

IMPROVISATIONAL LUMIA: PAINTING ALONG WITH MUSICIANS

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Since the time of Newton and Louis-Bertrand Castel, who invented the first light organ in the seventeenth century, scientists and artists have been interested in the relationship of light and sound. And composers from Alexander Scriabin, who wrote a light score for his opera *Prometheus*, through rock artist David Bowie, who observed that "the eye is hungrier than the ear," have recognized the potential of the visual to enhance our enjoyment of music. Over the last century, painters and sculptors aspiring to the dynamism and immediacy of music have invented light organs, created kinetic sculptures and produced animated films. Artists such as Wassily Kandinsky, Paul Klee and Leopold Survage struggled to capture in images the rhythm, abstraction and movement of music.

Today, computers enable the development of instruments to realize the dreams of those modern artists. Painters can now affect emotional experience in a dynamic way previously available only to composers and musicians. By controlling forms and colors in continuous motion, they can create a visual art affording as much variety as music.

I have developed a computer-based instrument for "painting" in real time, called Imager. It is based on the constructivist tradition: moving colored forms are built up from simple geometric elements, such as points, lines, planes, polygons and cubes. The general purpose of the instrument is to provide its player with collections of presets that can be triggered using MIDI (musical instrument digital interface) controllers. The presets recall and display collections of these constructive elements, the parameters of which can also be manipulated using MIDI con-

trollers. For example, six red pentagons change to five blue hexagons when the user strikes a key or twists a knob.

One application of this kind of painting is to create animations that can be viewed while listening to music. Thomas Wilfred, who invented the Clavilux and in 1948 wrote one of the earliest articles on composing with light, suggested the term "lumia" for such moving colored artworks. Such lumia have since emerged in various forms. Indeed, early contributors to *Leonardo*, including its founder Frank Malina, pioneered much of the terrain that makes modern lumia possible. What is new is the ease with which lumia can be created and the role that improvisation now has in playing them.

Over the past several years I have used Imager to produce a series of pieces that I call *Unauthorized Duets*. Each is a "collaboration" with a popular musician, in which I interpret already recorded music visually. These interpretations, in the form of computer code along with a player for interpreting them, can be downloaded from the Internet. Viewers place a copy of the original artist's CD in their computer to experience the collaboration in its original form. Because the musical portion is not included, no permissions or releases were required. I have since produced on CD-ROM an "authorized edition" of unauthorized duets that I made with music by contemporary recording artists Brian Eno, David Bowie and Irish-American fiddler Eileen Ivers. An image from the David Bowie piece is shown in Color Plate A No. 1 [1].

Note

1. I have a web site from which the Imager software can be downloaded, the CD-ROM can be ordered, other images and short clips can be viewed and the history of this and related projects is more fully described. It is located at <<http://RhythmicLight.com>>.

A LIGHT-MUSICAL ALLILUIA

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The history of twentieth-century musical culture presents dozens of examples of the insertion of special parts for color or light into scores by composers (e.g. Scriabin's *Prometheus*, Schoenberg's *Die glückliche Hand*, etc.).

One such piece is *Alliluiia* by S. Gubaidullina, a Russian now living in Germany. The piece is a seven-part cycle for mixed chorus, symphonic orchestra, organ, discant and the color part "Farbe" for colored light. The first color-musical performance of *Alliluiia*, created in 1990, took place in New York in 1994. No other *Alliluiia* concert performances have included the color part, to my knowledge.

The concept of light-musical synthesis developed by Gubaidullina is based, strange as it may seem, on scientific data from light physics, albeit interpreted artistically. The composer's attention was attracted to the fact that a color is the result of the splitting of white light. When light comes into contact with a surface, some colors of the white-light spectrum are absorbed and others are reflected. Based on that fact, the composer considers the process of the formation of each color the "self-sacrifice" of white. Ascribing colors different levels of such "self-sacrifice," Gubaidullina allots to each color a special symbolic character. The emergence of colors and their sequence and interaction are controlled by this ideological and philosophic program. In this connection *Alliluiia* may be considered "color-musical drama," with the color part as one of its "plot directions" and the colors as its "characters."

The first Russian light-musical performance of *Alliluiia* with colors (using a phonogram) took place in Kazan, in the Prometei Institute studio, during the international conference "Electronics, Music, Light," which was devoted to the work of L. Theremin, on 11 December 1996. The electronic device Prometei-3 was used as a light instrument, displaying and controlling colors on a large (2.5×2.5-m) screen. I myself performed the light part. The composer's version of the final color part of