

The background features several light gray, stylized musical elements. At the top, there are various geometric shapes like triangles and a vertical bar. Below these, there are larger, more complex shapes representing musical notes and instruments, such as a drumstick and a mallet. The overall aesthetic is clean and modern.

I Sound and Notes

Music is nothing until it sounds and is heard. Music lives because it is performed and listened to. Notes written on the page will help us to understand what is meant, what is intended by their creator, but they are not the whole story. Among all the arts, music requires a special degree of involvement and participation from players, singers and listeners. There seems no limit to the varieties of human activity that music can support or accompany, no limit to the range of human emotions that music can capture and express. As John Dryden expressed it in his 1687 *A Song for St Cecilia's Day*, which Handel later set to music: 'What passion cannot music raise and quell?'

We know how much music means to us through people's testimony to the importance of music in their lives. Yet we know all too little about the hidden essence of music – why it works for us, what it expresses, and what makes it such a crucial element in all our lives. Huge progress has been made in understanding the science of our reception of music, how we perceive it and how we remember it. Valuable experiments have explored how we learn music, how we memorise musical notes, and how we make music ourselves. This research explores the issue of what creates musical skill: nature or nurture, talent or practice. But what this science doesn't quite tell us is *why* we like the music we do: is it a question of our character, our upbringing, our memory of the music we have heard since birth (or even before, as we lay in the womb)?

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It is clear that we have an innate, inbred response to music, which may be instinctive and unreflective, and may lead to a thirst to explore it. Everyone will hear music, some will listen, and some will respond by making music. Shouldn't we just get on with it? Isn't it odd to be writing about music rather than playing and singing it? Many have poured scorn on attempts to elucidate the art of music (various people have claimed the view that writing about music is like dancing around architecture, though I always felt that might not be an entirely fruitless pursuit). For anything so elementally important to us as music, there is always a desire to try and explain, to communicate the excitement. There has always been a thirst for understanding and mediation, for analysis and description.

Old narratives of musical adventures could be singular stories of evolution and advancement, because there appeared to be a single current of history. They tended to establish a narrative from the primitive beginnings of plainsong and folk music to the sophisticated present of the symphony orchestra and opera house. Now, in an age of musical diversity, we value the achievements of the musical past equally alongside those of the present, and this single narrative no longer holds. The vista is different. Rather than walking along a corridor, conscious only of what is immediately behind and focused on moving forwards and what is to be encountered ahead, we are now in the equivalent of an open-plan apartment, where every room is equally accessible to us and we can move about freely; we can step from the present back into past centuries, sideways to distant music of other cultures or forwards to adventurous new music. Rather than seeing musical development as organic but linear, we now appreciate that all musical experiences have the potential to inspire us and feel close to us. This is a radically new understanding of music, and it is a richness of our age.

If we accept that music from a far-off tradition or a past age can be as relevant as music from our own back yard, the question is how this revolution has come about. One answer is immediately clear: it is the technology of recording and broadcasting which over the last hundred years and more has made a huge variety of music from across the centuries available to us in a moment. This has brought about a seismic shift in our perceptions, one that we were arguably very slow to recognise.

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In previous centuries the only music was live music, what was played or heard: no radio, no discs, no internet. And most of that was the contemporary repertory, the music of the time, or earlier pieces that had been passed down by oral tradition. There was certainly 'old music' preserved: in churches and cathedrals, for example, an ancient repertory was kept alive and renewed by repeated performance. But on the whole, it was the music of the day (and increasingly during the late eighteenth and nineteenth centuries, of the day before yesterday) that was heard in concert halls, eventually helping to create – and, some would say, to fossilise – an accepted canon of the Western tradition. That is how the landmarks of classical music from Beethoven and Brahms onwards acquired their special status in our listening.

Popular music had its own flourishing life, passed down orally and so unrecorded until collections of folk ballads and dance music began to be published, and later researchers such as Béla Bartók and Cecil Sharp began to survey and collect traditional music by transcribing and recording performances in the field. As a result, much of the oral tradition of the past is irrevocably lost to us now. But the oral and the written traditions overlapped: while Mozart's *Figaro* was performed in the opera house, as the composer proudly noted, in the streets of eighteenth-century Vienna they played the opera's hits. As the piano became a common domestic instrument for the middle classes in the nineteenth century, you could acquire transcriptions of orchestral works for piano duet and play them at home. That was a kind of 'reproduction' from the concert experience, through which many learned the central repertory of symphonies and orchestral works.

The technology of recording changed all that. It started as the impulse just to make live performance more widely available. It made stars of individuals: performances by singers like Enrico Caruso could, for the first time, travel beyond the opera houses and concert halls to reach an international audience. One of the first conductors to sense the opportunity of recording as a medium in itself was Leopold Stokowski, who created sonic pictures of great sophistication with his orchestras. He then collaborated with Walt Disney in the creation of one of the modern era's most successful attempts to popularise classical music, the animated film *Fantasia*. Here, masterworks including Dukas's *The Sorcerer's Apprentice*, Schubert's *Ave Maria* and Beethoven's 'Pastoral' Symphony took on new visual

identities, some abstract (the graphic opening with Bach's Toccata and Fugue in D minor), some programmatic (the inspired linking of Dukas's Sorcerer with the character of Mickey Mouse) (Plate 29).

Increasingly, recording became key to the careers of conductors and soloists, as it later became crucial to the careers of pop musicians. Old-style 78rpm records, totally unfamiliar to generations today, preserved fine performances and enabled them to be circulated, albeit with the drawback of having to turn over the discs in the middle of symphonies or concertos, and carefully tend the needles that played them. Then from the middle of the twentieth century, in a post-war era which had a strong emphasis on popular education and learning, the growth of the new long-playing (33rpm) record transformed the market. Leading musicians earned significant amounts of money as the public eagerly consumed their work. From the 1950s onwards, in a time of widespread belief in public subsidy and investment as a route to an enlightened education, the arts flourished as never before and were enjoyed by more people from a wider social spectrum. We are still living with the inheritance of that rich and rewarding time (Plate 24).

The period after the Second World War saw a huge growth in musical consumption of all kinds, both as solace and as stimulus; radio and recordings became central to our musical experience; they made music available and accessible to all. But the public did not give up live performance as a consequence. Recording supported a thirst for concert- and opera-going: resources were plentiful, and the record companies were content to look for financial return in the long term on their investments in classical repertory (rather than the immediate commercial rewards demanded more recently). The range of music recorded was very wide, and artists who were supported by the recording industry became equally in demand for live appearances. Instructional material for 'music appreciation' became a part of adult as well as of children's learning. This was a now unfashionably top-down approach to musical education, but it produced a huge and devoted public.

Recording continued to be a generator of enthusiasm for music, and it responded to changing technologies. As the new compact disc succeeded the LP in the 1980s, there was a thirst to re-record huge swathes of the repertory in newly clear and transparent performances, and in a medium not so easily dam-

aged by scratches and clicks. The peak of the recording boom in classical music was marked by the success of the Three Tenors concert in Rome in July 1990, where Plácido Domingo, Luciano Pavarotti and José Carreras came together to perform popular arias and specially arranged medleys. The resulting recording is believed to be the world's best-selling classical CD. 'Nessun dorma' from Puccini's *Turandot* was selected as the theme music for the television broadcasts of the football World Cup that year, reaching many more millions, so it is no surprise that many imitations, by the Three Tenors themselves and by many disciples, followed quickly. The emphasis here on extracts, familiar arias and medleys rather than complete works also followed a trend: not unlike the varied approaches of Classic FM and BBC Radio 3 today, or in the old days, the BBC Light Programme and Third Programme. There have always been offers of highlights and popular numbers for some audiences, alongside the exposure to complete works and adventurous pieces for others, helping to form musical taste and enable listeners to expand their repertory.

However, this flourishing period was soon subject to challenge from the development of new technologies for digital distribution. The music industry was lamentably slow to adapt to the opportunity as online streaming and file-sharing took off, retreating instead into defensiveness and hanging on to outdated business models. The balance of power in the world of musical consumption suddenly shifted, and an alarming amount of material became free to access via file-sharing software such as Napster, which facilitated the sharing of music between users. What was not reckoned in such exchanges was the investment of time, energy and talent by composers. Now we are moving gradually towards a fairer system of recompense for creative artists, but it is a slow process; more artists have begun to retain their own control and originate their own material for distribution. We do not know how the balance of power will shift again; the future is wide open.

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If music is essentially performance and sound, where does that leave the notes on the page? They are of the greatest importance in mediating between the composer's idea and the performer's actions. But they are not everything we need

to know. Over the years, composers have taken very different attitudes to how much of a piece of music needs to be specified in written form. You look at the score of an opera by Monteverdi from the start of the seventeenth century (p. 92) and it is totally empty apart from the vocal line, instrumental bass line and text – which tells you that the priority of the composer was to project the words. You look at the orchestral score of a symphony by Mahler from three centuries later (p. 197) and every detail of how every part is phrased, where it gets louder, softer, faster, slower – all this is indicated (Plate 2). In both cases the performer needs to ‘realise’ the score, and in both cases, this is a deeply creative act of cooperation with the composer. But the relationship is very different: the simplified instruction would be in the first instance that the performer needs to be inventive, whereas in the second they need to obey. Move on a few more decades, and we reach the avant-garde graphic scores of the 1960s (p. 247); these may look like works of art in themselves, the composer may indicate shapes and some notes, but the idea is to stimulate the imagination of the performer rather than specifying a fixed concept.

The extent and purpose of musical notation has changed over the centuries: it provides a framework for the composer to communicate their intentions, while other aspects are left deliberately open. With plainsong, the repertory could be memorised and passed on through an oral tradition long before a notation was created for the chant. The folk tradition thrives on non-notated transmission, passed from one singer and player to another: this does not necessarily imply any vagueness, but does depend on a close continuity of tradition. As the complexity of music increased, there was a need for notation which conveyed precise details of speed and loudness, the phrasing and articulation of the musical lines, all crowding onto the page in an attempt to be explicit.

That is still only one part of the story. Everything we read about the great performers of the past suggests that even when music existed in written or printed form, they recreated it with freedom and individuality. A nineteenth-century composer-pianist such as Frédéric Chopin or Franz Liszt (p. 172) used *rubato* freely. This is a rhythmic unevenness beyond that portrayed in the score, in order to bring expressive life to the music. For example, while the left hand sustains

a steady pace, the right hand of the pianist might take some passages faster or slower, 'stealing' time within the framework of the piece to animate it. Speed varied within a piece even if there was only one tempo marking; the invention of the metronome provided a mechanical measure with which to set tempo. Beethoven and (more reluctantly) Brahms made use of metronome marks to indicate the speed of their movements, but they did not imagine these speeds being inflexibly applied to every bar. Schumann provided metronome marks but then encouraged performers to play faster ('*Schneller!*').

A significant, and potentially negative, aspect of music-making in the last century has been that dependence on a written score has become such a priority both for the training and the work of musicians. In many previous eras, ornamentation and improvisation were expected, and common in performance. Sometimes these elements would be written out, but often they would not be. In baroque opera, the decoration of an aria by a virtuoso singer was expected by the audience, especially in the repeat of the first section which was a regular feature of these arias. We know that Mozart would have assumed that a pianist would improvise or elaborate the solo parts he wrote in a concerto, and that he did this himself: he would certainly have improvised passages and added cadenzas, and some of these he wrote out – but as guides, not as fixed parts of the score. These days we have to use our taste as to what matches Mozartian style: in cadenzas added to Mozart's concertos by later composers from Beethoven to Busoni, they take the music into their own harmonic sound-world, and there is a debate as to how well that fits, or whether it establishes a connection with our time. In the early 1980s, the Russian composer Alfred Schnittke (p. 250) added a strikingly modern cadenza for the adventurous soloist Gidon Kremer to play in Beethoven's Violin Concerto, to consternation from audiences.

Some composers provide detailed information on the type of ornamentation they expected; in publications of seventeenth- and eighteenth-century French keyboard music, for example, there are copious tables of how to realise the signs and symbols which form part of the notation. I particularly like the comment of the French composer Michel de La Barre in the 1710 advertisement of his flute works that 'there are two or three notes which I believe no one knows . . . if those

who would like to learn would take the trouble to pass by my home . . . it would give me great pleasure, with no obligation to them, to show them how'. The violin sonatas of Arcangelo Corelli at the start of the eighteenth century (p. 130) were provided with all manner of embellishment by performers, and those elaborations were published in their own right. Composers created their music in very different ways: J. S. Bach's organ preludes and Chopin's piano ballades are probably written-out versions of material that their virtuoso composers improvised in performance. Even music that we think of as fixed, like the opera arias of the nineteenth century, were hugely varied in their delivery by performers: very early recordings show the tremendous liberties that singers took with the written score – liberties that composers such as Verdi clearly expected them to take, even if he resented them (p. 181). He wrote wearily to his publisher, 'Once one had to tolerate the tyranny of the prima donna; now, also, that of the conductor.'

This raised the whole issue of 'interpretation' both by singers and by conductors. We can trace back to Wagner the view that the conductor should not just follow the notes on the page, but should seek to understand them, mould them and deliver them to an audience in an individual way. He considered the unimaginative, slavish adherence to the notes a weakness of the typical German Kapellmeister who could never 'sing a melody, whether his voice was good or bad. Music to them is a mixture of grammar, mathematics, and gymnastic exercises.' Like many artists, Wagner believed that 'the first rule of interpretation is to convey the composer's intention with scrupulous fidelity . . . to transmit his thoughts without any change or loss'; but the question remained how best to achieve this. In one vivid passage, Wagner the conductor imagines the ghost of Beethoven speaking to him about the four-note phrase with dramatic pauses (the 'V for victory' theme, as it became known through its use in wartime) that forms the famous opening of the Fifth Symphony:

My pauses must be long and serious ones. Hold them firmly, terribly. I did not write them in jest or because I was at a loss how to proceed . . . I arrest the waves of the ocean, and the depth must be visible; or I stem the clouds, disperse the mist, and show the pure blue ether and the radiant eye of

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the sun . . . Ponder them here on the first announcement of the theme. Hold the long E flats firmly after the three short tempestuous quavers . . .

Wagner the interpreter has no doubt what Beethoven the composer is telling him. That, of course, has to be the position of any interpreter, who has to have the absolute conviction that their view of a piece is the right one for that moment in time. The rest of us can balance our views, and choose different interpretations. The performer must deliver.

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Every music teacher would accept that just observing a text correctly is never going to create a living, breathing performance, yet so many musicians and students (and those who take music examinations) are judged by whether they meet this criterion of accuracy. It may be that our late twentieth-century preoccupation with ‘following the composer’s intentions’ has in this respect been a negative influence. The slogan of going ‘back to the original’ and the quest for ‘pure’ editions have been thought to imply a slavish following of the score, whereas that should more readily imply a liberation of the imagination.

We are living with the legacy of a strong traditional line through the Western classical tradition that privileges the notated score as the primary source of music. As we follow the creation of a repertory, we will encounter, by the sixth and seventh centuries, signs called neumes. They were written down, for example in the chant book that survives from St Gall in Switzerland; a text with a symbol, no more than a squiggle, placed above it which shows roughly where it lies in relation to the pitch before or after it. These were probably aids to singing music that had already been learned and memorised. Some chant is then copied with a single red line representing a single note, above and below which the pitches are placed; a yellow or green line for another note was then added. The abbot Odo of Cluny seems to have been the first to assign letters to notes in his *Dialogus de Musica* of 935 AD. It was not until around 1028 that Guido d’Arezzo compiled his now famous *Micrologus* which gave Western music the advanced capability to be written down. The Latin hymn *Ut queant laxis* produced the acrostic (based

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on the initial letters of each line) for the first notes of the six-note scale *Ut re mi fa sol la*:

Ut queant laxis
Re-sonare fibris
Mi-ra gestorum
Fa-muli tuorum,
Sol-ve polluti
La-bii reatum
Sancte Johannes.

(If that ancient hymn seems vaguely familiar, just say the initial syllables to yourself, substituting *Doh* for the first *Ut*, and you may find yourself singing a famous song from *The Sound of Music*, by which Maria taught the von Trapp children.)

The creation of notation that enabled music to be transmitted by written means is the first big tipping point in Western music: as in all these moments, it was not a sudden change, but a gradual evolution. By the thirteenth century a four-line staff for chant had been developed, and then a five-line staff for polyphony. This has remained astonishingly unchanged across the centuries; indeed, the latter staff became universally used in Western music, with the placing of a clef that shows which notes are represented. The most common clefs, used for instance in most piano music, are the treble clef for the right hand, which curls around the note G on the second line up, and the bass clef for the left hand, which has two dots around the note F in the second line down. You might not recognise these as ornamental versions of the letters G and F, but that is how they originated.

This was not the only way that music was notated. For the lute and guitar, ‘tablature’ used letters to indicate notes; this was popular in the sixteenth and seventeenth centuries because it helped to indicate the fingerings to be used on the instrument. Some organ music was also written in tablature (including the earliest scores that we believe J. S. Bach wrote out when he was a teenager), sometimes with a mixture of normal notation for the top line and letter notation underneath. The descendant of that today is the normal notational device used for guitars and

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for popular song, in which a melody is notated on a stave, while the chord sequence that accompanies it is given as a sequence of letters.

The labels invented by Guido d'Arezzo came back into their own during the nineteenth century. 'Tonic sol-fa' was a system invented by John Curwen to help those untrained in notation to learn to sing. The same syllables employed by Guido (except for *Doh* instead of *Ut*, and the addition of the seventh note, *Te*) were used to indicate the degrees of the scale; these written syllables replaced the notes on the stave. This development coincided with the rapid growth of choirs and choral societies, and the general teaching of singing in schools. It served its purpose, even managing to indicate rhythms by the spacing of the letters used to denote the pitch. There have been many other attempts to create alternatives to conventional notation, but few have succeeded in establishing themselves and displacing the traditional staves.

However, as modern music has developed new techniques and sounds, so new notational devices have been invented to communicate them, often of great ingenuity and visual originality. Graphic notation has proved a fertile source of invention. Composers combined normal notation and clefs with a graphic layout, often visually attractive, with cross-cutting patterns of staves and instructions, or combined staves with graphic lines, pauses, dynamics in seemingly random juxtaposition. John Cage's scores are always exquisitely drawn (p. 245). For music with limited amounts of freedom, various devices such as boxes of notes are imposed on conventional staves, indicating where the performers can improvise within clearly set limits, for example in the superbly crafted orchestral music of Witold Lutosławski (p. 240), with its controlled areas of improvisation.

At the extreme of contemporary notation are pieces for which the instructions consist only of texts. Stockhausen's *Setz die Segel zur Sonne* says:

play a tone for so long
until you hear its individual vibrations
hold the tone
and listen to the tones of the others
– to all of them together, not to individual ones –

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and slowly move your tone
until you arrive at complete harmony
and the whole sound turns to gold
to pure, gently shimmering fire

Some of these instructional notations have other performance elements. La Monte Young's *Composition 1960 No. 5* instructs: 'Turn a butterfly (or any number of butterflies) loose in the performance area. When the composition is over, be sure to allow the butterfly to fly away outside. The composition may be any length but if an unlimited amount of time is available, the doors and windows may be opened before the butterfly is turned loose and the composition may be considered finished when the butterfly flies away.' These verbally notated pieces enjoyed success in the 1960s as composers aimed to strip music back to its barest essentials, but as complexity increased a reversion to conventional notation took place; some of the big orchestral works of recent years have stunningly complex layouts.

The relation between notation and performance is at the heart of our music-making, and has long been a central tension of the Western classical music tradition. A century and more ago, academic study privileged music as a set of texts that had to be analysed in the same way as any other formal literary tradition, with the same editorial rigour. The notes on the page were what mattered. The volumes of collected works on library shelves were what music was. But now you look around, seeing the many sources of music, and the issue is more subtle: we sense how much of what is not written down makes a thrilling performance. What then is the essence of music?