Musical-Space Synaesthesia: Visualisation of Musical Texture

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Abstract

I, Svetlana Rudenko, am a concert pianist. I am also a synaesthete and for me, sound is visual. It has shape. According to recent research (Akiva-Kabiri et al., 2014, pp. 17–29): “In musical-space synaesthesia, … unlike the vertical and horizontal representation of musical pitch tones in the general population, synaesthetes describe a linear diagonal organisation of pitch tones.” Different piano sounds have aroma and texture. The forms I have lived with since childhood are what I call ‘sound landscapes’. I am not alone. Composers such as Liszt, Scriabin, Gubaidulina and Messiaen, as well as artists such as de Córdoba Serrano and Ninghui Xiong, also experienced these impressions. This paper will explore synaesthetic experiences of musical texture, visualisation of sound and tactile sensations of musical texture as well as enhanced cross-modal associations. On the basis of my experiences, I argue that the visualisation of musical texture influences sound perception and even timing: phrases, dynamics and the whole interpretation.

Keywords

Musical-space synaesthesia, visualization, musical texture, archetype

The collection of synaesthetic and cross-modal experiences here includes statements by musicologists and personal experiences of authors. For anyone who ever tried to play a musical instrument, it is obvious that music has the power to engage many different sensory systems and result in a range of sensory responses, mostly auditory. But for some of us, these responses also include the visual and tactile.

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I may feel the shape of the melody, the aroma of timbre or the taste or colour of harmony. I am aware of research in neuroscience which describes synaesthesia as forming “links between different brain maps representing different concepts” (Ramachandran and Hubbard, 2001) and how “different people might, quite without knowing it, subjectively perceive the world in very different ways” (Mitchell, 2010). For me as a teacher as well as a pianist, imagery in piano pedagogy is a very important aspect of my practice and mostly manifests in the impact of sound through touch where the musical instrument becomes an extension of my hands and feelings.

Musicologists have also documented their synaesthetic experiences. For example, Galeyev (2007) asserted that “synaesthesia is the essential component of musical thinking, first of all, music intended to evoke images”. Also Vuoskoski and Eerola (2015) stated that “music-induced visual imagery refers to a process whereby a listener conjures up-either intentionally or unintentionally-visual images while listening to music.” Ward (2008, pp. 37, 38) explored “Maurer’s idea that we all start life as synesthetes” and answered that “we cannot definitely conclude that the baby experiences synesthesia, but we can conclude that there is a far greater mixing of the senses in infancy than at other stages of life”. I believe this implies we all have access, on some level, to this form of thinking and that crossmodal correspondences can be used to help students practice music or art (Rudenko, 2015; Tilot, 2016). I believe that sound can stimulate responses in other sensory modalities and be a creative source in the arts.

Synaesthete artist Dr. José de Córdoba Serrano’s whose engraving ‘Sounds and Textures’ (see Fig. 1), stated that “It was in 1988, after being diagnosed with otosclerosis, through a self-investigation on the transfer of sound to image I discovered the sensation. The sound had not only colors, smell or spatial position but also texture. In most of my exhibitions, unlike other synaesthetic artists who emphasize the color in their creations, in my prints I emphasize the sound texture. I hardly emphasize bright colors because in my perception, textures, visual and tactile feel are predominant. As an artist, primarily a painter, engraving and visual artist, the ‘time’, as parameter, is also present, but the texture is always marked by the rhythm of sound predominantes.” (Córdoba Serrano, 2015, p. 331).

According to Sean A. Day, Ph.D., there are more than 80 different types of synaesthesia, suggesting there are many combinations of sensory experiences (Day, 2015, p. 47). My experience of music of composers following visual metaphors or symbolistic poetry, such as John Buckley’s composition ‘The Silver Apples of the Moon, the Golden Apples of the Sun’ (which draws its inspiration from W. B. Yeats’ poem ‘The Song of Wondering Aengus’), or young Russian composer Veronika Kuzmina’s ‘Musical Pictures to Andersen’s and Russian Fairy Tales’, is that the visual image evoked by the lyrics
dictates the sound and choice of the musical texture. For me, as a pianist, the selection of the repertoire which I particularly enjoy playing is based on the musical texture which gives me vivid imagery and sensation of ‘sound touch’ in my hands.

Time-signature also gives me pulsations of musical texture and has a tactile sensation. I feel it in something I call ‘Cross Waves’ (see Fig. 2 for an illustration). For example, in Rachmaninoff, Prelude No. 12, G sharp-minor, op. 32, the time-signature is 12/8 with four groups of six semiquavers figurations and I experience corresponding feelings in my hands. I ‘see’ the shape of melody by the pitch and could relate my experience to what Akiva-Kabiri described as “linear diagonal organisation of pitch tones” (Akiva-Kabiri et al., 2014).

Synaesthete composer Sofia Gubaidulina describes her similar experience of the spatial presentation of sound as follows: “...I hear a huge, shapeless, multi-faceted sound, absolutely fascinating, with everything piled up

Figure 1. M. J. de Córdoba Serrano, Sounds and Textures.
together in a way you could never notate — something which exists outside time, . . . and I consider it a duty to transform it from vertical to horizontal.” (Kurtz, 2007, p. 223). In her late compositions she used the Fibonacci series to ‘balance musical form’, in much the way that other synaesthete composers organise their compositional language in a way that is specific to an image (archetype in the case of Scriabin) that is audibly and visually recognisable in musical texture. The following are examples of synaesthetic musical analysis based on the extraction of archetypes/images, from Scriabin’s Désir, op. 57 (Fig. 3).

1. Red: The Eternal Feminine, “calling for wake up”, “...illuminate yourself, hear your prophetic voice” (Smith, 2013, p. 54).

2. Blue: Masculine Principal, “...I do not see my path in the starred attire” (text from Mysterium (Morrison, 2002, p. 315)).


Susanna Garcia described the six most common gesture archetypes in compositions of Scriabin and pointed out that “Scriabin repeatedly conjoined certain types of expressive language with specific musical gestures thus creating a body of musical symbols consistent throughout ...the late works” (Garcia, 2000). Miniature compositions on the piano were the laboratory work
for Scriabin in preparation for bigger orchestra compositions. He planned his final unfinished composition *Mystère*um as a multisensory drama and his *Prometheus: Poem of Fire*, op. 60, as “an entirely new genre: a ‘symphony of sound’ counterpointed by a ‘symphony of light’” (Gawboy and Townsend, 2012). He took many ideas from the theosophy movement of theosophist leader Madame Blavatsky and her theory of colors.

For me, the visualisation of musical texture also changes the perception of time. On the basis of my experience, I would argue that synaesthetes hear the
pulsation of musical texture layers in multiple timelines. For example, Johnson describes Oliver Messiaen’s texture as: “The effect is one of two strands of music moving at different tempos, with the consequence that the functions of tempo and duration overlap in much the same way as the functions of harmony and timbre are made to overlap by use of added resonance” (Johnson, 1989, p. 38). Anatole Leikin analyzed transcriptions of the piano rolls, which Scriabin recorded on the Hupfeld and Welte-Mignon reproducing pianos in 1908 and 1910. Leikin (2011, p. 32) stated that “When Scriabin’s performing tempo fluctuates continuously and widely and yet the average tempo coincides with the published metronome indication, it means that Scriabin keeps concurrently, side by side, two timelines”. Leikin continues by stating that: “Those who heard the composer play noticed that even in the most intricate musical fabric he separated the layers of texture so that all the voices were clearly enunciated.” In this way Scriabin keeps what I call a ‘volumetric sculpture of layers’.

In another document of synaesthetic experiences in music, Kievman (2012) outlined that: “Timbre, Klangtint, or tone-colouring was used with startling originality by Richard Wagner during the 19th century, and raised to a science in the early/mid 20th century by Scriabin, Sibelius, Ives, Varese, Messiaen, Ligeti, Nono and several other composers.” Kievman refers to Hermann von Helmholtz’s ‘On the Sensations of Tone’ and describes timbre as “wave form, amplitude, spectral envelope, the range between tonal and noise-like character, the time envelope in terms of rise, duration, and decay” (Kievman, 2012).

In conclusion, synaesthetic multisensory experiences of sound and musical texture remain an inspiration for creative practice and musical performance. Furthermore, synaesthetic experiences or volumetric visualisation of musical texture, projected into a synaesthetic ‘inner screen’ or ‘mind’s eye’ (Ward, 2008, p. 14), change the perception of time and interpretation of musical elements. I believe these experiences could be used in pedagogy as a more creative alternative tool, for example, to substitute the blind copying of an instructors’ playing.

References


