated the extent to which the plan, designed on this basis, exemplified theories of mathematical 'perfection' in numbers as set forth by Isadore of Seville: Nave span 35 R ft. = I-6-28; dåvisioning of the axis of the rectangular part of the church, 53I R ft.= 6-I-28-496. The apse was based on the symbolic number 7. Plato's "succesion by squares" (I,3,9,2⁄7.)Determined the lines of the main portal. More important was the use of the Pythagorean series of musical numbers (2,3,4,6,8,9,I2.), recognized by medieval Philosophers as fundamental to the order and stability of the universe, and to beauty in the arts. A phrase of Böethius, dependant on Plato and Augustine implies that geometry makes visual the musical comsonances. This is true of Gunzo's Cluny: a list of all its important dimensions is the result when the modules are multiplied, respectively, by the series of musical numbers."

This is, in part, merely mathematical mysticism;"lucky numbers" as it were, but it could be argued that there is a certain rationale behind the use of the musical numbers in proportion: -

"The senses delight in things duly proportioned as in something akin to them for the sense, Too, is a kind of ratio as is every cognative power."

Thomas Aquinas.

In the case of a public building, once purely functional proportion has been eschewed, some sort of universal criterion must be adopted. Good taste is not good enough.

Strict use of one unit of measurement tends to lead to a stiff grid--like quality. On the other hand a square can be apprehended more readily than a visual representation of the ratios of the musical scale. We can tell more easily if a square is "out of tune"so to speak. Nevertheless it seems reasonable to believe that the musical numbers can be apprehended by the "soul" in direct perception through anothers of its "windows" besides the ear since they can be so readily grasped by the intellect. The psychology here is, admittadly, primative but

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Of the few remaining artifacts from Cluny the above are from a set of eight capitals representing the musical modes.

that very fact points to a deeper reason for the use of the musical numbers in that their apprehension visually, on however subliminal a level, would directly support the concept of an indivisible soul.

"Do you not know that our soul is composed of harmony and that harmony is only produced when proportions of things seen or heard are percieved simultaneously."

Leomardo da Vinci.

Religious art is directed as much to the glory of God as it is to the aesthetic sensibilities of merely human souls. Abelard suggests that "as Solomon's temple was pervaded by the devine harmony, the proportions were the same as those musical consonances used by God the creator, and that it was this "symphonic" perfection which made the cathederal the image of Heaven."

As we have seen Pythagoras and his brotherhood saw the musical ratios as fundamental proportions in the universe. From Böethius onward this idea of the "Harmony of the Spheres" was widespread. Plato had said : -

"Just as our eyes are made for astronomy, so our ears are made for music.....the two are sister sciences"

and in the medieval system of liberal arts, music is one of the quadrival sciences along with Astromomy, Geometry and Arithmatic.'Musica' at this time meant only musical theory. For the medieval theorist it was the task of "Musica instrumentalis", the music of human voices and instruments, to make audible the "Musica Mundana" and the "Musica Humana", the mus ic of the macrocosm and of the microcosm. Even during the renaissance these Quintessentialy medieval ideas were not rejected out of hand. The humanist Fileflo found it good that Philosophers should approve of music, "because our mind, the sky, nay the entire universe consists of the proportions of music."

It seems as though the renaissance love of numerical proportion was a more practical affair than medieval delight in obscure ratio. The mathematical ratios of some medieval constructions are of such a kind as to be visible only to the very cleverest of Gods. Exactly the same is true of the mathematics behind some complicated isorhythmic motets.

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Renaissance artists, on the other hand, wanted direct results. Alberti puts it thus:-

"A harmonious ratio in design is one which, when expressed as a musical harmony, yields a pleasing concord."

In 'De Re Aedificatoria' he is more proscriptive:-

"The same numbers, by means of which the agreement of sounds affects our ears with delight, are the very same which please our eyes and mind, and therefore we shall borrow all our rules for the finishing of our proportions from the musicians, who are the greatest masters of these sort of numbers."

As Alberti himself had a preference for commeasurable ratios - the facade of St. Maria Novella has the ratio I - 2 - 4 - it is hard to say where one might find examples of the practieal application of this 'borrowing' although it is possible that they might be found in the very elaborate proportions of Bramante and Palladio.

It is more clearly in the way ratio was used than in the actual ratios used that music and architecture occupied common ground. For the medieval artist there was little need for any of his intellectual efforts to be apparant to the human observer or listner. God was concieved of as having direct perception of what man could percieve only intellectually, in the same way as man has direct perception of the musical consonances and th the simple mathematical forms. Similarly the texts of a polytextual motet were impossible to follow and the images in medieval stained were impossible to make out, and yet it is essential that they both be there.

2"The role of poetry in a medieval motet is best defined by analogy with the stained glass windows in a gothic church. The images in the poetry of the upper parts relate to the music in the same way as the stained glass windows (and the events they depict) relate to the building of which they are a part. The music does not accompany, elucidate or intensify; but the poetry illuminates and reflects the structure of the music".

Ernest H. Sanders.

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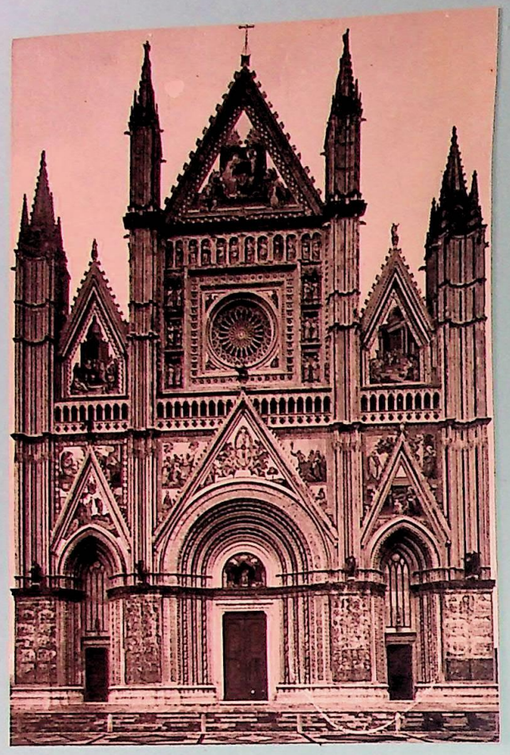

A strikingly clear example of Italian
"ad triangulum proportion"

In the Gothic period there were two systems to determine the figures upon which proportion would be built. In the south of Europe proportion was almost universally determined "ad triangulum" & according to the equilateral triangle, and in the North of Europe it was "ad quadratum", according to the square, which was used. It is interesting that in Italian music triple time was predominant for a very long time, whereas duple time was a northern phenomenon. While on the subject of such very general parallells between music and architecture it is worth mentioning that while it is the most broad general charecter of classical architecture to be seen to obey the law af gravity,and the most general characteristic of medieval and Gothic architecture to be seen to defy it, it is an essential factor at the basis of Greek music that the scale is thought of as descending, and of christian music that it ascends. This seems to be, in both cases, ~~of~~ the effect of a particular world-view, although I will grant the difficulty in believing that metaphysics could penetrate so deeply.

On the actual perception of similar 'feelings' or 'moods' in the visual arts of, for example , the Carolingian period and Gregorian chant, no objectifying evidence can be given but some perceptible qualities are parallelled between the arts in their evolution after this time.The most obvious of these is an almost graphically linear increase in elaboration of both music and the other arts. Many parallels, in the visual arts, have been put forward for the introduction of elaboration by means of vertical intervals in music. The most illuminating of these, I find, is the articulation of space in Romanesque and gothic illumination and architacture.

2/ "What distinguishes Gothic shafts and ribs from their Romanesque predecessors is - besides and beyond all technical differences - the simple fact that they are NO LONGER CONCIEVED AS relief forms integrated with and aesthetically predicated upon the walls, piers, and webs to which they are attached; they have crystallized, instead, into what the French graphically call 'colonnettes' and 'nervures', independant tubular

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forms which contrast with the walls, piers and webs as plastic entities having an axis within themselves."

The way in which Gothic tracery moves with maximum freedom within the limits of its structural nature is exactly parallelled by the freedom of the melismas in melismatic organum and later in the more organized isorythmic motet we may see a parallel with the increasing concern with mathematics in late Gothic architecture.

Earlier Christian art and music are firmly-centered around the liturgy of the Mass.IN that sense their cause and function are exactly the same. Dom David Knowles has characterized Gregorian music as : "wide in its range of expression, majestic, spontaneous and pure in its melody, austere beyond all other forms of the art and extremely subtle and sophisticated in its technical perfection." Almost the same words could be a applied to Romanesque architecture and still make good sense.
Paul Henry Lang's paragraphs on the relations between Gregorian music and Romanesque architecture in "Music in Western Civilization" are worth quoting in full: -

"The intimate connection between Gregorian music and Romanesque art becomes evident when we examine the stylistic phenomena in Romanesque architecture and compare them with the music of the period. Springing from Roman and Byzantine traditions, both 2/ architecture and music retained and developed the charecteristic traits which had only showed tentatively in late antiquity, such as the turning away from the plastic and a penchant for the ornamental. These elements remained more or less dominant, though blended with eastern influence and with Celtic and Lombard elements which lent the barbaric vigour that so vitalize Romanesque art. The primitive Norman and Anglo-Saxon carving was surpassed by the more decorative Celtic expression, and this was paralelled by the influence of music in the Carolingian period."

"Wherever we look, whether at the "Summae" of the scholars, the

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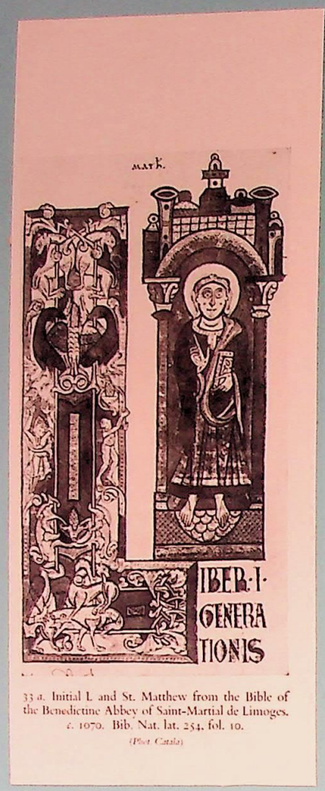
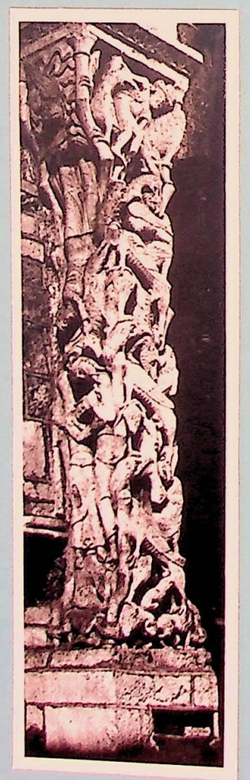
2/ Erwin Panofsky. Early Netherlandish Painting.



33 a. Initial L and St. Matthew from the Bible of the Benedictine Abbey of Saint-Martial de Limoges. c. 1070. Bib. Nat. lat. 254, fol. 10.
(Phot. Catala)

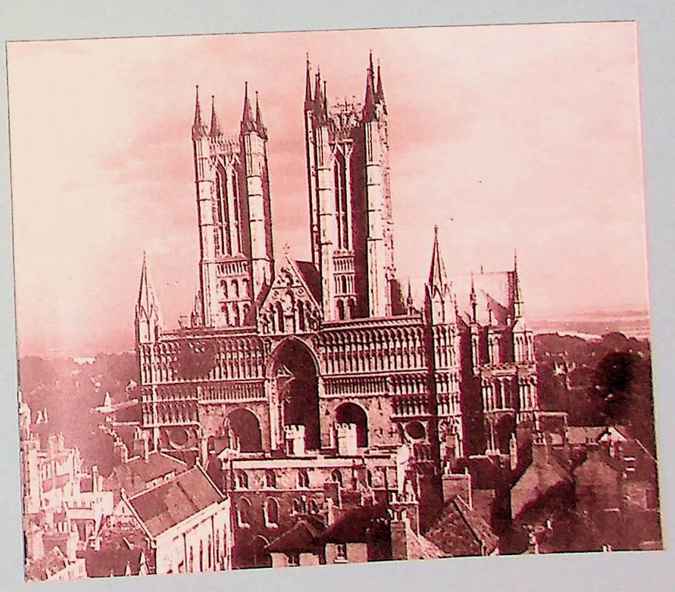
An example of Limoges enamel work and manuscript illumination. The Mullion at souillac (below) is stylistically indebted to Limogian illumination.



cathederals of the architects, the hymns and songs of the musicians or the philisophically serene chronicles of the historians, we behold that gravitas which, as a legacy of Rome's most glorious times lends to this period a truly aristocratic majesty. This majesty was equalled by an inner force which we used to see only in the mighty edifaces of Romanesque architecture, because the scientific tracts and the major part of the literature retained only the interest of the scholar. But do we really appreciate the meaning and function of the great cathederals if we exclude an essential element of Romanesque art and life which filled their naves with sounds and melodies."

It is probably no coincidence that the first school of polyphonic composition at St. Martial in Limoges also produced a very important school of interlace decoration in enamel and illumination. This style owed a great deal to the Hiberno-saxon style and, it will be remembered, it is in that part of Europe that polyphony is thought to have originated. This interlacing could almost serve as a conceptual notation for the type of polyphony practiced here.

A very striking feature of music after the Gregorian period, is the way in which all the new types of elaboration, such as troping and organum, were built on the foundation of pre-existing chant. This is precisely paralleled by the way in which many Gothic structures were raised on old Romanesque foundations and sometimes simply added to ROmanesque buildings. Lincoln Cathederal is a good example of this process.



APPENDIX A

GREEK MUSICAL THEORY

Although they know of the octave, which they called 'diapason,' the basic unit of the Greek system was the tetrachord. This was the interval of a perfect fourth embraced by 4 notes and therefore subtending three intervals. The upper and lower notes of each tetrachord were fixed and the two inner notes could vary according to the three genera. These were -

1) Diatonic — in which the three intervals subtending the tetrachord were (reading downwards): tone, tone, leimma (the leimma is slightly smaller than the modern semitone);

2) Chromatic — in which the intervals were: minorthird, semitone, semitone;

3) Enharmonic — in which the intervals were: di-tone (two tones), quater-tone, quater-tone; (the ditone is slightly larger than the modern major third).

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The Greek modes or 'harmoniai' were an extension of the tetrachord. Besides their use of quatertone, ditone and leimma a major difference between modern and Greek musical practice was the fact that they counted their modes downwards; a fact of much more than theoretical significance as this means the root note would be the upper one. The primary mode was the Dorian which is made up of the tetrachord E-B (in modern notation) to which the similar tetrachord A-E has been added.

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If A is taken as the root note the result is the Hypodorian or Hyperdorian mode according as to whether it is above or below the primary Dorian mode.

A G F E D C B A G F E D C B A - third A added to complete the system

Hypodorian Hyperdorian

The intervals subtending the Dorian tetrachord in the diatonic ganus are (downwards) tone, tone, leimma, but a tetrachord of the interval of a perfect fourth can also be subtended in two other ways, i.e. tone, leimma, tone and leimma, tone tone. These made, respectively, the Phrygian and

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the Lydian modes. With their Hyper modes this gives a mode beginning on every note of the scale except B and this became the mixolydian mode.

Here are the modes in table form:-

Root Note	Mode
A	Hypodorian
G	Hypophrygian
F	Hypolydian
E	Dorian
D	Phrygian
C	Lydian
B	Mixolydian

There was much theorising in Greece about the 'Ethos' of the different modes. The Dorian was preferred as virile, the Phrygiun was thought ecstatic and emotional, and the Lydian was considered intimate and laxivious. Plato goes into the subject at some lengths in his "Republic."

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APPENDIX B

The Church Modes

There are eight Church modes. These can best be considered to be made up of a pentachord and conjunct tetrachord. When the pentachord is lower the mode is called authentic and when the tetrachord is below the mode is called plagal. For example:-

D E F G A B C D - Authentic

A B C D E F G A - Plagal

They are all diatonic. They are classified according to their 'Finalis,' the usual note upon which a melody in any particular mode will end. The names of the Greek modes were applied to the church modes. The attributions were hopelessly incorrect but are still used along with latin names. To make up the 8 church mode names, a new Greek name had to be invented. This was the 'Hypomixolydian' mode which is the same as the (church) Dorian except for the 'finalis.'

In the following table the dominant note of each mode is underlined and the finalis is in capitals.

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1.	Dorian	Protus Authenticus	D e f g a b c d
2.	Hypodorian	Protus Plagalis	a b c D e f g a
3.	Phrygian	Deuterus Authenticus	E f g a b c d e
4.	Hypophrygian	Deuterus Plagalis	b c d E f g a b
5.	Lydian	Tritus Authenticus	F g a b c d e f
6.	Hypolydian	Tritus Plagalis	c d e F g a b c
7.	Mixolydian	Tetrardus Authenticus	G a b c d e f g
8.	Hypomixolydian	Tetrardus Plagalis	d e f G a b c d

The dominant should be a fifth above the root note but is displaced in the authentic modes, and correspondingly in the plagal modes, to avoid the dreaded interval of an augmented fourth which came to be known as the 'Diabolus in musica.' The use of the accidental B^6 was also permitted for the same reason. This system is highly artificial and was only imposed on Gregorian chant long after the whole repetoire had been established.

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