

SYNAESTHESIA AND THE CREATIVE  
PROCESS: A STUDY OF ITS INSPIRATION IN  
SCRIABIN'S *PROMETHEUS*

Jessica Harper

U4699575

This thesis is submitted to the Musicology Area of the Australian National University in partial fulfillment of the Honours Degree in Music.

Australia National University

October, 2012

Unless otherwise acknowledged in the text, this thesis represents the original research of the author.

Signed.....

Jessica Harper

Date: ...../...../.....

### Acknowledgements:

I would particularly like to thank my father, sister Rebecca, Daniel Lynch and Nicole Toscano for their help in the editing process. I would also like to thank Alan Hicks, Luke Powter, Mona Biskup and Ruth Lee-Martin for their help and support throughout this year.

This thesis is dedicated to my family, to Dan, and especially to Stephen, whose patience has no equal.

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## Introduction

The role of synaesthesia in composition is difficult to assess, but for those who possess it synaesthesia is an inherent source of inspiration. It is not a compositional tool as such, yet synaesthesia is fundamental to the creative and compositional processes of certain artists. The term synaesthesia describes various multi-sensory experiences of artistic expression. Though many are riveted by synaesthesia, there is a lot of literature dismissing it as a gimmick used by artists and composers to increase their popularity among audiences. Synaesthesia, however, has been integral to the compositional processes of composers such as Olivier Messiaen, Michael Torke and specifically Alexandre Scriabin. The pieces written by Scriabin were expressions of what he saw, tasted and felt when hearing music. There would not be a *Prometheus: The Poem of Fire* if Scriabin had not harnessed his synaesthesia to inform his compositional process.

This paper will cover several topics in relation to synaesthesia. Firstly synaesthesia will be defined and its historical background will briefly be discussed. Information on academic interest and inventors will follow, shedding light on the research that has already been conducted in this field. This paper will then explore the impact that synaesthesia has on the artistic community and on the lives of particular composers; namely Michael Torke and Alexandre Scriabin. The second section will specifically cover Scriabin's composition *Prometheus*. It will be analysed from a synaesthetic point of view, both from the author's perspective and that of Scriabin, which will take the paper to its conclusion.

This paper contributes to a developing academic sector that deals with synaesthesia and how it has been treated over time; with a view to explain its role and impact on musical composition.

## Section One: The Phenomenon of Synaesthesia

### A Scientific and Historical Understanding of Synaesthesia

Synaesthesia is most simply defined as the ability to feel or recognise one type of sensation (e.g. visual) that has been aroused by the stimulation of another sense (e.g. aural). The most common form of synaesthesia is that of seeing words, letters or numbers as specific colours. For example, someone with this form of synaesthesia might see the letter 'J' as being pink, and the letter 'D' as being dark blue. Another fairly well recognised form is 'chromesthesia' or 'colour hearing'. This consists of 'hearing' a sound or a piece of music in terms of colours and shapes. Music-colour synaesthesia is the most intriguing form because it is the most enigmatic; "the phenomenon can actually involve a crossing of experiences between or within the senses of vision, sound, touch, smell and taste".<sup>1</sup> It is a fairly common belief among researchers that synaesthesia exists on a continuum; "the range extends from pure synaesthetes to individuals who have no cross-modal associations at all. ...there are many gradations between, as well as infinite variations on what synaesthesia means to different individuals".<sup>2</sup> This contributes to the difficulty researchers have in codifying or defining what synaesthesia is and how it impacts the artistic world.

While synaesthesia has been vital to artistic development through history, there are nonetheless many difficulties that come into play when discussing this phenomenon. Due to the personal nature of synaesthesia it is very difficult to understand and has often been mistaken as a ploy for gaining popularity. It is something that is experienced all the time by those who possess it, not something that is called upon when desired.<sup>3</sup>

To those who possess it, it is an obvious and integral part of their sense perception – taken for granted by them, much like the smell, hearing, sight, touch and taste are by most of us... Thus, for synesthetic artists or musicians, there can be no question of 'using' synaesthesia as a method, a gimmick of a technique. It is simply there, and they must deal with it. This is a fact that the

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<sup>1</sup> Mulvenna, C. M. (2007). "Synaesthesia, the Arts and Creativity: A Neurological Connection." *Neurological Disorders in Famous Artists - Part 2* **22**: P.206

<sup>2</sup> Berman, G. (1999). "Synesthesia and the Arts." *Leonardo* **32**(1): P.20

<sup>3</sup> Ibid. P.15

vast majority of the population who are not synesthetic have by and large failed to understand.<sup>4</sup>

Synaesthesia is also difficult to comprehend because there is virtually no consistency in the synesthetic experiences of different synaesthetes. One might see a D major chord as blue, while another might see the same chord as yellow. Likewise no two people who identify as having synaesthesia are guaranteed to see the same colours or shapes, or taste the same thing. There are certainly similarities in what is seen in the sphere of chromesthesia, but no two will be identical. As such synaesthesia remains an enthralling concept and there has been a lot of research into its cause.

### **Interest and Inventors**

Over the last few centuries there has been extensive research conducted by scientists and artists alike. Interest goes back even to Pythagoras who “discovered the mathematical order of musical harmony by relating the length of strings to successive octaves. This led to the idea that colours and sounds also could be related, following mathematical rules.”<sup>5</sup> A Milanese artist by the name of Arcimboldo tested this idea in the sixteenth century. “Because he lacked a mathematical system of colour harmony, Arcimboldo inferred a scale of grey values from the Pythagorean system of sound intervals.”<sup>6</sup> Though Arcimboldo is not believed to have had synaesthesia (which is understandably why he used a grey scale instead of a colour scale to categorise the sound intervals) he was still fascinated by the idea and tried to create something that could visually show the associations between colour and sound to the wider population.

Many others have tried to create instruments that demonstrate colours when playing. Isaac Newton “attempted to solve the problem by assuming that musical and colour harmonies were related by means of the frequencies of light waves and sound waves”.<sup>7</sup> French Jesuit Louise-Bertrand Castel took this to the next level by developing a colour harpsichord; “In collaboration with the instrument maker Rondet, Castel drafted a harpsichord with coloured paper strips that appeared on top of the instrument when a

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<sup>4</sup> Ibid. P.15

<sup>5</sup> Campen, C. v. Ibid. "Artistic and Psychological Experiments with Synesthesia." P.9

<sup>6</sup> Ibid.

<sup>7</sup> Ibid.

key was pressed. The paper strips were lit by candle light.”<sup>8</sup> Castel essentially took Arcimboldo’s idea further by adding colours to a similar perception of scale (that is, that deeper pitches indicate a darker colour or shade and higher pitches indicate a brighter colour or shade). Naturally all of the inventions that have come about over the last few centuries did not have consistent scales of colour based on pitch or timbre associations, but the general idea of a pitch/colour association has nonetheless been maintained.

In spite of the early exploration of synaesthesia from a scientific and mathematical background, certain universal perceptions of synaesthesia remain unexplained. However the apparently coincidental similarities in these early studies suggest there is something ingrained in the human psyche that causes us, for instance, to associate deep, low frequencies with dark colours and high, sharp frequencies with light colours. Psychologist Lawrence Marks published a paper in 1978 detailing his experiments on 400 people. “He noted that observations can be made on the dimension of brightness, with bright consonants (e.g. ‘i’ or ‘e’) corresponding to light colours, and dark colours, and dark consonants (e.g. ‘o’ or ‘u’) to dark colours.”<sup>9</sup> Though none of the test subjects were identified as having synaesthesia, these observations show that there are aspects of it that are universal. The human brain can develop “relative synaesthesia”, like relative pitch.<sup>10</sup> In the same way that a particular smell will always be indicative of a certain memory, a particular colour may also be associated with a piece of music (especially if it is in some way related to the experience of first hearing that piece of music). “Relative synaesthesia might be appropriately termed metaphorical; it constitutes another area of study. Indeed, most human beings experience emotional reactions to colour and pitch.”<sup>11</sup>

Relative synaesthesia is connected with the reasons many people listen to music, in that there is always an emotional reaction when one is listening. It could be a sense of being uplifted if listening to a piece such as the final movement of Saint-Seán’s Organ Symphony, or being saddened by listening to the Chorus of the Hebrew Slaves from Verdi’s *Nabucco*. Chromesthesia is an extension of those feelings – an expression of colour that corresponds to texture and musical key. The colours evoked, however, won’t

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<sup>8</sup> Ibid.

<sup>9</sup> Ibid. P.12

<sup>10</sup> Berman, G. Ibid. "Synesthesia and the Arts." P.16

<sup>11</sup> Ibid.

be readily apparent to those who can't experience it. The aforementioned inventors were trying to bridge this gap for the rest of the world.

### **The Impact of Synaesthesia on the Lives of Composers**

Synaesthesia is a wonder best understood by musicians and artists. As the nature of colour and sound (and their connection) is so integral to the creative and interpretive process, the concept of them being interrelated is not so difficult to come to terms with for the world's creative thinkers. This link between sound and broader emotional experiences of reality inspires the creative process. "As is known, every musician has a personal semantics of tonalities and an emotional and symbolic conception of them, formed in the course of upbringing and creative development."<sup>12</sup>

Most artists and composers who possess synaesthesia dislike speaking of it, for fear of being misinterpreted by the wider artistic community. Michael Torke, for example, is a composer currently living in New York and is a contemporary synaesthetic artist. His composition *Ecstatic Orange* (a large work for orchestra written early in his career) is probably his best-known creation. It was decidedly a precursor to his later colourful works *Green*, *Purple*, *Ash* and *Bright Blue Music*.<sup>13</sup> Berman recounts a conversation with him: "I found that he at first was reluctant to call himself synaesthetic. But when pressed on the point as to why he so frequently used colour titles in his music, he conceded that he was 'probably' synesthetic".<sup>14</sup> Boris de Schloezer recounts the compositional style of Scriabin:

Scriabin's metaphysical constructions were not only logical, but also graphical; he drew them out, using ruler and compass, with great diligence and accuracy. He endeavoured to represent in line and geometric figures the interrelations he intuitively perceived between the world and the individual, between God and reality, in art, religion, and science.<sup>15</sup>

There is little mention of synaesthesia in Scriabin's biographical material, other than the above. It is possible he felt that it was not a subject worth talking about, in the

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<sup>12</sup> Schloezer, B. d. (1987). *Scriabin: Artist and Mystic*. P.14

<sup>13</sup> Berman, G. (1999). "Synesthesia and the Arts." *Leonardo* 32(1): P.19

<sup>14</sup> Ibid.

<sup>15</sup> Schloezer, B. d. (1987). *Scriabin: Artist and Mystic*. P.58

assumption that he would not be taken seriously. This is another example of the stigma that surrounds synaesthesia and those who identify as having it. Similarly, Olivier Messiaen is recorded as saying:

Complementary colours are like complementary notes and chords... When I hear music, I see in my mind complexes of colours corresponding to complexes of sounds, so it's understandable that colour interests me as well as sound.<sup>16</sup>

Despite this obvious reference to synaesthesia, Messiaen was very uncomfortable talking about his sound-colour association. It is only when pushed by Claude Samuel that Messiaen offers some sort of explanation behind his colour sound association. Berman writes about her interview with Michael Torke, and how synaesthesia seems to have affected his popularity, though in the opposite way.

Unlike Scriabin and Messiaen, whose reputations suffered because of their synaesthesia, Torke's colour associations have served to enhance his early popularity. In this case, the composer himself was afraid that he had 'used' them as a kind of 'hook' (as some have accused Scriabin and Messiaen of doing); therefore he now tends to play down this aspect. He feels that critics have focused on this one facet of his work without truly understanding it or the other aspects of his music.<sup>17</sup>

There has been a shift in perspective over the last hundred years, probably to do with the advances in scientific knowledge and psychological understanding, that has made synaesthesia a much more accepted mental state. Despite this, the lingering stigma caused Michael Torke to exercise caution when speaking about his compositions with regard to synaesthesia. Though it is integral to his compositional process, he hasn't used it merely as a means to garner public interest, nor does he want his synaesthesia to be the only reason that his compositions are popular. Therein lies the difficulty: on the one hand, revealing his condition may generate interest in his work and allow him to stand out from others, yet on the other hand, by doing so he risks his work being treated as a novelty and might be discredited for using synaesthesia as a way to gain popularity. Though many music lovers have been enthralled by the concepts behind Torke's compositions, there has been cynicism from academics and music critics over the years

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<sup>16</sup> Samuel, C. (2003). "Olivier Messiaen: Music and Colour - Conversations with Claude Samuel." P.62

<sup>17</sup> Berman, G. (1999). "Synesthesia and the Arts." *Leonardo* 32(1): P.20

in relation to synaesthesia. One critic, for example, wrote this condescending review of Michael Torke's work:

It seems... that the composer was pursuing some abstruse notion of embodying an 'outline' of colour, which he conceived as an integral part of the thoughts he was expressing in sound. All this is very interesting to those who care to give serious thought to the matter, but the majority of musicians will probably retain their original opinion of the innovation: that it was merely a stage trick to ginger up the dramatic intensity of the music.<sup>18</sup>

So despite the scientific advances of recent years there are still those in the artistic sphere who cannot come to terms with synaesthesia as an exciting facet that enhances creativity. Writers, including Berman, accept synaesthesia and acknowledge that it is a psychological phenomenon that enriches the compositional material of those composers who possess it. She writes on Messiaen, talking about his composition *Couleurs de la Cité Céleste* (1963): "Messiaen wrote a note in the score that 'the form of the work depends entirely on colours. The melodic or rhythmic themes, the combinations of sounds and of timbres, change in the manner of colours.'"<sup>19</sup> Messiaen could not conceptualise his compositions without the colour associations. For him they were one and the same.

The impact on Scriabin's compositions was identical:

Scriabin's composing, far from occurring *despite* the man's eccentricities actually *depended* upon his synesthetic vision. It is primarily because of his capacity to use synaesthesia creatively that Scriabin made his profound contribution to modernism. Indeed, he not only revolutionised piano music, but was also one of the first to abandon key signatures, writing compositions that can be said to predict serial music.<sup>20</sup>

Scriabin was not always respected or taken seriously as a composer. "One critic compared it [*Prometheus*] to a 'pretty poppy show'."<sup>21</sup> Despite this view his music is now hugely respected and his contribution to modernism and the world of art has been recognised.

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<sup>18</sup> Ibid. P.16

<sup>19</sup> Ibid. P.18

<sup>20</sup> Ibid. (Italics in original) P.17

<sup>21</sup> Campen, C. v. Ibid."Artistic and Psychological Experiments with Synesthesia."P.10

However Scriabin's contemporaries did not acknowledge the validity of his synesthetic works. Leonid Sabaneyev, a Russian composer who became the authority on Scriabin,<sup>22</sup> seemed to struggle with synaesthesia as being anything more than an abstract concept.

In his earlier papers, instead of the conventional term 'colour hearing' Sabaneyev used his own term, 'hearing of colours'. At first he declared this phenomenon to be 'strange' and 'rare', then 'interesting' and appropriate to musicians with a 'sensitive imagination and a good ear'. In this case he always placed in inverted commas the words 'audial vision', 'colour hearing', 'colouring' and 'sound vision' – as if to accentuate by this means their non-literal, metaphorical character.<sup>23</sup>

Similarly De Schloezer has moments where he places Scriabin in a negative light; "The determining factor of Scriabin's ideology at the time was solipsism and metaphysical nihilism. 'Nothing exists,' he used to say, 'The only thing that is, is what I create.' In his usage, 'I' represented an empirical person."<sup>24</sup> Even though these writers were close friends to Scriabin, they found it difficult, at times, to take him seriously.

The wider artistic community became more accepting of synaesthesia during the romantic revolution. The idea of sound translating to colour is easier to understand when considering music from the Romantic era. The concepts of harmony were utilised much more loosely in compositions and there tended to be more flow in the melodic material.

By the late nineteenth century, a disparate group of artists, writers, and inventors had become convinced that 'colour music' represented the art of the future. The idea of colour music was symptomatic of a fundamental shift in aesthetic theory... This common acceptance of synaesthesia resulted from two divergent philosophical positions. According to the more romantically inclined artists and writers, the interchangeability of the senses was evidence of mystical correspondence to a higher reality. On the other hand, some artists joined forces with scientific researchers to study synaesthesia as a phenomenon of human

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<sup>22</sup> His book entitled *Reminiscences of Scriabin*, published in 1916, is considered one of the definitive works on Scriabin. Sabaneyev also wrote an extensive analysis of *Prometheus*, and transcribed the piece for two pianos.

<sup>23</sup> Schloezer, B. d. (1987). *Scriabin: Artist and Mystic*. P.60

<sup>24</sup> Ibid. P.76



perceptions. These two schools of thought represent the quasi-mystical and the pseudo-scientific arguments for synaesthesia.<sup>25</sup>

Synaesthesia is highly individualised, in that one synaesthetic person may associate certain sounds with particular colours, but another, when hearing the same sounds, may see something completely different. When a person finds out about the existence of synaesthesia they seem to react in one of two ways: either they disregard it as impossible, or they embrace and try to understand it. A few composers and artists have codified synaesthesia but there is a noticeable lack of consistency in accounts made by those who claim to possess it. As a result, even though there has been a lot of interest and attempts to define it, there is still much that is missing from scientific knowledge of synaesthesia. There is steadily more research coming to light that contributes to the growing recognition of synaesthesia. It is becoming generally more accepted as more synaesthetes, like the author, are making their presence known in the artistic world. Synaesthesia is used in composition, consciously or subconsciously, and is a very important, useful and interesting tool.

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<sup>25</sup> Milo Wold, G. M., James Miller, Edmund Cykler (1996). *Music and Art in the Western World*. P.4

## Section Two: *Prometheus: The Poem of Fire*

Alexander Scriabin was one of the most eccentric and interesting composers of the early 20th century. He possessed synaesthesia and consequently his compositions were heavily based on texture and the interplay between colour, light and sound. The way he composed was revolutionary and completely redefined the way audiences were able to experience music. Scriabin wanted the music to completely envelope them; to help the audience experience it as intensely as possible. He was not able to do this with all of his compositions, but came very close to it with the dramatic ideas he had for *Prometheus: the Poem of Fire*. This section concentrates on *Prometheus* and how Scriabin went about composing the piece.

*Prometheus* was intended to be Scriabin's most visionary composition. "It was to encompass the vision of an apocalyptic ecstasy and the end of the world".<sup>26</sup> There came a point near the end of his life when he actually believed that, should *Prometheus* be performed exactly as he wanted it to be, with coloured lights, staging and scents, it would actually bring about the apocalypse.<sup>27</sup> The way Scriabin experienced music was a significant part of how he approached composition.

During his life he conversed with other composers, namely Rachmaninoff and Rimsky-Korsakov,<sup>28</sup> who also possessed synaesthesia. In his autobiography *Recollections* Rachmaninov recalls a conversation he had with Rimsky-Korsakov and Scriabin on their associations between colour and music.<sup>29</sup>

Rachmaninov was surprised to find that Rimsky-Korsakov agreed with Scriabin about the association between musical tones and colours; Rachmaninov, himself a sceptic, recalled that the two composers did not always agree on the colours involved. Both argued that the key of D major corresponded to yellow, but Scriabin associated Eb major to red-purple, whereas Rimsky-Korsakov was leaning in favour of blue.<sup>30</sup>

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<sup>26</sup> Schloezer, B. d. (1987). *Scriabin: Artist and Mystic*. P.76

<sup>27</sup> Ibid.

<sup>28</sup> Michael Kennedy, J. B. (2012). "Oxford Music Online."

<sup>29</sup> Passos, R. (2012). "Alexander Scriabin, Harvey Spencer Lewis and the Music of the Colours." *Contemporary Music Journal* 14.

<sup>30</sup> Ibid.

Rimsky-Korsakov noted that a scene in Rachmaninov's opera *The Miserly Knight*, in which a treasure chest is opened casting the stage in golden light, was written in the key of D major. Scriabin told Rachmaninov that his "intuition unconsciously followed the laws whose existence you have tried to deny".<sup>31</sup> Here one can observe the inconsistencies between the composers, but also that Rachmaninov may have unconsciously made artistic decisions based on his synaesthesia. Scriabin, unlike Rachmaninov, wanted to use his capacity to see colours to express his ideas in a way that would be accessible to the general public.

### **Texture and its Relation to Colour and Timbre**

The musicological definition of 'texture' is understood to refer to the number of instruments and parts in a musical score, and whether the composition is monophonic or polyphonic.<sup>32</sup> This paper considers the possibility that a synaesthete's understanding of texture may be based on a tangible sense of density, perceived visually and physically. For the sake of this argument the author will draw upon her own synaesthetic experiences. When hearing a monophonic sound, for example a solo flute line, a thin ribbon of colour is seen that moves with the sound and the contour of the melody. When an entire orchestra is heard, on the other hand, complex colours and shapes fill the entire vision. Thus the synesthetic 'textural' experience is vastly different to common understandings of musical texture.

When considering the author's synaesthetic experiences, the size and colour of the shapes are related to the timbre of each instrument. The sound of a flute, for example, is a thin, moving white or silver ribbon whereas the sound of a cello is a much thicker yellow and blue ribbon against a red background. The colours are a manifestation of the different sound qualities of the instruments. In the context of several instruments, many colours and shapes appear to be swirling around at the same time. Some instrumental colours are clearly visible but they also meld into new shapes when amalgamated with other instrumental colours. This acknowledges the notion that, for example, one violin may have a very specific tone colour, but when played with an entire string section it

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<sup>31</sup> Ibid.

<sup>32</sup> Turek, R. (2007). *Theory for Today's Musician*. P.63

only makes up a portion of the sound and the overall effect is redefined. The experience demonstrates the inherent synaesthetic link between texture and tone colour.

This textural and timbral analysis of *Prometheus: The Poem of Fire* has been included as it gives a personal insight into how Scriabin's synaesthesia impacted on his compositional ability. The author has made use of her experiences in order to analyse the role of synaesthetic interpretations in the composition and intention of the piece.

Scriabin had pitch colour associations that have been outlined by Sabaneyev.<sup>33</sup> This sheds some light on how Scriabin thought and how he would have used key and pitch in his compositions. The individual pitches are different in colour to those colours associated with the musical keys as referred to in his conversation with Rimsky Korsakov.

C: red  
 G: orange  
 D: yellow  
 A: green  
 E: whitish blue  
 B: similar to E.  
 F sharp: blue, bright  
 D flat: violet  
 A flat: purplish-violet  
 E flat: steel colour with metallic sheen  
 B flat: similar to E flat  
 F: red, dark<sup>34</sup>

This analysis aims to validate Scriabin's compositional style and to observe how his synaesthesia informed the creative process of *Prometheus*. In order to do this one must first consider the role of the light organ. This instrument creates the backdrop to the entire piece and there is very little movement in its part. Because the light organ holds sustained notes the colours that it exudes change very gradually. Scriabin used the light organ in this way so as to create a backdrop of one or two colours and let the orchestra

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<sup>33</sup> Schloezer, B. d. (1987). *Scriabin: Artist and Mystic*. P. 50



<sup>34</sup> Ibid.



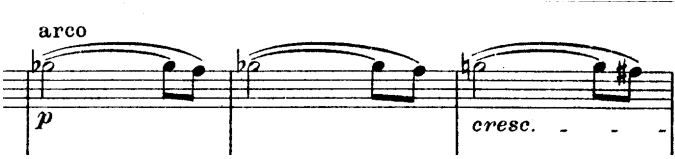
be the focal point of interest. The colour associations mentioned in the analysis are indicative of what Scriabin saw.<sup>35</sup>



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<sup>35</sup> When referring to the pitch/colour associations as outline by Sabaneyev.



## Analysis: *Prometheus: The Poem of Fire*



Bar	Melodic Directions and Notes	
23-24	Textural rhythmic and melodic figure played by cor anglais, clarinet and strings.	 <p>Visually this creates a flash of colour on the otherwise fluid and slowly moving canvas of sound. When considering Scriabin's pitch/colour associations, this section is green and blue (the light organ is playing sustained notes on an A and an F sharp).</p>
33	Triplet grace notes played by the piano.	 <p>Once again these represent a flash of colour (purple, red and green). The light organ is playing an F and</p>



50-53	Piano plays quintuplet semiquaver figures.	 <p>There is little indication in the piano part as to what the harmony could be, as in the rest of the composition. This is a textural and colourful device in that it evokes a spark of colour against the sustained notes of the wind section. This section becomes a mix of red, blue and orange.</p>
67	<i>Très animé, étincelant.</i> (Very animated, twinkling/sparkling.)	 <p>Scriabin achieves a sparkling effect by directing the strings to tremolo at this point. The nature of a tremolo reiterates the note and each colour, creating a blurred and animated effect. The light organ also plays a little bit of melody. This evokes the sense of ‘twinkling’.</p>
105	<i>Avec un intense désir. En animant.</i> (With an intense desire. Animated.)	 <p>This is also the first time that the violin has a solo line, which is where the sense of desire comes from. The quaver at the end of each bar creates the impression of a heart beating, which evokes the ‘desire’. The chromatic movement upwards is also very evocative of passion.</p>

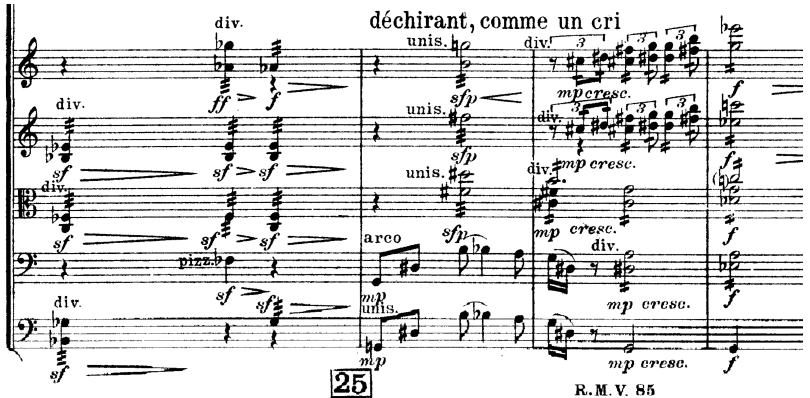

115	Violas and violins: Trills in their descending figures.	 <p>The trill creates a pearlescent effect from the orchestra, especially when played by strings. It essentially makes the overall effect glitter. At this point there is also a solo flute and cor anglais introducing a new theme. The overall outcome is that the composition shimmers.</p>
119	<i>voilé, mystérieux</i> (veiled, mysterious)	<p>There is also a marked difference in dynamics here, mostly due to the sudden dynamic change in the strings to <i>pianissimo</i>. That in itself makes the orchestra sound more veiled and mysterious by comparison. The light organ is playing a B flat and a B natural, which makes the background colours light blue and silver.</p>
139	<i>Enthousiasme</i> (enthusiasm).	 <p>The entire orchestra also plays at this point. The quintuplet figure creates the impression of a faster moving tempo, to account for the desired enthusiastic sound.</p>







145	<i>Limpide</i> (limpid).	<p>There is much less movement in the orchestra here. There is some in the violin parts: they are essentially playing a written out trill (see below). The cellos are playing in fifths, which keeps the harmony quite open and achieves the clear sound that Scriabin was after. There is not much happening in the orchestra so the visual accompaniment to this section would be very simple, hence achieving the open and clear sound that is desired. The light organ is playing a B flat and a C, which makes the background colours red and silver.</p> 
146	<i>Sourd, menaçant</i> (Deaf/dull, menacing.)	<p>All instruments at this point are playing a single note (tremolo in the strings section and triplet rhythm in the winds). The trombone plays an open fifth (F sharp to B natural). The dynamic marking is also <i>fp</i> for all of the instruments (except trombone). There is a huge textural change over this bar. The visual accompaniment would be strikingly different to that of bar 145. The light organ changes notes and colours in bar 147, to B natural and B flat, making the colours blue and silver.</p>
163	<p>Direction for flute and oboe: <i>Onduleux</i> (undulating). Seems like a strange direction, given the figure played is quite a long, sustained line.</p>	 <p>It would make more sense to be in the violin part, as they are playing semiquaver figures. Scriabin could have put the direction in the flute and oboe part to indicate that the melody should be played in one breath. The light organ plays a B natural which makes the background pale blue.</p>

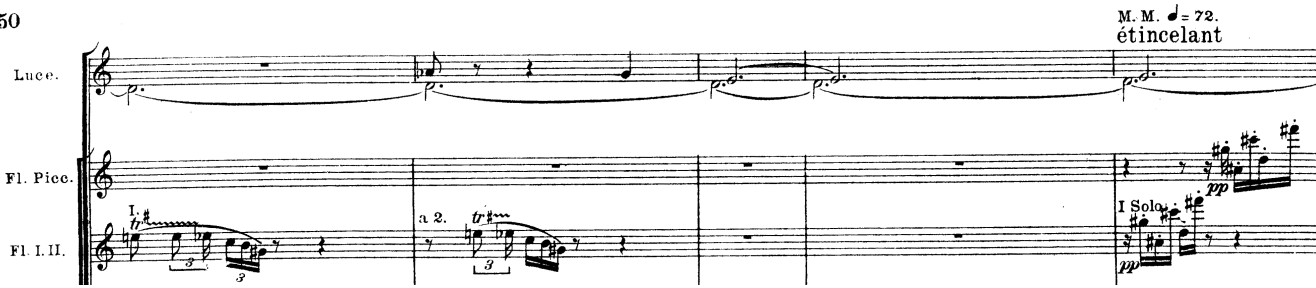
215	<p><i>Soudain très doux et joyeux</i> (suddenly very sweet and joyful).</p>	<p>The tempo marking is also faster here (it has gone from <math>\text{♩}=80</math> to <math>\text{♩}=92</math>). The clarinet and piano play an ascending quintuplet that contributes to the sense of joyfulness.</p>  <p>The light organ plays a C and a D, which makes the background colours red and yellow. This is a much warmer, happier colour than the pale blue from the previous section.</p>
236	<p><i>Avec défi, belliqueux, orageux.</i> (Challenged, aggressive, thunderous).</p>	<p>The strings are now playing a chromatic sextuplet melodic figure.</p>  <p>The violins had been playing pizzicato up until this point, but the entire string section is now playing arco. The texture becomes much thicker once the entire string section is playing like this. The colours become much bigger and brighter.</p>

239	<i>Avec un splendide éclat</i> (with a splendid brightness)	<p>At this point the light organ is playing an A flat and a C natural. To Scriabin these would evoke a purple and red background. The strings create the sense of ‘brightness’ with their ascending melodic pattern.</p> 
255	<i>Orageux</i> (thunderous)	<p>At this point the light organ plays a C and a B flat. This creates, for Scriabin, a red and metallic silver background. The strings play an ascending quintuplet:</p>  <p>This creates the ‘thunderous’ sound. Given that each note is a different colour for Scriabin, this part would be very colourful and striking, further evoking the turbulent experience that Scriabin wanted the audience to have.</p>

261	<i>Déchirant, comme un cri</i> (agonising, like a cry/scream).	<p>The light organ is playing an A and a C so the background colours are red and green. This is not a visually cohesive combination and would be visually uncomfortable, hence evocative of agony. The concept of the ‘cry’ goes over 2 bars in the string section. They play ascending triplets and crescendo at the same time until they reach a diminished A 7 chord.</p>  <p>This is one of the only instances of clear harmony in the entire piece.</p>
Bar 264	<i>Subitement très doux</i> (suddenly very sweet).	<p>The background colours here are red and metallic silver (C and B flat). The viola plays a trill and the first flute plays a semi retrograde version of the first theme.</p>  <p>The celli play a pizzicato G diminished chord. There are only four instruments playing with the light organ at this point, hence the dramatic change in texture, colour and the added sweetness.</p>



301	<i>Avec une joie éteinte</i> (With a lacklustre joy)	The sense of lacklustre is achieved by the <i>pianissimo</i> dynamic direction. The colour background is two shades of red here (F and C).
309-310	<i>Avec emotion et ravissement, plus voile mysterieux</i> (With emotion and rapture, more veiled and mysterious)	<p>The retrograde theme comes back in the Flute and cor anglais part.</p>  <p>The light organ changes to a D (this makes the background colour yellow). The chromatic nature of this section adds to the sense of mystery.</p> 
324	<i>Suave, charmé</i> (mellifluous, charming).	<p>The light organ plays an F sharp and a D here, which makes the background colour blue and yellow. The mellifluous sound comes from the harp cadenzas (they create the sense of flow).</p>  <p>The first violins play what essentially is a written out trill, which also adds to the sense of flow.</p> 

338	<i>Étincelant</i> (Twinkling)	<p>The light organ plays a D and an E, which gives this section a yellow and light blue background. The ‘twinkling’ comes from the flutes, cor anglais, tubular bells and celeste. They each play a melodic figure that has very large leaps in it.</p> <p>50</p>  <p>Visually, especially considering the timbre of these instruments, this would create a similar effect to ‘twinkling’ stars.</p>
340	<i>De plus en plus animé</i> (Increasingly lively)	<p>The texture is thickened by the introduction of the string section at this bar, which also adds to the sense of animation.</p>
370	<i>Sublime</i> (Sublime)	<p>The light organ plays a D here, which is yellow. The horns and strings play the original theme at this point (off the back of a very lively, full textured section), which greatly calms down the piece and creates the sense of ‘sublime’.</p>





414


*Flot lumineux* (buoyantly  
luminous)


The light organ is thoroughly playing the melody by now and the woodwind section is providing a call and response/harmony.


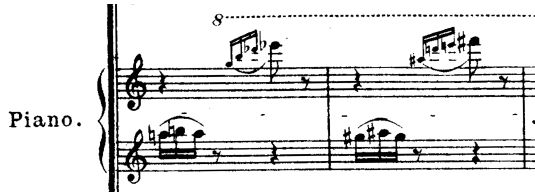
flot lumineux 42

The musical score for measures 41 and 42 of the piece 'Flot lumineux'. The score is written for a large ensemble. The top staff is for 'Luce' (light organ) and features a melodic line with a fermata. The woodwind section, including Flute Piccolo, Flutes I and II, Cor Anglais, Clarinets I, II, and III, Clarinet Bass, Bassoon, and Trumpets, provides call and response patterns. The string section (Tr-ba I) is also present. Dynamics include *mp*, *p*, and *pp*. The tempo is marked *42*.

The colours that it exudes are now changing very rapidly. The piano is playing arpeggios and the strings are playing a mix of *tremolo* and *pizzicato*.

434	<i>Aigu, fulgurant</i> (high pitched, dazzling)	<p>In this section the texture suddenly becomes much thinner. The only moving parts in this section are the piano and the light organ. The strings and winds interject with high-pitched quavers at the beginning of each bar, which creates the sense of being dazzled.</p> 
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450	<i>Extatique</i> (Ecstatic)	The light organ calms down at this point and goes back to playing sustained minims. The ecstatic comes from the clarinet and oboes that play an ascending quintuplet. The harp also plays a descending, chromatic <i>glissando</i> . It is at this point that the piece slightly loses the sense of structure and symmetry, adding to the erratic idea that Scriabin was aiming for.
458 - 461	<i>Animé</i> (animated) <i>Étincelant</i> (blazing, twinkling).	<p>The ‘twinkling’ effect from bar 338 comes back in the flutes and tubular bells at this point.</p>  <p>All of the different melodic ideas are all starting to become melded into one, which creates the sense of animation.</p>
464	<i>De plus en plus large.</i> (getting wider and wider).	The texture becomes gradually thicker in anticipation of the choir. This creates the sense of the sound getting ‘wider’.
467	<i>Avec un éclat éblouissant</i> (with a dazzling brightness)	This is where the choir comes in to the mix. Each theme is being played at some point in the orchestra. The business of the melody creates the brightness that Scriabin sought.

	<p>The choir : <i>Bouche ouverte</i> (mouth open) in the Alto I part.</p> <p><i>Bouche fermée</i> (mouth closed) in the alto II and Bass parts.</p> <p>The words appear to be exclusively vowel sounds. 'E – A – O – Ho – a – e – o, ho – e – a</p>	<p>Each vowel sound creates a different shape. The choir tends to stay in a similar colour pattern, with the exception of the final bars of the piece. The voices fade in and out of the orchestra, adding an extra dimension, and colours, to the piece. The 'E' vowel creates quite a thin horizontal shape, whereas the 'Ah' and 'O' vowels create a much larger, rounder shape. Scriabin decided not to include actual text in this piece, so he was not trying to convey the story of <i>Prometheus</i> with any text. Therefore they are there in order to make the texture different and add to the excitement of the ending.</p>
513	<p><i>Ailé, dansant</i> (winged, dancing)</p>	<p>The piano is the vehicle here. It plays in triplets, thus creating the winged, dancing feel.</p> 
573	<p><i>Dans un vertige</i> (A giddy dance).</p>	<p>Once again the piano is the vehicle here. It plays tennis with the left and right hands, creating the sense of a dance.</p> 
601	<p>The final chord of the piece begins and is held for 5 bars.</p>	<p>This is the only part of the piece where there is a clear sense of diatonic harmony. The final chord is F sharp major. Scriabin saw F sharp as a bright blue colour (refer to table above). The Light Organ plays F sharp so the final visual experience would be a huge wash of blue.</p>

In this 19 minute piece of music there are 34 directions for mood changes (approximately one every 30 seconds). Each descriptive term is used for a specific reason in order for the orchestra to provide an accurate visual experience that will evoke the emotions called for in the direction. Scriabin was so specific with his directions because he wanted to accurately portray what he himself could experience through music. Prometheus is an artwork that strives to combine as many senses as possible to create something revolutionarily evocative.

The choral part, in the same way as the light organ, develops in a very fluid way. For instance, the 'ah' vowel creates a much rounder sound than the 'ee' vowel.<sup>1</sup> Scriabin's use of vowels shows his desire to create a moving shape. Once the choir joins the piece Scriabin is calling upon as many musical textures as possible in order to explore as many visual aspects as possible. He is essentially leading up to the climactic ending of the piece and gradually thickening the texture until the very end.

Not only are there numerous changes in Scriabin's expressive instructions, he is also very specific with his wording – using words such as 'dull, deaf' (bar 146), 'with a dazzling brightness' (bar 467) and 'getting wider and wider' (bar 464). The concept of making a sound wider is undoubtedly visual. The aim is to make the sound fill up the room, though not merely by making it louder. It is wording like this that shows how Scriabin embraced his synaesthesia heavily as a compositional device in order to thoroughly explore musical possibilities.

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<sup>1</sup> As far as the author's synesthetic experience is concerned, human voices have a markedly different shape to orchestral instruments.

## Conclusion

Although there remain those among the artistic community who still doubt the validity of synaesthesia, this paper shows, through the analysis of *Prometheus: The Poem of Fire*, that synaesthesia has the ability to be harnessed for the purpose of genuine artistic creativity. Scriabin had no intention of furthering his popularity by using his synaesthesia as a gimmick – it simply would not have been possible for him to compose without a thorough integration of synaesthesia into the compositional process. The frequency and clarity of his directions is a marked indication of his intention. As such he created a truly remarkable piece of music in *Prometheus*. For Scriabin, the visual and aural aspects of music were undeniably intertwined. One did not exist before the other and one was not created out of the other.

Composers who possess synaesthesia are able to offer a unique perspective and style of composition that would not otherwise exist. It is this style of composition that has led to curiosity from inventors and consequently even the invention of new instruments and means of artistic expression. As a case study, *Prometheus* provides an example of how synaesthesia and music can interact more broadly as a fusion of the arts and senses. This was an artistic approach that was fundamental to Scriabin's understanding of music and composition. Synaesthesia enables artists to develop very different styles of composition, generates new artistic ideas and links different art forms. Despite the gaps in our scientific understanding, synaesthesia must be welcomed into the musical sphere as it provides an important insight into how creative minds work and leads to exciting and innovative artistic exploration.

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