

Dwelling in Music

From Pythagoras to Bach and on finding new grounding in Music

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1. Today music is understood as an art form, an art form the place of which is designated as aesthetically conveying experiences and ideas using the sound medium. This current view of music is the result of an entire age's worth of change and evolution and while persuasive and true in a very concrete way it begs the question of whether there is more to music than merely expressing inner states and feelings with musical instruments. In this essay I would like to show how the evolution of music didn't deepen our understanding of it, but rather, removed music from the everyday reality of dwelling and confined it to only those characteristics which belong to it as aesthetics. This aspect, which is now perceived to be the whole of music, is the aspect in which music is art. It is the art-as-aesthetics that has its value measured by the intellect and is employed to invoke both contemplative sense of order and beauty as well as an emotional response, in popular music genres particularly, by calling upon sounds and harmonies which awaken particular psycho-somatic responses to music. These are now more and more subject to scientific research into the human psyche and while not part of the classical music tradition they still operate in the same spirit of striving to define and confine the scope of music to its preconceived man ordained role.

2. There are two aspects of music which we in this modern age pay no heed to, since they are not considered to belong to music strictly speaking, and which need to be brought to light if we are to see the limitedness and specificity of this aesthetics ridden demagoguery. These are: the extent to which music is a mathematically lawful science, through the study of which we can discern the natural laws governing music; and, even more important, music's character as that which human beings dwell in, its allegorical aspect by virtue of which it transcends both itself and man.

The first observations of musical laws known in the western world are those conducted by Pythagoras, so the legends have it; and music has been an object of study for the natural sciences ever since. This mode of examination has two facets: one is exploring the physical properties of sound producing objects, like blacksmith's hammers in Pythagoras' case, and the other is transferring these findings into the fields of mathematics and arithmetic to outline laws that govern music through the use of numbers. In one sense our knowledge of this aspect of music is not contentious, simply because it appears to be within the bounds of objective science. However, it is the findings of this mode of inquiry that were instrumental in bringing about some of the biggest shifts in the history of music. The introduction of equal temperament in the 18th century was *the* profound change enabled by the scientific understanding of sound, and is the bedrock of all post-Enlightenment perceptions of music. But the way this scientific knowledge was used to arrive at findings such as equal temperament does not belong to itself, it was only a vehicle for a further reaching project, that of attaining more complex aesthetic beauty. The naturally present pure intervals which can be expressed with simple ratios such as $2/1$, $3/2$, and $4/3$, have been replaced by a tone system which is mathematically speaking 'out of tune'. The equal distance of semitones on the keyboard has been imposed upon the finely balanced primordial structure of sound in a similar way that

technology is imposed on nature in general, it '*conquers and subdues her, shakes her to her foundations*' (Bacon). This was done because an equally tempered system allows for free treatment of harmony, there are no modulations that are off limits any more and every key sounds just as good as any other. The tonal system created is there as a '*standing reserve*' (Heidegger) at the service of the artist. Most classical music from the mid 18th century onwards would not have been possible without this equal system. It liberates the artist from the practical limitations imposed by nature and allows for unhindered expression of whatever wants to be conveyed. Only within the scope of equal temperament can such things as atonality, serialism, and pan-chromaticism arise. From Bach onwards virtually all music is *grounded* in this temperament.

3. The question that needs answering is whether there is something we can learn from the observation of the way music works, from its mathematically beautiful proportions, without bringing the aesthetic agenda with us and without trying to subject and mould what we discover.

Following on with the analogy of technological manipulation of nature there is no reason for us not to have the same reservations and concerns about changing the way sound comes into the world as music as we have about changing the air we breathe or the food we eat. After all we consume music too, who could deny music is the food of the soul!

One of the reasons this question is not pursued seriously is because we don't take music as something that is of immediate importance. We see it as a sign of being civilized and as a pastime that is worth pursuing but in no way do we perceive the immediacy of the impact music has on us as human beings. I believe music does profoundly affect the way we live and to demonstrate that let's take some common place sayings which reveal its wider nature. 'Music

creates an atmosphere' speaks of the pervasiveness and sway of music in the human real. There are musical expression we use in every day life that point to this too, words like harmony and rhythm are used by musicians and everyone else alike. 'This or that sets the tone and pace of our lives'. This or that *is* music, even if there are no sounds to be heard. My pace of walking is much faster, more agitated, and more tiring, when I am surrounded with beeping cars and ambulance sirens, then it is when I am walking through a green meadow and the lark is singing from its nest high up the birch tree. In fact, *life* is completely different in each of these scenarios. And in this way music is a part of our everyday life, we are just as much singing creatures as we are speaking animals, and speaking of language in its highest sense, in the sense in which '*language speaks*' (Heidegger), music might belong to language as its most mystical part since even the most elevated words cannot reach as far towards the Truth as music can, due to the lack of its particularity. Music does not have a fixed meaning, which every word must have, even if it be but a surface of its being. Incidentally, it is precisely this broadness of music that has allowed for the kind of specialization we see today. Atonality, micro-tonality, electronic music, music played on instruments made from scrap materials, are all made possible because of this broadness. They are in sharp contrast to the nursery rhyme by which the babe falls asleep, to a requiem which marks the passing away of a brother, to the song a plantation worker sings to get through the day, to the national anthem under which we unite as one people, or not, and in contrast to that flute song the shepherd plays on the high plains to his sheep.

4. It seems easy enough to see how broad the occurrence of music is and how profoundly it is intertwined with life as such, so how have we arrived to the proposition that music *is* more essentially a limited art form than it is that which

we dwell in? Tracing back the history of the fugue might help us answer that question, however unlikely that may at first seem. It will also shed light on the motivation which brought about the introduction of equal temperament, and so speak to the previous question of changes to the natural laws that govern music.

The fugue is essentially a compositional form based on imitation. However, having undergone centuries of refinement it became an elevated medium for the so called pure music due to its fertility in terms of aesthetic options. Imitation is one of the most basic things we know. Music probably started as an imitation of the natural sounds and can as such be found in a lot of traditional music from across the cultures. Aristotle, for example, held that music and poetry are essentially imitative activities, placing in front of us that which could perhaps not be attended to in any other way. Imitation in western music started much within that scope as a part of the Christian liturgical tradition. With the development of polyphonic singing the rules of imitation became more complex and the aesthetic questions started gaining in significance; they finally surpassed all other consideration by the time of high baroque when the fugue reached its summit in J. S. Bach's *The Art of Fugue*. Treatises from the late middle ages and the beginning of the Renaissance, by the likes of Zarlino, are already preoccupied by this question; strict imitation was already seen to be insufficient, due to its lacking in interest and innovation, a notion that stems from and applies only to music as an aesthetic art form. As long as prayer or companionship are seen as that which is vital in singing together there is no such notion as 'providing interest' or 'being boring' on the part of the imitative technique. It is precisely this change that brought about music as we know it today. It is the *focusing of the gaze* on this particular aspect of music, and a beautiful aspect it is, that was instrumental in increasing the complexity of composition, instrument making, bettering of performance skills, and in

breeding audiences which were learned enough to be able to even enjoy this new sophisticated music. This narrowing down of the audiences is in direct correlation to the narrowing down of the meaning of music. As long as music is part of what it means to be human everyone partakes in it, but when its being starts to depend on such things as theory and aesthetics only the educated ones can follow and enjoy its fruits. Thus what was once only a part now became the whole and an entire spectre of meaning was lost in this transition.

5. I choose to write about the fugue because it is exactly this method which was the key proponent of equal temperament. In Renaissance theoretical treatises the trend of starting the fugal imitation in the octave, the fifth, and the fourth, in relation to the original theme, starts emerging. If such imitation is to be possible the composer has to be able to modulate freely to these respective keys without having to retune the instrument. This is when the chase to build keyboards on which this would be possible began. From just intonation the first step was to mean tone temperament which already provided more flexibility. Equal temperament followed only a few decades later and was shown in its glory in Bach's Well Tempered Clavier which is of course comprised of preludes and fugues, warm ups and real music! I need not point out that a similar *focusing of the gaze* occurred all across the arts and sciences at that time. The end of the 17th and beginning of the 18th century saw a firm establishment of the scientific method as central in explaining and aiding human life. The traditions of natural law were pushed aside and religion saw its wings cut; generally speaking we started specializing in things to an unprecedented degree, but not just degrees, it is principles that changed.

6. To make the specificness of the current situation acute we have to contrast it with the ancient view of music, as elaborated on by Plato and the classics. Plato shows us the importance of music when he tells us in his Laws that music

should be treated with utmost care and not be allowed to change since it can corrupt the people and bring ruin to the Polis itself. This might seem like a pompous exaggeration but Plato has a very clear reason why music is of paramount consequence. Boethius in his *De Institutione Musica* spells out this ancient view in the first chapter before conducting a careful examination of the laws of music. He says there are three kinds of music; music of the spheres, man as music, and music of the instruments and the singing voice. Music is the harmony which keeps all the heavenly bodies in place and ever moving, it is that which prevents the cosmos from falling apart. In the human it is that which keeps the *'rational and the irrational in harmony'* (Aristotle) as part of one human being and in music of the instruments it is that which makes a collection of sounds into a piece of music. *'There is no doubt that the harmony between the body and soul is of the same nature as the harmony between sounds in a well sung melody'* (Boethius, 1.13).

Understood in this way music is balance, harmony, and order, which keeps all things themselves, thus in a way granting them their being, as well as creates new things out of the abundance of its harmony. An outward and simply observable manifestation of that order are the laws of sound.

7. When Pythagoras cut a string in half he noticed that it produced a sound exactly twice as high in pitch as the full string. He called this relationship an octave and expressed it mathematically as $2/1$. Boethius, an avid mathematician and expert in arithmetic, took upon himself the task of fully spelling out the laws that govern sound and music. Following a similar procedure he established a fifth, $3/2$, and a fourth, $4/3$, the two of them together making up an octave. From that a whole tone was deduced, $9/8$, and then the two half tones, of which the small one is found in the fourth and the large one in the fifth. An octave is

comprised of *almost* six whole tones, the gap being called the Pythagorean comma, and it is this *comma* which was seen as an imperfection through the eyes of the late Renaissance and which brought about equal temperament; at the expense of pure intervals, of course. The octave on a modern piano is no longer $2/1$ or the fifth $3/2$; trying to make up for that comma we now have instruments which are wholly out of tune. All of the keys on the keyboard were adjusted in such a way as to eliminate the comma, to spread it out and thus make the dissonance almost inaudible to the human ear. This was done for aesthetic reasons and sprang from the development of the fugue and general rise in the importance of harmonic interest. However, it is interesting to see why the ancients such as Plato and Boethius would never dare thus temper the natural balance and harmony of music.

8. Seeing the three levels of music, cosmic, human, and that of the instruments, we now have to speak to the importance of both discovering and maintaining the mathematical proportions first found by Pythagoras and fully established by Boethius. While the reason behind the modern natural sciences is to inquire into the laws of sound so we might better understand it and change it to our advantage and desire, this was not the case in antiquity. Boethius's effort to establish the laws of sound mathematically was not in order to change and manipulate it with the knowledge gained thereby; rather it was done to find divine harmony in it and express it in yet another way. It is like looking for the divine footprint in all things and seeing the mathematical simplicity and beauty of the laws of music, we indeed are in awe of the Logos which created the laws of music. Thus, these simple ratios of $2/1$, $3/2$, and $4/3$, reveal two things; one is the workings of sound i.e. the thing they are concerned with, and the other is that of divine presence which shines through that sound and these proportions.

This is cosmology, this harmony is what keeps planets, nations, and each of us as we are. It is what HRH The Prince of Wales refers to as *'the grammar of harmony'*. Heidegger speaks subtly of this harmony as well. *'The art work is, to be sure, a thing that is made, but it says something other than the mere thing itself is, allo agoreuei. The work makes public something other than itself; it manifests something other; it is an allegory.'* (Heidegger, The Origin of the Work of Art)

9. The same that was now demonstrated for the province of sound, and its mathematical properties of proportion, is also true for music in general. Perhaps speaking of the shepherd's flute playing, or the nursery rhyme, seemed foolish before but in the light of the principle of allegory these simple everyday expressions of music receive new being, and they receive it directly from God or Logos; for they point allegorically and in their highest sense to nothing else but to the source. This is indeed far fetched if music is seen as that which is limited to the instruments and the singing voice, but if seen as music of the spheres and man-as-music then the shepherd's song partakes and even nourishes these higher modes of music. In this vision all things have meaning for themselves, as music does today, be it classical or otherwise, but they also have meaning which transcends themselves, for they point as symbols upwards through all the realms and thus receive their transformed being from the great depths of harmony.

10. But if music is to be perceived as the embodiment of Logos, the Word, we have to profoundly reposition ourselves in relation to all things. For one, such an elevated nature of music cannot be conquered, induced, produced, or extracted, it can only come of its own accord, like the sunset. At a stroke man's place in nature and the cosmos is shifted from being the master of nature, as Bacon, Locke, and Hobbes would have it, for we suddenly become a part of the

cosmos; thus our position has to be determined by looking at the whole and not at our own desires and dispositions. Now the proportions which govern music become of greater significance still, for they at once show the transcending beauty and order of the cosmos and also tell us what our place in this cosmos is, namely, to discern this order, to hear the harmony, to see the beauty. In that seeing and hearing we truly become participants and co-creators of the cosmos. A natural position of man in nature in general, and in music specifically, is thus to perceive, reaffirm, and further add to, the order and the beauty of the Word. The sunset comes unbidden, there is nothing we as humans can do to either make it appear or disappear, but when it comes into our vision we can either look at it as a source of heat and energy or see in it the face of God. Out of this kind of vision music, art, dance, and poetry, flow as naturally as day follows night. There is absolutely no discontinuity between the sunset and the painting of that sunset. The painting has two lives in this sense; it is both a beautiful piece of art and a pointer to beauty itself, and the sunset is akin to the painting in both these aspects. So is the shepherd's song, calling on the sheep it also speaks to the gods, and the more simple the melody the more purely perfect proportions of sound come into being.

11. As words of conclusion it might be helpful to say how uncomplicated and non-intellectual this vision really is. In fact, it calls for a re-grounding of the intellect in real seeing and hearing. Nowadays music is like a tree without roots, and for all the aesthetic beauty that is there in Bach or Stravinsky, in Mozart or Beethoven, its meaning to dwelling-as-such has been lost. But we are in a position to perceive and change this relationship. Putting the artful and the aesthetic in music in its right place will release a whole world of meaning which is there just beneath the surface, which is sounding but is not heard. To

listen, to listen to the music is the key. Then we might be able to find that high vision which is so present in Shakespeare, for he '*Finds tongues in trees, books in the running brooks, sermons in stones, and good in every thing*', and in the like manner the shepherd's song houses divine beauty itself.

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