



Leonardo

Man: Art: Technology: The Problem of Synesthesia in Art by Bulat Galeyev; Light-Music in the System of the Arts by Bulat Galeyev

Review by: Stan Voronin

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The book's conclusion applies B. Rauschenbach's general theory of perspective to all known perspective painting systems.

The book transcends academic boundaries, is highly readable, and is richly illustrated in color. The author more or less rejects the apparent "scientific character" of the book, paying more attention to simplicity and attractiveness. In this, he was perhaps inspired by B. Russell's suggestion that a book on philosophy should appeal first of all to a broad cross-section of readers.

THE GEM OF COPERNICUS: THE WORLD OF SCIENCE IN PAINTING

by V. Glazichev. Sovetsky Khudozhnik, Moscow, 1989. 416 pp.

Reviewed by A. Voloshinoff, 6 Delovaja Str., Apt. 14, Saratov, 410040, Russia.

The problem of humanizing scientific and technical knowledge is reaching global proportions. After dedicating the better part of this age to celebrating the heroes of scientific and technological revolutions, we find ourselves at the end of the twentieth century at the threshold of nuclear and ecological catastrophes. This insight invokes an immediate appeal to the eternal healing ideals of Truth, Beauty and Kindness—the need for a revival of this lost trinity has become urgent. *The Gem of Copernicus* approaches this problem from a historical perspective.

The title of the book refers to a gem depicting Apollo playing the lyre, which was used as a personal seal by the Polish humanist and astronomer Nicholas Copernicus. Copernicus's gem not only symbolizes the would-be unification of science and art, but also reflects the past integrity inherent in the culture of the Renaissance, in which Beauty opened the way to Truth, and Truth was filled with the resuscitating light of Beauty.

The first chapter of the book, "Art as the Witness of History," draws a parallel between the history of art and the history of the human spirit, in that the painter serves both the ideals of Beauty and the muse of history, Clio. The construction of ships in Ancient Egypt, the coiffures of Cretian beauties, the design of a fifteenth-century mousetrap, and the observance of children's games in a Dutch village of the sixteenth century—all the details of the surrounding

world of each age and all peoples—are depicted in frescos, sculptures, paintings, drawings and prints throughout history. Thus, art is not only the expression of artists' passions, but also the embodiment of the impassioned witness of history.

The process of cognition is impossible without the accompaniment of visual images to give body to abstract thoughts or visualizations. The creative fantasy of an artist gives visual context to the most courageous creations of thought—from the depictions of the animal-like gods of Ancient Egypt, to scenes of earthly paradise and the underworld, to extensive compositions that vividly portray the creation and end of the world, to the visual expression of modern Star Wars. The second chapter of the book, "Thought and Depiction," is devoted to the problems of the visualization of abstract thought throughout the history of painting.

Historically, the painter has played the part of an "image interpreter" of scientific discoveries and inventions. The creation of maps, plans and schemes, and the reconstruction of lost civilizations all resulted from imaginary and conceptual thinking. The chapter "Concept and Image" reviews the mutual influence of central notions of science and art—concept and image—throughout history.

The chapter "Image of a Scientist in Art" looks at portraits of sages, as portrayed in the pictures of ancient Egyptian scribes, ancient philosophers, medieval teachers or certain specific scientists, not only exploring the priesthood of science, but also revealing a number of concrete details regarding the equipment in these scientists' studies and laboratories.

In the last chapter, "Artist as a Researcher," Glazichev reflects on the important function of art as a cognitive process. In doing so, he calls attention to the function of research by artists themselves. For painters—who throughout the centuries have experimented with the technology of depicting three-dimensional space on the two-dimensional plane of a canvas, while investigating the interaction of line and volume, form and light, and light and colour—are researchers, whether they intend to be or not.

The book is richly illustrated with images of cave paintings, Ancient Egyptian reliefs, archaic friezes, medieval engravings and Renaissance paintings, as well as with the creations of

suprematists and works by Kandinsky, Escher and DalÀ. The illustrations complement the equally important, although comparatively small, text. The successful design of the book, the balance of its illustrative and textual material, proves it is possible to reach harmony of concept and image—of science and art—an idea of which the author is a passionate advocate.

MAN—ART—TECHNOLOGY: THE PROBLEM OF SYNESTHESIA IN ART

by Bulat Galejev. Kazan University Press, Kazan, Russia, 1987. 264 pp.

LIGHT-MUSIC IN THE SYSTEM OF THE ARTS

by Bulat Galejev. Kazan Conservatory, Kazan, Russia, 1991. 88 pp.

Reviewed by Stan Voronin, Krasnodonskaya Str., 19-13, St. Petersburg, 195176, Russia.

Over the past 2 decades in the former Soviet Union, Bulat Galejev has become known as the leading authority (I do not hesitate to use the definite article here) on synesthesia and light-music (the latter also known variously as audio-visual music, color music and lumina music). His numerous publications on these—and related—subjects have recently been supplemented by two books—the monograph *Man—Art—Technology* and the manual *Light-Music in the System of the Arts*.

The 1987 monograph provides an exhaustive study of synesthesia in art. The scientific and technological revolution of our age, with its technicalization of culture, brings to the fore the intrinsic value of the human factor in new "techno-artistic" areas of creativity—such as cinema, video, and light-music (which is not to say that synesthesia had previously been overlooked by scholars of belles-lettres, where synesthesia was manifested in the artistic word). The author gives a detailed critique (at times hypercritical) of the existing schools of thought regarding the nature of synesthesia and its psychological basis.

The book admirably outlines the full scope and significance of synesthesia. I would add, however, that not only is the study of this phenomenon conducive to the review of other (seemingly extraneous) fields, such as, for instance, sound symbolism (of which Galejev is fully aware: see p. 239)—but the reverse is

also true. Take, for example, the notion of synesthesia (a derivative of phonosemantic studies), highlighting the inextricable presence of the emotive factor in any synesthetic transfer (S.V. Voronin, "Sinestezija i zvukosimvolizm," *Tezisy VI Vsesojuznogo simpoziuma po psixolingvistik i teorii komunikacii* [Moscow, 1978]). Or, consider the new comprehensive linguo-psycho-physiological definition of synesthesia (M.Ja. Sabanadze, "Sinestezija v podjazyke muzykovedenija," thesis paper, the abstract of which is included in the brochure *Autoref. kand. diss.* [Leningrad, 1987]). The latter appeared, incidentally, too late for the 1987 monograph. It could have been taken into account for the 1991 manual, however.

Galeyev issues a timely interdisciplinary call to psychologists, to specialists in esthetics and art, to philosophers and to linguists—an appeal to join forces in probing the essentially interdisciplinary nature of sensory interaction, notably with regard to art. As to the value of the interdisciplinary scholarly probe, compare the following: "Interdisciplinary study is fusive in nature. It merges neighboring disciplines and ideally achieves a synergistic effect through the merger." (Roger W. Wescott, *Getting It Together: Linking the Humanities to One Another and to the Sciences* [Chattanooga, TN: Univ. of Tennessee, 1990] p. 16).

Reflecting the holistic features of reality, synesthesia is shown to be a complex form of sensory interaction. This phenomenon is considered an essential and fundamental property of artistic thinking. In the evolution of humanity, art has indeed been the primary source of social praxis wherein human synesthetic faculties were formed and fostered—hence, according to Galeyev, the crucial role of esthetics in getting to the core of synesthesia as a psychological entity. A new assessment of art and literature is certainly in order, if we regard the "synesthetic fund" of every consecutive cultural state as socially inheriting the fund of earlier stages. Of particular interest for the philologist is the author's well-grounded conclusion that language and literature are reliable gauges of the dynamics of the "synesthetic fund."

Also discussed are the various manifestations—and functions—of synesthesia in literature (including poetry) and in monosensory arts (painting, music, architecture). The results are instrumental in elaborating upon the principles of audio-visual polyphonic synthesis.

The author's systemic approach enables him to delineate a sound-synesthesia-oriented classification of the arts (see especially p. 191). The basis for this is his comprehensive and detailed classification of various definitions of synesthesia (pp. 92–107)—undoubtedly a pioneering achievement and a breakthrough to fathoming the exact nature of the mystical phenomenon, synesthesia.

The book ends with an outline of possible applications—both theoretical and practical—of the author's ideas and methods.

The 1991 manual *Light-Music in the System of Arts* deals with the principles of classifying the arts, including newly emerging arts linked closely with modern audio-visual technology. In the author's classification, audio-visual music (light-music) adjoins the gestural arts and the dance. It is shown that light-music is, in essence and origin, the art of "instrumental luminous choreography." Historical analysis demonstrates that, on the way to its recognition, this ideal had to overcome numerous obstacles—chiefly of the mechanistic natural-philosophy variety, based on false analogies of the "spectrum-octave" type.

The roots of "musical vision" lie deep in the psychology of human perception; hence the theme of synesthesia in the book. Touched upon are the nature of this phenomenon and its function in art. Discussed further is the fundamental synesthetic element in the pioneering audio-visual musical experiments of N. Rimsky-Korsakov (*Mlada*, 1890), A. Scriabin (*Prometheus*, 1910) and W. Kandinsky (*Yellow Sound*, 1911).

Discarding the trivial idea of simply using light to accompany music, light-musicians arrive at the concept of audio-visual polyphony. A substantial portion of the manual is devoted to the principles of light-music synthesis—both theoretical and practical.

The student is provided with a helpful bibliographical list. To sum up: this is indeed a very useful manual for students of music and—on a wider scale—for all who appreciate the music of the spheres and audio-visual music.

DIVINE SECTION: THREE VIEWS ON THE NATURE OF HARMONY

by I.Sh. Shevelev, M.A. Marutayev and P.I. Shmelev. Stroizdat, Moscow, 1990. 343 pp.

Reviewed by Edward Khakimov, Krasnaya Pozitzia Str., 11-26, Kazan, 420037, Russia.

Since symmetry is the main condition of the development of living and non-living natural forms, it is characterized by universality, which means that it is one of the most important categories in a number of natural and social sciences. The symmetry phenomenon, as it is interpreted in the natural sciences and in mathematics, is widely used in different fields of knowledge. The philosophical interpretation of the concept—of finding the antithesis for it and exploring symmetry/asymmetry relationships—has become a primary topic in recent years. Philosophical and methodological analysis of the symmetry phenomenon has been set forth in works by: Y.A. Urmantzev (1974), N.F. Ovchinnikov (1978), N.P. Depenchuk (1973), V.S. Gott and F.M. Zemlyansky (1981), and in the edited collections *The Symmetry Principle* (1978), *System. Symmetry. Harmony* (1988), and others.

Divine Section: Three Views on the Nature of Harmony is one of the recently published books in the field. The three authors provide interesting points of view on the divine section (golden section) and its correlation with breaks in symmetry. The divine section, based on the proportional correlation between a whole and its parts, is used in architecture, painting and music, as well as in the biological sciences in the analysis of the development of living natural forms.

The book has three parts. The author of the first part, architect I. Shevelov, analyzes the language of spatial images, then correlates it with visual function and consciousness. The basic element of spatial language is the double square, with its geometric structure serving as a constant for the definition of the divine section. Shevelov offers examples of language used in specific stages of architectural development. Considering the golden section to be an example of symmetry/harmony, he defines the conditions for which his method could be used for building living systems. The structure of living forms, analyzed in the context of such concepts as expansion and diffusion, can be considered as a spatial restriction, or limitation, of living systems (p. 57). The author has been developing the idea that living nature can be presented in dynamic, geometric form by means of the mathematical methods used for analyzing the golden section. One important deduction from the idea of relationships