

THE DEVELOPMENT OF MUSIC NOTATION

Notational Practices of the Middle Ages and How They Reveal A Changing Philosophy of Music

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Most young musicians are taught to read music as early as they learn to play or sing. The first few pages of any beginning band book show a circle on a set of lines and spaces, declaring, “This is an A.” Of course, the circle is not an A. “A” is what we call the sound that vibrates at 440 cycles per second, but teachers point to the picture on the page and call it “A”. Written music and sounded music are rarely distinguished in the classroom setting. Around 600 BCE, Isidore of Seville is quoted saying, “For unless sounds are held in the memory by man they perish, because they cannot be written down.”¹ Isidore lived in a time long before any practical means of notating music had been invented; to him, the idea of writing down music was incomprehensible. However, written music and music as an aural experience have developed side by side for thousands of years of music history. Just like language existed before letters, so did music predate the written notes, but modern musicians often view them as one in the same.

The habit of treating music as an aural and visual phenomenon is the result of innovations by musicians from centuries past. Church musicians throughout the early Middle Ages memorized the entire cycle of church music for the year, often spending over a decade in the process. They learned by rote and memorized by heart. The first notation in the tradition of Western music developed in this climate, and the breakthrough of writing down sounds led to many more. Our history books include the names of people who are often considered to be champions of notational history: Guido of Arezzo, Leoninus, Anonymous IV, Franco of Cologne, and Philippe De Vitry. They and their colleagues catalogued and innovated music notation so that it could fit the complex, developing music of their respective time periods. The evolution of musical notation between the tenth and fourteenth centuries as it developed in the Holy Roman Empire reveals conclusions about ancient music as it progressed through neumatic

¹ Thomas Forrest Kelly, *Capturing Music: The Story of Notation* (New York: W. W. Norton & Company, 2015), 26.

notation, pitched neumes, modal rhythms with ligatures, note shapes designed to determine rhythms, and prolations. Through an understanding and exposition of these practices, it is clear how these developments in notational methods reflect a changing philosophy of music in the Middle Ages.

Prior to the development of neumes, Charlemagne became the emperor of what would later be known as the Holy Roman Empire. Charlemagne was the son of Pippin the Short who had sought to spread the tradition of Gregorian chant over his entire empire after a visit from Pope Stephen II.² Charlemagne likewise spread this tradition of chant music, attributing the Gregorian chant dialect to the ancient Pope Gregory the Great. Having a common body of music for churches over a wide, diverse empire was a unifying factor in Charlemagne's empire. However, there were no notational practices in the empire at this time, so all of the chant had to be transferred by rote. Abdy Williams, music historian, writes, "At some time or other, it is not known when, the teachers of Gregorian music began to make use of the Greek accents as *memoriae technici* for the melody."³ He goes on to describe how church clergy-musicians applied these marks from Greek rhetoric to their music. The Greeks, having cultivated the art of public speaking, used markings on their lengthy texts to pictorially show inflection of the voice. Gregorian chant singers integrated these marks to remind themselves of the inflections in their music. When referring to a 4th century text, Williams says that, "the different colour of the ink (of the neumes) shows that they are of a later date than the book."⁴ Both the fact that neumes developed from Greek accent marks and that they were paired with old texts demonstrates an important aspect of archaic music. The ancient musicians unswervingly paired their notation

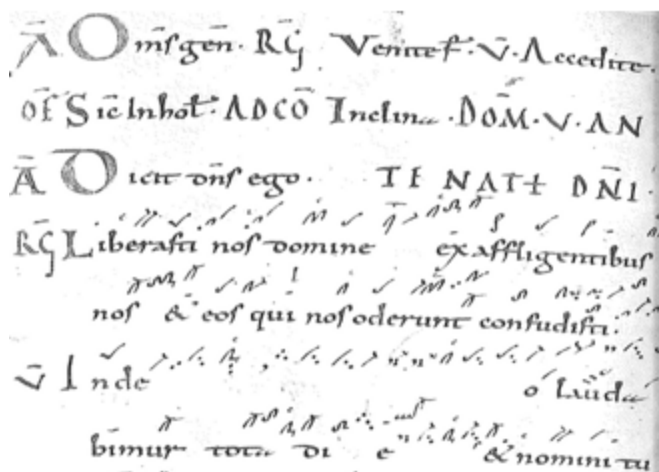
² Peter Burkholder, Donald Grout, and Claude Palisca. *A History of Western Music*, 9th ed (New York: W. W. Norton & Company, 2014), 29.

³ C. F. Abdy Williams, *Story of Notation* (London: Walter Scott Publications, 1903), 52.

⁴ Williams, 52.

with text and textual practices. Music was a means in the church to communicate the text of a scripture or creed to the adherents. Most texts, prayers, and confessions of faith for the church cycle were sung. It remains unknown who first inscribed these Greek rhetoric symbols above the texts of chant; they probably used it as a memory device, not as a planned innovation in music notation. However, their contribution reveals how the ancients viewed music and text as a homogeneous experience. Music was the servant and companion of the text, and so was the most ancient form of music notation. This is shown in current phrases about music; people can “read” and “write” music.

This early neumatic notation can be visually beautiful, as seen in Figure 1, a manuscript



of the Gradual *Liberasti nos* from the ninth century.⁵ When it is broken down, it is evident that certain symbols represent specific patterns of movement. For instance, a *punctum*, which looks like a dot on the page, tells the singer that this note is below the one that preceded it. Other symbols

showed complex and multi-pitch patterns of movement. The ancient notators of music, being unable to plot precise pitches, were not seeking to write exact notes like stepping stones through a river of sound. Rather, what they were notating was direction and progression. Rather than showing the stepping stones, their notation expressed the spaces in between the landing points. Kelly postulates concerning this practice: “am I writing individual notes, or am I writing *motion*, (that is, the perceived space and direction *between* notes)...It’s about the journey, not the little

⁵ Carl Parrish, *The Notation of Medieval Music* (New York: Pendragon, 1978, Plates page 2.

stops along the way."⁶ This highlights an important concept in the ancients' philosophy of music that differs greatly from modern perceptions. Current notation with dots and spaces on a staff plot exact notes and their relationships to each other. It is a logical list of steps to complete a goal. However, ancient neumatic notation is more like signposts that merely point in the correct direction. It depicts a continuous line of sound and the movement of that sound, much like the wind blowing between trees or water relentlessly flowing through a creek. The Medieval perception of music seems to be more flowing and forward moving than the modern note-by-note approach to reading music.

Guido of Arezzo changed everything in the early eleventh century when he made the notation of precise pitches possible. Guido began by putting one line over text that showed the pitch C and placed neumes around it. Eventually, a line for F was added above the C, and they were colored. He placed neumes metrically and precisely in respect to these lines to show the exact pitches. Although Guido could notate pitches with specificity, he still used the neumes that showed conjecture. He was in between two schools of thought. That these clergy-musicians began reading and writing exact notes demonstrates an important change. Musicians began to consider music more by specific notes and the relationships in between them, eventually leading to independent lines in polyphonic works of music.

Guido's innovation also reveals the inception of another change. In his *Micrologus*, Guido proclaimed, "Some of (the choir boys), trained by imitating the chord, with the practice of our notation, were within a month singing so securely at first sight chants they had not seen or heard."⁷ In this situation, a pupil would require their teacher only as long as it took to master the

⁶ Kelly, 48.

⁷ Guido of Arezzo, translated by Warren Babb, Ed. Claude V. Palisca. *Hucbald, Guido, and John on Music: Micrologus* (London: Yale University Press, 1978) 58.

notational method. The student becomes capable of learning a chant melody on their own, in a private room with a book of neumes. Although learning music by rote continued, there was now a potential replacement. Guido's development led both to the modern concept of "reading" music as one would read a book and the fact that most mature musicians learn music not by rote but by studying a page. The break from a purely oral tradition cannot be overestimated. It meant music could become a private experience or study. It led to music becoming a written discipline rather than just an aural one. This individuality that became possible in music would continue to shape musical practices and philosophies for centuries to come.

Although the finer points of staff notation still needed to be refined, Guido mostly solved the issue of notating pitches with precision. The next logical step was discovering how to notate rhythms. In *Micrologus*, Guido showed that polyphony existed before the great polyphonic works from Notre Dame in the twelfth century.⁸ However, Guido's polyphony existed strictly in rhythmic unity and parallel motion. The music that Leoninus and Perotinus included in *The Great Book of Organum* was on a completely different level with individual lines moving in independent, strictly patterned rhythms and distinct harmonies. Musicians in Paris like Leoninus pioneered the method of notating rhythms through groupings of notes called ligatures. A specific grouping of these block-shaped notes determined a certain rhythmic mode or pattern to follow until the ligatures showed a different mode. Ligatures likely occurred in music notation out of necessity, to depict what was already happening aurally. This necessity shows how Leoninus and Perotinus saw music in a new way. As long as rhythms were simple and in unison, why bother writing them down? Leoninus needed to write his rhythms because his music evolved to a point where independent lines expressed separate, melismatic melodies, often with different texts, as in the motets from the twelfth century. Composers like the Parisian giants of the twelfth century no

⁸ Guido, 77.

longer solely followed the elegant, simple pattern of chant melodies. The Tenor voice usually sang a standardized chant while other voices added embellishments and movement over the top. This notation reveals how composers like Leoninus and Perotinus and their contemporaries viewed music as more complex and multifaceted than their predecessors.



Figure 1

Franco of Cologne developed rhythmic notation further when he catalogued the use of notes independent of ligatures as rhythmic lengths. He used the shape of notes to depict the longs, breves, and semibreves that were commonly used for rhythmic notation as shown in figure 2, a chanson by Gaces Brulles from the thirteenth century entitled *Bone amor*.⁹ He wrote *Ars Cantus Mensurabilis* circa 1280 CE to explain the practices of measured music. Franconian notation allowed for composers like Adam de la Halle to pen motets like *De ma*

dame vient/Dieus, comment porroie/Omnes. The tenor voice sings the chant melody for “omnes” from the Gradual *Viderunt omnes* in repetitive, modal patterns while the upper voices move in fast, bouncy rhythms.¹⁰ When music was bound by the ligatures of rhythmic notation, melodies typically followed the same rhythmic mode for large swaths of time. In Adam de la Halle’s motet, however, the upper voices rarely repeat the same rhythm. This element of greater freedom and sense of time was achieved by Franco and composers like Adam de la Halle as they experimented with this new notational practice.

⁹ Parrish, Plate page 14.

¹⁰ Burkholder, Grout, and Palisca, 106.

Parrish writes in *The Notation of Medieval Music*: “This independence of the note symbols from the modes is the most important single feature of the Franconian system; it means that each note or ligature can unmistakably transmit a definite rhythmical significance by itself, rather than by its position in a note group.”¹¹ Franco demonstrated in his treatise an element of music that would become central to its philosophy: pulse. Music prior to this had a tentative sense of measured time, but it could finally be written. Franconian notation was the beginning of a definable, measurable pulse, which is clearly revealed in his methods. It was all about subdivisions. The long contained three or two breves, depending on its state of perfection, and the breve likewise contained three or two semibreves. He referred to this sense of time as a “*tempora*”, of which a long contained three.¹² *Tempora* is Latin for “time”, a concept that still dominates philosophies of music. This meant that music, like the other observable phenomenon in the world, could be measured and calculated. As music gained meter, the potential for rhythmic notation reached a peak. Furthermore, a learned musician could theoretically learn a piece of music all on their own with this notation. Musicians were becoming increasingly independent. A sense of pulse has become absolutely essential to music performance and led to many more innovations and liberties.

The idea of perfection guided the philosophy of rhythmic practices in notation for generations. Kelly describes perfection as “the grouping of three single units that make up the larger unity...Like the Trinity of Christian theology, three parts make up a whole.”¹³ Leoninus and Franco, although using different methods, made use of perfections when transcribing their

¹¹ Parrish, 109.

¹² Richard Rastall, *The Notation of Western Music* (New York: St. Martin's Press, 1982), 48.

¹³ Kelly, 95.

rhythms. For instance, a long that stood alone in Franco's notation always received three *tempora* and was thus referred to as a perfect long. If a long received only two *tempora*, then it was labeled "imperfect" and could not stand alone in the notation. It had to be followed by a breve spanning a single *tempora* to complete the perfection.¹⁴

An imperfection could only exist as long as it was completed by another note, making it a smaller facet of a perfection. In the fourteenth century, Philippe De Vitry promulgated the practice of dividing a long into two *tempura* without completing the perfection. In modern musical practice, this signifies the difference between 2/4 and 6/8, but it was a pivotal and controversial shift in thinking for medieval practitioners. Philippe expounded on the concept of prolations, the early predecessors of time signatures. Depending upon the prolation symbol, longs could be imperfect (containing two breves) and breves perfect (containing three semibreves). Any combination of imperfection and perfection concerning longs and breves could be specified at the beginning or throughout a composition. This not only freed up the composers for greater rhythmic potential, but it also signified a break between theology and music. Perfections had been considered superior because of the doctrine of the Trinity. Music of the fourteenth century, like Philippe's *Cum statua/Hugo, Hugo/ Magister invidie*, contained imperfections and was often deemed as sacrilegious. Music did not a complete break from religion, nor should it, but it was freed from some of the chains formal religion had mandated for it. As music became a more independent art form, composers and musicians could write rhythms that would be otherwise impossible. Demonstrating this mindset of change, Kelly postulates, "Perhaps there's something deeply theological—or heretical—in an intellectual order based on

¹⁴ Williams, 95.

number and relationships rather than on the doctrine of the Trinity.”¹⁵ This shift reveals that musicians were beginning the long trek to music that exists and expresses for its own sake, not as the slave of any other discipline. Perhaps all of the notational developments in the Middle Ages show how music evolved into an independent art form.

Around 1285, an unknown scholar referred to as Anonymous IV by music historians wrote a treatise concerning polyphonic music of the thirteenth century, which has also come to be known as *Anonymous IV*. Referring to this treatise in an essay from the *Journal of Musicology*, John Haines wrote, “He is contrasting written notes with sounded ones, and in so doing, the scribe of music with the performer of music. He is furthermore elevating the written note, the letter of music to a separate and previously unreached level of literary discourse.”¹⁶ Haines presents the idea that music as a written discipline was growing in authority. Musicians, composers, church officials, and notators of the Middle Ages pioneered music not just as sound but also as ink. It is a product of the Middle Ages that written notes on sheets of paper are referred to as “music”. Because of these innovations, musicians rarely distinguish between sounded and written music and often have to remind themselves that music exists outside of the realm of notation.

As more could be written down when it came to the specifics of music, musicians and composers became more dependent on sheet music throughout the centuries, making music publishing a profitable career in the Baroque period. Many of these developments transpired in a time when musicians used sheet music as a cataloguing tool, learning device, or reference rather than a performance aid. As the Middle Ages melded into the Renaissance and the Baroque,

¹⁵ Kelly, 154.

¹⁶ John Haines, “Anonymous IV as an Informant on the Craft of Music Writing,” *The Journal of Musicology* 23, no. 3 (2006): 389.

printed music became more widely circulated, aiding in the spread of musical traditions and due credit for composers. The spread of printed music was also aided by the invention of the printing press in the fifteenth century.

Haines asserts that music notators, as separate from the widely known composers and performers, worked as scribes of the great music that others composed and performed.¹⁷ With this in mind, perhaps music notators are the unsung heroes of our tradition of musical notation. They are the ones who painstakingly worked to transcribe the melodious, complicated music that they heard in an effort to accomplish the impossible: capturing sounds on sheets of parchment. These successful and diligent notators have given the modern world ample written records of sheet music. These copies of compositions are more revelatory concerning the philosophies people held about music than any treatise. The conclusions drawn from them are instructive and concrete, offering significant insight into the ways people have perceived music for over a thousand years.

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¹⁷ Haines, 376.

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