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Was Scriabin a Synesthete?

B.M. Galeyev
and I.L. Vanechkina

Our research group, originally merely an amateur group, is now the academic Prometheus Institute—so named because, since our first light-enhanced performance in the U.S.S.R. of Scriabin's *Prometheus: The Poem of Fire* in 1962, we have continued to explore and develop Scriabin's ideas of artistic synthesis (see publications in English [1,2]). The analysis of the genesis of Scriabin's "light symphony" idea, realized by the inclusion of the "Luce" part in the *Prometheus* score [3–9], resulted in our publication of a special monograph on the subject [10] (aspects of this research were also published in English in several shorter papers [11–14]). The course of this work brought us to an investigation of Scriabin's "color hearing," because it was generally taken for granted that the "Luce" part was closely connected with this phenomenon.

Turning to the literature on "color hearing" (and, more generally, on synesthesia, of which "color hearing" is a specific case), we encountered the following phenomenon. In both Russian and foreign literature, and in popular and scientific literature, from the beginning of the century, something like the following statement, made as if axiomatic and requiring no proof, has circulated: "There exists a unique (strange, wondrous, mysterious, etc.) faculty of human psychics, an inherent ability in some individuals—so-called synesthetes—to see the sounds of certain instruments or certain tonalities as various colors." This statement has been based on the supposition that this vision is real, constant and even inborn, beyond the will of the individual. Justification of this supposition has relied upon the etymology of the term "synesthesia" itself as "co-sensation" [15]. Of greatest importance for this article, however, is that Scriabin has been mentioned without fail as first in a list of such synesthetes (usually followed by such well-known names as Rimsky-Korsakov, Kandinsky, Chiurlionis and Messiaen).

Side-by-side with our pride that among these names there appeared a large number of representatives of Russia (joke!), doubts crept in: if the creation of the "light symphony" was determined by the composer's unique (strange, mysterious, etc.) faculties, would this imply that the light-music itself is an anomalous, unique (strange, mysterious) art? And must the spectators of this art, to adequately apprehend the ideas of such a composer, also be unique synesthetes? Where then could we find them—such a collection of the strange and mysterious? And if we were able to find them, could it be guaranteed that their perceptions would not clash with one another (because practically all these researchers have asserted that synesthetic abilities are very personal, different)?

Such questions occur as a matter of course for anyone who is interested in the problem of "color hearing" in the context of its connections with the aims of light-music synthesis. In this case, there is no unambiguous answer that all researchers will understand and accept. In order not to drown in scholas-

tic theorizing, let us leave this question for another time and limit ourselves to the question posed in the title of the paper. At the same time let us forgo any analysis of the literature on the subject that has accumulated over the last 80 to 90 years. Let us instead recall the words of Leonardo da Vinci: "Why drink from a jug if you can drink from a fountain?" If a skein is tangled, one merely has to find the beginning of the thread. In this case we have an advantage: Scriabin's originals are easier for us to access than they are for our Western colleagues. And that is why we feel it our duty to reconstruct and to present the original materials, so that it may be possible to determine at last: Was Scriabin an actual synesthete or not? Let us turn to the facts: the composer's own confessions, as documented by his contemporaries; the handwritten documents preserved in his archives; and, of course, the materials on his "color hearing" published in Scriabin's lifetime, evidently with his approval. This is the only possible way, if not to make all things clear, then at least not to become a victim of the trivial misapprehensions that may arise from using information obtained at second- or third- (etc.) hand.

The author of the first special publications on Scriabin's "light symphony" and his "color hearing" was his friend and biographer Leonid Sabaneyev (1881–1968). Educated in both the conservatory and the university (in the natural sciences), he concerned himself with this aspect of Scriabin's creative work more actively than other researchers. His first special paper, "On Sound-Color Correlation," appeared in the Russian magazine *Muzyka* early in 1911, coincident with a publication of the score of *Prometheus* [16]. Only a month later, Sabaneyev mentioned Scriabin's "color hearing" in the same magazine in connection with the discussion of the "light symphony" idea [17]. This text on *Prometheus* is of special value because, in German translation and with some addi-

ABSTRACT

This survey and summary of documentary material on Scriabin's "color hearing" is being presented for consideration by researchers studying his ideas of light-music synthesis. On the basis of their analysis, the authors conclude that the nature of Scriabin's "color-tonal" analogies was associative, i.e. psychological; accordingly, the existing belief that Scriabin was a distinctive, unique "synesthete" who really saw the sounds of music—that is, literally had an ability for "co-sensations"—is placed in doubt.

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This text is part of the *Leonardo* special project on Synesthesia and Intersenses, guest edited by Jack Ox and Jacques Mandelbrojt. Synesthesia is the phenomenon in which the stimulation of one sense modality gives rise to a sensation in another sense modality; for example, some synesthetes see colors when they hear music. This special project is devoted to the exploration of the nature and history of this phenomenon, as well as the discussion of intersense relationships, artworks and experiences.

tions from the first paper, it was soon reprinted in the famous collection of articles *The Blue Rider*, giving access to information about Scriabin's "color hearing," albeit in brief, to a Western readership [18]). Sabaneyev published more serious material on this "color hearing" a year after the composer's death, as a separate paper [19] in a chapter on the light-symphony in his monograph on Scriabin [20]. In these latter sources, however, it is sometimes hard to distinguish Sabaneyev the biographer from Sabaneyev the commentator. So his above-mentioned papers of 1911 and, especially, the diary records of 1910–1915 about his meetings with Scriabin, which Sabaneyev managed to publish in 1925, before his emigration to France, are of greatest importance for us [21]. Another basic reliable source on the problem that interests us is a paper by the English psychologist Charles Mayers, written after a special 1914 appointment with Scriabin in Cambridge [22].

All other publications on Scriabin's "color hearing"—both in Russia and abroad—are secondary sources or, at best, are based on the materials mentioned above (no other reliable material exists, except for particular passages in the reminiscences of his contemporaries).

In his earlier papers, instead of the conventional term "color hearing," Sabaneyev used his own term, "hearing of colors." At first he declared this phenomenon to be "strange" and "rare," then "interesting" and appropriate to musicians with a "sensitive imagination and good ear." In this case he always placed in inverted commas the words "audial vision," "color hearing," "coloring" and "sound vision"—as if to accentuate by this means their non-literal, metaphorical character. In his search for the true nature of "color hearing," Sabaneyev, like Scriabin himself, laid aside from the very beginning the idea of searching for some "physical" explanation for it. It is informative that from the very beginning of his discourse on Scriabin's "color hearing," Sabaneyev readily used the term "association." At the same time, being educated in the natural sciences, he was always drawn to the idea of explaining "color hearing" as a purely "physiological" phenomenon. But there he was embarrassed by the subjective, personal character of "associations of light sensation."

This then inspired Sabaneyev to suggest a possible psychological explanation for "color hearing", writing, in 1911, "Colors, on the one hand, and

sounds, on the other hand, engender various moods, often similar to one another, therefore—the association of colors and sounds arises" [23].

Sabaneyev was careful not to insist on this interpretation, leaving a decisive answer for the future. But his own observations on Scriabin's "color hearing"—to be accurate, "color-tonal" hearing—seem to substantiate his conclusions.

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. It cannot be the same for all people, as was supposed by the eighteenth-century exponents of the so-called theory of affects (or, more generally, "normative aesthetics"). This semantics of tonalities depends on one's age, one's artistic schooling, the style in which a musician works—in brief, on history and artistic context and also on personal creative preferences.

So differences are inevitable, but this does not imply absolute chaos. Composer R. Schumann clearly noted in his well-known work *The Characteristics of Tonalities*: "We cannot say that this or that feeling, to be fully expressed, calls for translation into music by means of namely this and not any other tonality." But neither could he agree with those who "assert that in every tonality everything can be expressed" [24]. Correspondingly, one's own semantics of colors can be formed in every cultured individual. It is natural to expect that colors and tonalities "similar to one another" (as Sabaneyev said) may become connected by association in the consciousness of an individual (this is called, in exact psychological terms, "association by similarity").

Let us return to Scriabin. Under the influence of various factors, including his enthusiasm for Theosophy, the composer distinguished "spiritual" tonalities (e.g. F sharp major) from "earthly," "material" ones (C major, F major) [25]. Correspondingly, he ascribed certain characteristics to colors: red is a "color of Abaddon," blue and violet, colors of "reason", "spiritual" colors. Therefore, their juxtapositions are a matter of course: C major and F major are red and F sharp major, deep blue. For Scriabin these particular associations were most evident and vivid. And for other tonalities? In the Scriabin Museum's archives there is a list of these, without a date or title, written in Scriabin's own hand. It includes several *different* versions of cor-

relations between various notes and colors. One can see that the composer tried to build up a conception of some kind. It is hard to judge to what exactly it applies, but the connection of this list with "color hearing" or the "Luce" part (conditioned by the latter), is obvious. The main point here is that Sabaneyev also specifically noted in his reminiscences about Scriabin the mentally contrived character of his correlations. The composer did not want to believe that his associations were not compulsory for everyone. He believed that they were universal. "It cannot be personal," said Scriabin firmly, "there must be a principle, must be oneness. A freak of chance—is a ripple on the surface, and the essential must be common" [26]. In searching for this commonality Scriabin built up a system of color-tonal analogies: "The three colors, which are clear to me, gave me three supports," he said, confessing that he derived the colors of other tonalities "theoretically" [27]. Given his aim to create a system of all these associations, he juxtaposed the "allied colors" (arranged in a spectrum) and the "allied tonalities" (as is known, this alliance is obvious when they are arranged into the so-called circle of fifths). Sabaneyev wrote:

Having noticed this consistency, Scriabin filled in missing links in the scale of color-sound accordance and came to the inner certainty that he was right in his theoretical premise. In other words, he began to search the depths of his consciousness for those associations that followed from his theory, and found it easy to call them in [28].

Moreover, the effect of Scriabin's self-suggestion, dependent on the unquestioned belief in the "principle" he had conceived, was so great that he confessed to Mayers (of course, if it was not merely a coquetry of an artist before a scientist), that he sometimes anticipated a change of colors before a change of tonalities itself even took place.

In addition, Scriabin's belief in the universal validity of the system he proposed was such that he gave no explanations of it in the score of *Prometheus*—what colors lie behind the particular notes of "Luce" (and these notes, as we have shown, are fine indications of tonal and harmonic changes; so, "Luce" is a colored visualization of this tonal-harmonic plan, closely connected with the philosophic program of *Prometheus*; but this is a subject for other research [29]).

In any case, accepting Scriabin's system of "color hearing" (to be more ac-

curate, the system of his analogies) as given, we have conceived, for convenience's sake, a graphic notation of it (Fig. 1) [30].

Sabaneyev first published a table of Scriabin's "color-sound" correspondences as far back as 1911. In its contents it largely recapitulates our scheme in Fig. 1, but in Sabaneyev's handwritten notes it assumes more familiar form:

- C: red
- G: orange-pink
- 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 color with metallic sheen
- B flat: similar to E flat
- F: red, dark

For comparison, Sabaneyev included beside this list a table of composer Rimsky-Korsakov's color-tonality associations published shortly before in the Russian press [31]:

- C major: white
- G major: brownish-gold, light
- D major: daylight, yellowish, royal
- A major: clear, pink

- E major: blue, sapphire, bright
- B major: gloomy, dark blue with steel shine
- F sharp major: greyish-green
- D flat major: darkish, warm
- A flat major: greyish-violet
- E flat major: dark, gloomy, grey-bluish
- B flat major: darkish
- F major: green, clear (color of greenery)

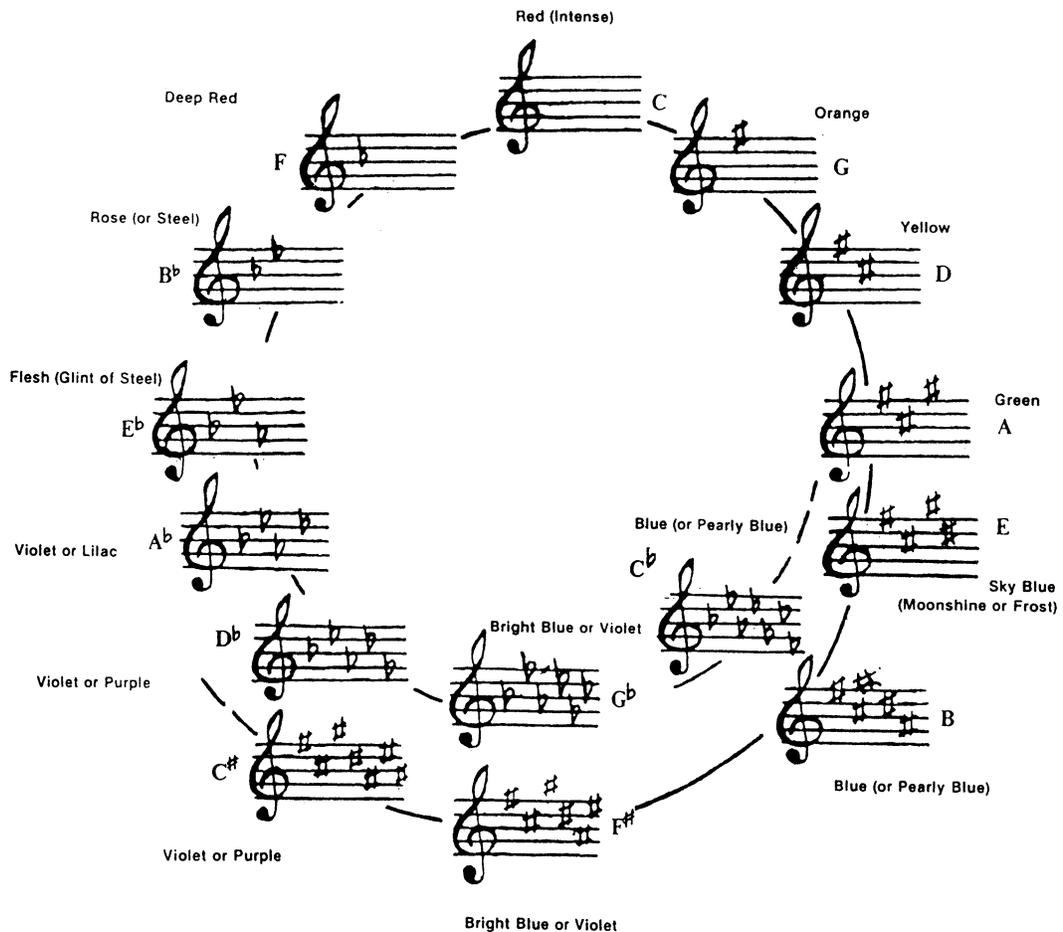
First of all, let's note that in Scriabin's list, Sabaneyev designates tonalities with capital letters: C, G, D, etc. (without the extension "dur", i.e. major). This is widely accepted among musicians, especially in twentieth-century music. Sabaneyev had a further compelling reason for this decision, because in *Prometheus*, Scriabin's harmony was already practically outside the framework of the traditional major-minor system. It is unfortunate that some researchers, especially those who are not musicians, take these signs—C, G, D, etc.—for designations of notes and ascribe to Scriabin a nonsensical version of "color hearing" with elementary, "physical" matter (i.e. seeing in colors the separate tones of the "octave spectrum").

After this remark (regrettably necessary, because this mistake occurs rather

often) let us take stock of Scriabin's list. The theoretical character of his analogies becomes more evident here, because it is clear that, having exhausted the familiar colors of the spectrum, Scriabin also included achromatic colors at the end of the list—for tonalities E flat and B, for example. Sometimes he even called them "ultra-red" and "ultra-violet," i.e. unseen colors (as, let us note, they were also identified by Mayers!).

Being a psychologist, a specialist in the field of "color-hearing" research, Mayers specially emphasized the mental and even artificial character of Scriabin's system of color-tonal analogies. He also was inclined to see their origin in associative derivation, but noted that many (including Scriabin) formed their "color hearing" correspondences under the guidance of a trivial intention to compare different "homologous sequences" (such as the alphabet, the sequence of natural numbers, the spectrum, the sonic scale, the fifths circle of tonalities, etc.). But let us correct Mayers on this point: Scriabin's analogies are not so mechanistic in their motivation: his correlations are based on the equivalence of "complexity" of tonalities and colors (Schumann had defined tonality "complexity" as the number of alter-

Fig. 1. The scheme of "color hearing" correspondences, by A.N. Scriabin.



ation signs in the designation of tonalities; in its turn, color “complexity” can be defined according to its place in a spectrum: colors at the red end are “simpler” than colors at the blue end).

In comparison with Scriabin’s, Rimsky-Korsakov’s color-tonal associations, as Sabaneyev notes, have a more natural, spontaneous character. That is why, let us add here, Rimsky-Korsakov’s correlations were apparently preferred to Scriabin’s speculative scheme, at least by those musicians who lived and worked in Russia in the mid-twentieth century (this was shown in our opinion poll of the members of the Composers’ Association of the U.S.S.R. in the 1960s and 1970s [32]). This does not mean that one of them, Rimsky-Korsakov or Scriabin, had “better” or “worse” “color hearing.” Rimsky-Korsakov proceeded from his personal understanding and Scriabin from *his* (perhaps it was also relevant that the former had perfect-pitch hearing and the latter, as is known, relative [33]).

If we use a method of complex research in arts [34], it becomes clear that Scriabin arranged associations to further his initial aim: that the “light” part should “duplicate” the effect of the music (later he gave up this idea of “duplication” as trivial [35,36]). Such an understanding of synthesis reflected a theosophical-symbolistic attitude to the search for esoteric, universal “correspondences” (being a great artist, Scriabin overcame this attitude in the post-*Prometheus* period of his creative work [37,38]). A close analysis shows that, in general, Scriabin regarded his “color-sound synesthesia” (or “color hearing”) as less important than “light-sound synesthesia” (“light hearing”); the latter allowed him to attain an effect of “effulgence” or “luminosity” in the music itself even without real light [39,40]. But to address all these aspects of the problem oversteps the question of our title.

To summarize this point, we share Messiaen’s opinion; his own “visions” of color in music were much clearer than Scriabin’s; nevertheless, he regarded such words as “synesthete” or “synesthesia” with suspicion. According to his own account, his “seeing” of colors in music was brought to life by the “inner vision,” conditioned by his mind, and could not be compared with what, for example, a person perceives while under the influence of drugs, when anyone can indeed become a “synesthete,” involuntarily beholding real color images inspired not by spirit but by chemicals [41–43]. But here we step into that

“prohibited area” where T. Gautier (in his work “The Fanciers of Hasheesh”) and C. Baudelaire (in his book *Artificial Paradises*) would go and where Scriabin refused, declining with resentment an offer to change his consciousness by such brute means [44]. But that, as they say, is a plot for another novel.

We regard it possible, if necessary, to prove, based upon the documentary evidence, that Rimsky-Korsakov, Chiurlionis and Kandinsky also were not “synesthetes” in the clinical sense of this word, which implies the normal ability of metaphorical thinking to be some “brain anomaly.”

It is, furthermore, interesting to note that the German word for “timber” is *klangfarbe* (“color of sound”); can we then consider the whole population of Germany “synesthetes”?

References and Notes

1. B. Galeyev, “Music-Kinetic Art Medium: On the Work of the Group ‘Prometei’ (SKB) Kazan, U.S.S.R.,” *Leonardo* 9, No. 3, 177–182 (1976).
2. B. Galeyev, “Fire of *Prometheus*: Music-Kinetic Art Experiments in the U.S.S.R.,” *Leonardo* 21, No. 4, 383–396 (1988).
3. B. Galeyev, “Scriabin and Eisenstein (Cinema and Visual Music),” *Volga* No. 7 (1967) pp. 150–162 (in Russian).
4. B. Galeyev, “Scriabin and Development of the Idea of Visual Music,” in *Music and the Present* No. 6 (Moscow: Muzyka, 1969) pp. 77–142 (in Russian).
5. I. Vanechkina, “The Idea of Synthesis of Music and Light in the Creative Work of A.N. Scriabin,” in *Light and Music Conference Proceedings* (Kazan, Russia: KAI, 1975) pp. 42–44 (in Russian).
6. I. Vanechkina, “The Experiments of Art Group SKB ‘Prometei,’” in *Materials of the Conference of Young Scientists and Specialists of Tatarstan* (Kazan, Russia: KAI, 1971) pp. 63–65 (in Russian).
7. I. Vanechkina, “On the Light-Color Designs of A.N. Scriabin,” in *Matters of History, Music Theory and Musical Upbringing* No. 2 (Kazan, Russia: KGPI, 1972) pp. 119–152 (in Russian).
8. I. Vanechkina and B. Galeyev, “Conception of Synthesis of Arts of A.N. Scriabin,” *Proceedings of the Third ‘Light and Music’ Conference* (Kazan, Russia: KAI, 1975) pp. 24–30 (in Russian).
9. I. Vanechkina, “‘Luçe’—A Clue to Scriabin’s Later Harmony,” *Sovietskaya muzyka* No. 4 (1977) pp. 100–103 (in Russian).
10. I. Vanechkina and B. Galeyev, “*The Poem of Fire*: Scriabin’s Conception of Light-Music Synthesis (Kazan, Russia: KGU Press, 1981) (in Russian).
11. I. Vanechkina, “Castel and Scriabin: Evolution of Light-Music Ideas,” in *From Castel to Our Times, Proceedings of the Conference* (Clermont-Ferrand, France: Université B. Pascal, 1995) pp. 23–29.
12. I. Vanechkina, “Genesis of Alexander Scriabin’s ‘Light Symphony,’” *Ostranenie-97*, exh. cat. (Dessau, Germany: Bauhaus, 1997) pp. 50–56.
13. I. Vanechkina, “Where Do ‘The Blue Riders’ Gallop? Schoenberg, Kandinsky and Scriabin on Synthesis of Arts,” in I. Vanechkina, *Schoenberg and Kandinsky: An Historic Encounter* (Haag: Royal Conservatory, 1998) pp. 95–99.

14. I. Vanechkina and B. Galeyev, “*Prometheus* (Scriabin + Kandinsky),” *Leonardo* 31, No. 3, 183–185 (1998).

15. We have already noted that the root of the ancient Greek word “synesthesia,” *aesthesis* can be translated both as “sensation” and as “feeling,” and even as “sense” (this polysemy, by the way, also exists in the root “sense” in English). See B. Galeyev, *Man, Arts, Technique (A Problem of Synesthesia in Arts)* (Kazan, Russia: KGU Press, 1987) p. 104 (in Russian). In this book, the possibility and necessity of regarding “synesthesia” exactly as “co-sensation,” “co-imagination” or “co-representation” is shown.

16. L. Sabaneyev, “On Sound-Color Accordance,” *Muzyka* No. 9 (29 January 1911) pp. 196–200 (in Russian).

17. L. Sabaneyev, “Prometheus,” *Muzyka* No. 113 (26 February 1911) pp. 287–294 (in Russian).

18. L. Sabaneyev, “‘Prometheus’ von Skriabin,” in *Der Blaue Reiter* (Munich, 1912) pp. 57–68.

19. L. Sabaneyev, “Scriabin and the Phenomenon of Colored Hearing in Connection with the Light Symphony ‘Prometheus,’” *Muzykalny sovremennik* No. 4–5 (Petrograd, 1916) pp. 169–175 (in Russian).

20. L. Sabaneyev, *Scriabin* (Moscow: Skorpiion, 1916) (2nd Ed. 1923) (in Russian).

21. L. Sabaneyev, *Reminiscences about Scriabin* (Moscow: Muzssector Gosizdat, 1925) (in Russian).

22. Ch. Mayers, “Two Cases of Synesthesia,” *The British Journal of Psychology* 7, Part 1, 112–117 (1914).

23. Sabaneyev [16] p. 200.

24. R. Schumann, “Characteristics of Tonalities,” in *History of Aesthetics* (5 vols.), Vol. 3 (Moscow: Iskusstvo, 1967) pp. 368–369 (in Russian).

25. In this text, we use English notation for tonalities. One should keep in mind that in Russian original sources, a slightly different notation is used.

26. Sabaneyev [21] p. 48.

27. Sabaneyev [21] p. 203.

28. Sabaneyev [19] p. 171.

29. I. Vanechkina, “‘Luçe’—A Beam Lightening Scriabin’s Later Harmony,” in *Scriabin: Man, Artist, Thinker* (Moscow: Scriabin’s Museum, 1994) pp. 137–146 (in Russian).

30. This scheme first appeared in Russian editions; see I. Vanechkina, “On Scriabin’s Colored Hearing,” in *Proceedings of the Third ‘Light and Music’ Conference* (Kazan, Russia: KAI, 1975) p. 33 (in Russian); B. Galeyev, *Light Music: Emergence and Essence of the New Art* (Kazan, Russia: Tatknigoizdat, 1976) p. 111 (in Russian). Then it was shown (with the reference to the above publications) in the preface of one of the last American editions of the score of *Prometheus*, written by F. Bowers. See: A. Scriabin, *Poem of Ecstasy and Prometheus: Poem of Fire, in full score* (New York: Dover, 1995) p. 114. In this edition, tonality designations in the scheme are given in English notation, different from the Russian designations. In the scheme of Fig. 1, we preserved the English designations.

To aid in the understanding of Russian books, here is the list of English designations of tonalities with Russian analogs in brackets: C (C), G (G), D (D), A (A), E (E), B (H), F sharp (Fis), D flat (Des), A flat (As), E flat (Es), B flat (B), F (F).

Keys “major” and “minor” are equal to “dur” and “moll” in Russian notation. One can find other small variations in color-hue names over the many years of publications on “color hearing.”

31. V. Yastrebtshev, “On N.A. Rimsky-Korsakov’s Color-Sound Contemplation,” *Russkaya muzykalnaya gazeta* No. 39–40 (1908) pp. 842–845 (in Russian).

32. I. Vanechkina, “A Résumé of Inquiry on Consistencies in ‘Colored Hearing’ among Members of Composers’ Association of the USSR,” in *Papers of VI*

All-Union Acoustic Conference (Moscow: Academy of Sciences of the U.S.S.R., 1968 [in Russian]). In the course of this inquiry, almost all our correspondents specially emphasized the associative, metaphoric nature of "color hearing" in music and excluded from the artistic sphere any clinical cases of "color hearing." See I. Vanechkina, "Soviet Musicians and Light-Music," in *The Art of Luminous Sounds* (Kazan, Russia: KAI, 1973) pp. 89–110 (in Russian).

33. The relativity of Scriabin's musical hearing was noted by the famous poet Boris Pasternak after personal contact with Scriabin. See B. Pasternak, *On Arts* (Moscow: Iskustvo, 1990) p. 41. The determination of "color hearing" (its brightness, nuances, permanence) by absolute hearing is emphasized by many people. Of interest in this context for those who study real "synesthetes" is the example of the musician K. Saragev. He is not known at all in the West, has been little studied in Russia and yet is worth studying using interpretations from aesthetic to neuroscientific. He "heard" tonality in people and in natural phenomena (it might be "si with 112 flats!") and had his own consistent system of "color-tonal hearing." See A. Tzvetayeva, *N. Saradzev. Master of Magic Chime* (Moscow: Muzyka, 1986; Gosizdat, 1988). His unique ability was close to that of Shereshevsky, described by A.R.

Luria in his famous research on the "Sh." phenomenon: A. Luria, *The Mind of a Mnemonist. A Little Book about a Vast Memory* (New York: Basic Books, 1968). But in this case Saragev is of more interest for us because, being a musician, he "saw" the colors of musically organized sounds.

34. I. Vanechkina, "Complex Approach to the Research on A.N. Scriabin's Light-Music Conception," in *Problem of Complex Research of Art Creativity* (Kazan, Russia: KGU Press, 1980) pp. 107–115 (in Russian).

35. B. Galejev and I. Vanechkina, "From 'Prometheus' to 'Mystery,'" in *The Art of Luminous Sounds* (Kazan: KAI, 1973) pp. 29–66 (in Russian).

36. B. Galejev, "The Organic Entire, Not Automatic 'Translation,'" (Leningrad: Nauka, 1977) pp. 266–268 (in Russian).

37. I. Vanechkina, "Scriabin, Theosophy, Synesthesia," in *Modern Laokoon: Aesthetic Problems of Synesthesia*, conference proceedings (Moscow: MGU Press, 1992) pp. 14–16 (in Russian).

38. I. Vanechkina and B. Galejev, "New Mistakes Are the Well-Forgotten Ones," in *Musical Science in the Middle Volga Region: Results and Perspectives*

(Kazan, Russia: Conservatory, 1999) pp. 112–116 (in Russian).

39. B. Galejev, "To Color and Light! (On Evolution of Gravitational Synesthesia in Music)," in I. Vanechkina and B. Galejev [38] pp. 93–97.

40. I. Vanechkina and B. Galejev, "The Real Origins of Scriabin's conception of 'Light Symphony,'" in *New Technologies in Culture and Arts*, conference proceedings (Kazan, Russia: NII "Prometei," 1995) pp. 5–7 (in Russian).

41. C. Samuel, *Entretiens avec Olivier Messiaen* (Paris: P. Belfond, 1967) pp. 32–56.

42. O. Messiaen, *Musique et couleur* (Paris: P. Belfond, 1967) pp. 41–45.

43. H. Watts, "Canyons, Colours and Birds," *Tempo* 128 (March) pp. 2–8.

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