

Music, Colour and Eurythmy

Preamble

This article arose as a result of work that the eurythmist Jonathan Reid and I carried out over a period of more than a year, where we were attempting to 'triangulate' music, colour and eurythmy. One result of this was two workshops for eurythmists held during the AGM of the Eurythmy Association of Great Britain and Ireland. This article is in response to those who requested something in writing about my introductions to each session. It is mainly concerned with music and colour but, as the workshops showed, there can be much value in bringing this into eurythmy.

What is sound, what is colour?

"If a tree falls in the woods and nobody is there to hear it, does it make a sound?"

Such a question can be related to the philosophical stand of Bishop Berkeley: "sensible things are those only which are immediately perceived by sense." It certainly raises the question as to what we mean by 'sound'. A scientist may define sound as the pressure variations in the air that cause us to hear it, but that is simply not good enough, because there really is no sound unless it is heard. The hearer is an intimate and essential associate if there is to be sound.

Now what about colour? Some years ago *New Scientist* included a set of articles including one entitled "How Red is my Tomato?". Same again – colour exists because we see it.

What we make of sound, what we make of colour, in both cases we are talking about a soul activity. Yes, we sense/perceive something: but it is how we 'go out' to meet it, which is our activity, that determines what we hear or see.

None of this conflicts with the fact that there is a physical source for sound and colour.

Music and Colour

There has long been an association between music and colour, going back to the time of Aristotle who, around 350 B.C. maintained that the harmony of colours was like the harmony of sounds:

"... we may regard these colours (viz. all those colours based on numerical ratios) as analogous to the sounds that enter into music, and suppose that those involving simple numerical ratios, like the concords [the harmonious blends] in music, may be those generally regarded as most agreeable" (from *The Senses and the Sensible*)

This set the scene for making parallels between light and sound frequencies in later times, including Isaac Newton, who arbitrarily divided the visible light spectrum into seven colours and applied this to the notes C-D-E-F etc. from red through to violet.

From Medieval times colour has also been used as an aid for reading music, being applied to notes, rhythms and modes. Is it possible, though, that the colours chosen might also reflect something about the qualities of these?

A different approach arose from the desire to widen experience of performing and listening to a piece of music by adding colour in some way. Thus from the 18th Century onwards there were many different designs for so-called 'Colour Organs' – machines creating different colours by playing on a keyboard. Generally these machines, impressive and innovative as they were, did not themselves combine music and colour. A later exception (1870) was Frederick Kastner's 'pyrophone' ('Orchestral Fire Organ and its appliances, The Electric Candelabra') with ignited gas jets making sounds like voice, piano, orchestra.

The music is based almost completely on inversions and transpositions of one chord created by Scriabin and subsequently used in a number of compositions. Known variously as the 'Promethean' or 'mystic' chord, it does not relate to normal major/minor tonality (see fig.6).

Tone	Steiner	Zodiac	Scriabin	Rimsky-Korsakov	Newton
C	Red	Aries	Red	White	Red
G	Orange	Taurus	Orange	Brownish gold	Deep Blue
D	Yellow	Gemini	Yellow	Yellow	Orange
A	Green	Cancer	Green	Rosy	Indigo
E	Blue	Leo	Sky blue	Sapphire blue	Yellow
B	Indigo	Virgo	Blue	Dark blue/steely	Violet
F#	Violet	Scales	Violet	Greyish green	
Db	Lilac	Scorpio	Lilac	Dusky, warm	
Ab	Lilac-Rose	Sagittarius	Lilac-rose	Greyish violet	
Eb	Peach	Capricorn	Peach	Bluish-grey/Steely	
Bb	Rose	Aquarius	Rose	Darkish	
F	Pink	Pisces	Deep pink	Green	Green

fig.5. Music/Colour associations



fig.6. Scriabin's 'mystic chord'

The score for the *Luce* has two parts – a more rapidly moving part and a slower moving part. The more rapidly moving part indicates the root note of the mystic chord at that moment, producing the colour indicated in fig.2. For Scriabin the colours produced indicate different moods.

There is also a much slower moving part, principally following the notes of a rising whole-tone scale based on F#, and with notes held in some cases for up to 100 bars or more. Fig. 7, which shows the first 50 bars of the *Luce* part, gives some idea. The more rapidly moving part is 'stems up', the slower part 'stems down'. The initial tempo is Lento, but there is much variation around that.

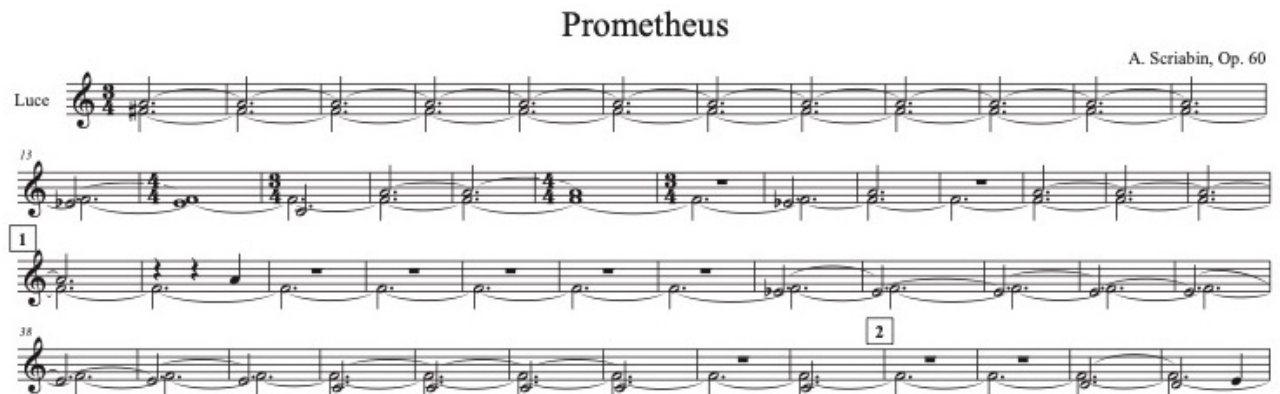


fig.7 Prometheus *Luce* part (bars 1-50)

The F# of the slower part is actually held for 86 bars.

See *Synesthetic Perception: Alexander Scriabin's Color Hearing** by Kenneth Peacock for further details and analysis of *Prometheus*.

Now we have met the word 'synesthetic' (the adjective from 'synaesthesia') for the first time in this article . . .

Synaesthesia is the word used to describe when one kind of sensory perception leads to a different kind. So, for example, a person hearing a piece of music can 'see' colour. The word 'see' is in inverted commas for reasons which will become apparent later. Someone who experiences this is known as a synaesthete.

* In *Music Perception: An Interdisciplinary Journal*, Vol.2, No.4 (Summer 1985),
Published by University of California Press

Olivier Messiaen

I believe that the description of Messiaen as a synaesthete is universally accepted. He says as much about this himself, though using the word 'synopsia':

"I am . . . affected by a kind of synopsia (coloured-hearing synaesthesia), found more in my mind than in my body, which allows me, when I hear music, and equally when I read it, to see inwardly, in the mind's eye, colours which move with the music, and I sense these colours in an extremely vivid manner. . . . For me certain complexes of sound and certain sonorities are linked to complexes of colour, and I use them in full knowledge of this."

Technique de mon langage musical (originally published 1944)

And further . . .

"When I hear music, I see in my mind complexes of colours corresponding to complexes of sounds...

In answer to the question 'Is Debussy's music colourful?': "Marvellously colourful!"

Other composers who are colourful: "Wagner, Mussorgsky, Stravinsky, Monteverdi, Chopin."

"(Mozart)...is different from the other classical composers. Mozart is not always tonal. He's often chromatic. He is always coloured."

"There is only music that is coloured and music that isn't."

(these quotes are from the book *Conversations with Claude Samuel*)

Messiaen was very clear in his perception of colours attributed to music, notably with his own scales and chords, derived from his Modes of Limited Transposition. These modes, or scales, were created by him, not at all following the normal intervals between the notes associated with major and minor scales. Of the six such modes, four have colour associations. Thus colour, for Messiaen, is a key element in the compositional process. Yet he fully recognises what is generally known to be the case – that the actual colours seen or felt vary with different individuals – they are subjective.

Messiaen's *La Colombe* was one of the pieces Jonathan and I worked with, and the first two bars of the piece illustrate the point (see piece illustrate the
fig.8).

Lent, expressif, d'une sonorité très enveloppée

Fig.8. *La Colombe* opening bars

Looking first at the top stave we see that although the key signature is that of E major, there are f-naturals, not f-sharps. This is actually in one of his 'Modes of Limited Transposition' – Mode 2. Messiaen described this piece as being "orange, veined with violet", and in this passage the top stave has the "veins of violet". The other two staves which provide the peaceful background at this point are in Mode 3, which is the 'orange', being the general colour for this mode. In a number of other works Messiaen is more explicit, writing the colours of chords in the actual score.*

* See *Messiaen's Synaesthesia: The Correspondence between Color and Sound Structure in His Music* by Jonathan W. Bernard, in *Music Perception: An Interdisciplinary Journal*, Vol.4, No.1 (Fall, 1986), Published by University of California Press

Working with colour

My own experience of colour in music began with feeling that *Bluebeard's Castle*, a one-act symbolist opera by Bela Bartók was 'dark chocolate', and I then found other pieces that I felt had that colour. That was about 50 years ago.

Much later came a request from a Eurythmy student that I would compose a set of short pieces following the indications given by Rudolf Steiner for the colours and tones of the Zodiac, to accompany the presentation of her project. At the point where I had written all but one of these I then tackled the last one, which seemed to elude me. I wrote something which I felt at the time was not right and, sure enough, when we came to try it out one of the eurythmists immediately said it was just not right for the colour of that Zodiac sign. (My second attempt did work!).

And then, just over two years ago, Jonathan Reid and I were working together on one of my own compositions – a short piano piece dedicated to a close local friend entitled *In Memoriam*. Jonathan had been working on some of the standard aspects for eurythmy – pitch, intervals etc – but then one day he said he was stopping this approach and would turn to working through 'colour', which became a basis for the performance.

With this very much in my mind I suggested to the Council of the Eurythmy Association, of which I was a member, that we might run a workshop on 'colour in music' for the next AGM. The Council picked this up with enthusiasm, and there were two sessions at the following (much delayed by Covid) AGM.

In recent years I had become increasingly in love with the music of Olivier Messiaen, and colour in music is a reality to him. This very much entered into what happened next.

Jonathan Reid and I began a long period of working on music, colour and eurythmy, the result of which was then used in two workshops at the delayed AGM held in October 2021. We had many a conversation about synaesthesia, and worked on three pieces: *Canope* from Claude Debussy's second book of Preludes, *In Memoriam* (my short piece) and *La Colombe* from the book of preludes by Olivier Messiaen. The first two pieces were subsequently used in the workshops at the AGM, which involved around 30 eurythmists.

The sessions that Jonathan and I had were most stimulating – a real working together on a voyage of discovery. It is worth mentioning that at one point we each chose colours for sections of *Canope* and *In Memoriam*, then compared them. Although there were a few differences there was a remarkable level of agreement.

What do we mean by Synaesthesia?

It is time to consider what can be said to constitute synaesthesia, who are the people who experience it, and what its full meaning may be. You will not be surprised to know that there is no single answer to these questions.

The overall picture of synaesthesia is complicated, showing itself in different forms and with different results. With music, synaesthetic experiences are in response to different aspects of the music.

Thus, for example, Duke Ellington sees colour according to particular instruments and players:

"I hear a note by one of the fellows in the band and it's one color. I hear the same note played by someone else and it's a different color. When I hear sustained musical tones, I see just about the same colors that you do, but I see them in textures. If Harry Carney is playing, D is dark blue burlap. If Johnny Hodges is playing, G becomes light blue satin."

The following quote relating to Franz Liszt indicates a colour response to the way the tones in a piece of music are being played:

"When Liszt first began as Kapellmeister in Weimar (1842), it astonished the orchestra that he said: 'O please, gentlemen, a little bluer, if you please! This tone type requires it!' Or: 'That is a deep violet, please, depend on it! Not so rose!' First the orchestra believed Liszt just joked; later on they got accustomed to the fact that the great musician seemed to see colors there, where there were only tones." (Anonymous, as quoted in a book by Friedrich Mahling)*

From these examples it is clear that colour experiences in music can be responses to different aspects of music. Psychologists who have conducted experiments have come up with different aspects of music as the initiators of colour responses. Kenneth Peacock puts these into four broad groups: compositional styles, timbre, pitch and tonalities (keys).

There are undoubtedly people who 'see' colours in the same sense of reality as one sees colours in an ordinary object, but stimulated by sound. Others will say that they 'see' colours in the sense more akin to the following description from Rudolf Steiner's *Knowledge of the Higher Worlds* regarding colours as seen by an initiate in the flame seen in meditation of a seed:

"It must be explicitly emphasised that these 'colours' are not colours as seen by physical eyes. To apprehend 'blue' spiritually means to be aware of or to feel something similar to what is experienced when the physical eye rests upon the colour blue."

Then there are those who might 'see' colours through some word association. Just think of the number of words and phrases that go along with particular colours – 'feeling blue', 'seeing red' etc.

And others who make associations of colours with other experiences of the senses – pastoral music linked to green fields/rolling hills for example.

Still others who simply want to expand listeners experience of a piece of music by adding the colour element.

And those who hold to a 'scheme'.

Sometimes it is more a matter of feeling colours that 'fit' with the music.

More than one of the above can come into play. Many people will not permit some of them to qualify as synaesthesia and thus will, for example, describe Scriabin as a 'pseudo synaesthete' (the phrase 'loose synaesthesia' is also used to cover this).

How does synaesthesia happen?

The existence of synaesthesia is beyond doubt, both in terms of the responses people give and in the act that the 'cross-over' can be detected in the different sensory areas of the brain. In the case of the latter, despite the fact that the responses seem to be almost simultaneous in the two areas, the question remains as to whether that is due to a neurological link, or whether the brain is acting as the depository recording the responses, which are themselves taking place in the soul.

The former approach, the neurological one, sees the neurological links as primary. One form of this approach is to regard synaesthesia as the lingering of neural connections from early childhood – ones which are 'normally' broken during the modification of neural connections during the process of life.

But there is also a completely different way of looking at synaesthesia that leads to colour perception (chromaesthesia) . . .

* Presumably in his book *Die deutsche klassische Sinfonie : Kurze Einführung Klangbilder aus der deutschen Musikgeschichte*. (The German classical symphony: a brief introduction to sound images from German music history).

The sensorimotor approach to chromaesthesia

This is the approach that is explored in a research article by Caroline Curwen of Sheffield University, entitled *Music-Colour Synaesthesia: A Sensorimotor Account*. (SAGE journals)

Key to this is the idea that “musical experience . . . is not something that is done *to* us” [but instead is] “something we *do*” (Krueger, 2011, p. 2).

And that “music-colour synaesthesia should be examined not as a separate and distinct condition, but as a continuation of typical perception and cognition.” It is, therefore, surely something that is experienced in the soul.

From this perspective, whereas someone who does not have chromaesthesia may wonder what it is like to have it, someone who does have chromaesthesia will be wondering what it is like *not* to have it. It is experiential, rather than cognitive.

Piaget speaks of the sensorimotor period of early childhood development – remarkably close to Rudolf Steiner’s description of the early child being wholly sense organ.

An extract from Caroline Curwen’s paper gives some idea of how this relates to music:

“Sensorimotor Theory and Music

How can we relate this to music? If an act of listening to music is an interaction with the sonic environment (Krueger, 2009), relevant sensorimotor contingencies may be obtained in the following ways: bodiliness: turning towards the sound we hear; grabbiness: being alerted at a key or instrumentation change; insubordinateness (relating to aspects of the sonic world beyond our control): music stopping unexpectedly, equipment failure, instrument failure.

. . . our perception roams around different aspects of the material, exploring melodies, instruments, chords, structure, and style; and we are aware of that exploration through bodiliness . . . we will know that we are experiencing a *crescendo* because of increasing tension in the muscles; and we will experience rhythm because of the way that it allows us to synchronize our movements (virtual or actual) with the beat; This constitutes bodiliness.

Grabbiness, by contrast, captures the idea that the environment guides the subject in perception . . . In an orchestral piece, a listener might be more likely to be “grabbed” by timbre . . . Or we may be “grabbed” by the unexpected change from minor to major in a *tierce de Picardie*.”

And finally . . .

This article has concentrated on tones, whether single or as keys or chords. But there are many factors involved in what actually makes a piece of music:-

Structural features phrasing
 forms (ternary form, sonata form, rondo, variations, dance forms etc.)

Elements of music pitch and melody
 duration and rhythm
 harmony – tonality – modality
 dynamics
 articulation (staccato, accents etc.)
 tone colour (timbre) – instrumentation Klangfarbenmelodie?
 texture (polyphonic / homophonic)

Any or all of these play into how music affects us, and some of these we have considered. Some we have not – but could they too lead to a colour response?

Andrew Dyer