

Input/ Output

- Italian Futurism - Abstract Cinema, Chromatic Music (Bruno Corra, 1912)



"It could be said that the only display of the art of colors currently in use is the painting. A painting is a medley of colors placed in reciprocal relationships in order to represent an idea. (You will note that I have defined painting as the art of color. For brevity's sake, I will not concern myself with line, an element taken from another art.) A new and more rudimentary form of pictorial art can be created by placing masses of color harmoniously arranged in relationship to each other over a surface, so as to give pleasure to the eye without representing any image. This would correspond to what in music is known as harmony, and we can therefore call it chromatic harmony. These two forms of art, chromatic harmony and the painting, are spatial; music tells us of the existence of something essentially different, the mingling of chromatic tones presented to the eye successively, a motif of colors, a chromatic theme. I shall not, since it is not yet necessary, go on to speak of a fourth form of art, corresponding to musical drama, which would give rise to chromatic drama.



Consequently, two years ago, after the entire theory had been minutely established, we decided to make a serious attempt to create a music of colors. We immediately began to think of the instruments, which perhaps did not exist, and which we would have to have made to order, to enable us to realize these theories. We traveled untrodden roads, letting intuition guide us for the most part, but always proceeding concurrently, in order not to be led astray, with our study of the physics of light and sound, the works of Tyndall and of many others.

Naturally we applied and exploited the laws of parallelism between the arts which had already been determined. For two months each studied on his own without communicating his results—afterwards we presented, discussed and amalgamated our

observations. This confirmed our idea, which had anyway preceded our study of physics, of adhering to music and transferring the tempered scale of music into the field of color. We knew, however, that the chromatic scale consists of only one octave, and that, on the other hand, the eye, unlike the ear, does not possess the power of resolution (although, rethinking this point, I realize that one must have reservations). Yet we felt the obvious need of a subdivision of the solar spectrum, even an artificial and arbitrary one (since the effect stems principally from the relationships between the colors that impress the eye). Consequently we selected four equally distanced gradations in each color. We had four reds chosen at equal distances in the spectrum, four greens, four violets, etc. In this way we managed to extend the seven colors in four octaves. After the violet of the first octave came the red of the second, and so on. To translate all this into practice we naturally used a series of twenty-eight colored electric light bulbs, corresponding to twenty-eight keys. Each bulb was fitted with an oblong reflector: the first experiments were done with direct light, and in the subsequent ones a sheet of ground glass was placed in front of the light bulb. The keyboard was exactly like that of a piano (but was less extensive). When an octave was played, for example, the two colors were mingled, as are two sounds on the piano.

This chromatic piano, when it was tried out, gave quite good results, so much so that at first we were under the illusion that we had resolved the problem definitively. We amused ourselves by finding all sorts of chromatic mixtures, we composed a few color sonatinas—notturmi in violet and mattinate in green. We translated, with a few necessary modifications, a Venetian barcarolle by Mendelssohn, a rondo by Chopin, a Mozart sonata. But at last, after three months of experimentation, we had to confess that with these means no further progress could be made. We obtained the most graceful effects, it is true, but never to the extent that we felt fully gripped. We had at our disposition only twenty-eight tones, the fusions did not work well, the sources of light were not strong enough, if we used powerful bulbs the excessive heat made them discolor in a few days, and then we had to recolor them exactly, with considerable loss of time. We felt very clearly that, in order to obtain the large orchestral effects which alone can convince the masses, we needed to have a truly stupefying intensity of light at our disposition—only then could we emerge from the restricted field of scientific experiment to enter directly into its practice.

We turned our thoughts to cinematography, and it seemed to us that this medium, slightly modified, would give excellent results, since its light potency was the strongest one could desire. The other problem concerning the need to have hundreds of colors at our disposition was also resolved, since, by exploiting the phenomenon of the persistence of an image on the retina, we would indeed have been able to make many colors merge, in our eye, into a single hue. To achieve this it was sufficient to pass all the component colors in front of the lens in less than a tenth of a second. In this way with a simple cinematographic instrument, with a machine of small dimensions, we would have obtained the innumerable and extremely powerful effects of large musical orchestras, the true chromatic symphony. This was the theory. In

practice, the results, after we had acquired the camera, procured many hundreds of meters of film, removed the gelatin and applied the color were, as always, mixed. To achieve a harmonious, gradual and uniform sequence of chromatic themes we had removed the rotating switch and had managed to get rid of the shutter action, too; but this was exactly the reason for the failure of the experiment, and meant that in place of the expected marvelous harmony there exploded over the screen a cataclysm of incomprehensible colors. It was only subsequently that we understood the reason. We replaced all the parts we had removed, and decided to consider the film to be colored as divided into bars, each one as long as the space between four perforations, which corresponds at least in films of the Pathe gauge, to one complete rotation of the switch. We prepared another length of film and tried again. The fusion of the colors was perfect, and that was the important factor. As for the effect, it was not all that good, but we had already realized that where this was concerned we could not reasonably expect much, unless one had the ability, acquired only by long experience, to mentally project on to the screen the development of a motive as it is gradually applied with the brush on to the celluloid. This ability implies the mental fusion of many colors into one single color, and the dissection of a hue into all its components.

At this point, seeing that our experiences had got us positively on a solid road, we felt it necessary to pause to effect every possible improvement on the machine we were using. The projector remained unchanged. We merely replaced the arc lamp we had used until then with another arc lamp three times as strong. We made repeated experiments with the screen, using a simple white canvas, a white canvas soaked in glycerin a tinfoil surface, a canvas covered with an impasto that resulted, by reflection, in a sort of phosphorescence, an approximately cubical cage of very fine gauze penetrable by the light rays, which gave a fluctuating effect of clouds of white smoke. At last we returned to a white canvas stretched over a wall. All furniture was removed and the entire room, walls, ceiling and floor, painted white. During the rehearsals we wore white shrouding drapes (incidentally: once chromatic music is established, be it our works or those of others, a fashion will follow encouraging the well-dressed spectator to go to the theater of color dressed in white. Tailors can get to work on it now). To date we have not been able to achieve better results, and we have continued to work in our white room, which, in any case, serves us quite adequately.

Before describing, since I cannot do otherwise, the most recent successful color symphonies, I will attempt to give the reader some idea of this, though it will be far from the effect of the encounter of colors extended in time. I will place under the reader's eyes a few sketches (here to hand) for a film planned long since. This will precede public performances, accompanied by suitable explanations. (It will consist of fifteen or so extremely simple chromatic motives, each about a minute long and each divided from the next. These will serve to communicate to the public the legitimacy of chromatic music, to help it grasp its mechanisms and put it in the right

frame of mind to enjoy the color symphony which will follow, simple at first, then little by little more complex.) To hand I have three chromatic themes sketched in on strips of celluloid. The first is the simplest one could imagine. It has two colors only, complementaries, red and green. To begin with the whole screen is green, then in the center a small red six-pointed star appears. This rotates on itself, the points vibrating like tentacles and enlarges, enlarges until it fills the whole screen. The entire screen is red, and then unexpectedly a nervous rash of green spots breaks out all over it. These grow until they absorb all the red and the entire canvas is green. This lasts a minute. The second theme has three colors—pale blue, white and yellow. In a blue field two lines, one yellow, one white, move, bend together, detach themselves and curl up. Then they undulate towards each other and intertwine. This is an example of a linear, as well as chromatic, theme. The third is composed of seven colors, the seven colors of the solar spectrum in the form of small cubes arranged initially on a horizontal line at the bottom of the screen against a black background. These move in small jerks, grouping together, crashing against each other, shattering and reforming, diminishing and enlarging, forming columns and lines, interpenetrating, deforming, etc.

And now it only remains for me to inform the reader of our most recent experiments. These are two films, both of about two hundred meters. The first is entitled *The Rainbow*. The colors of the rainbow constitute the dominant theme, which appears occasionally in different forms and with ever-increasing intensity until it finally explodes with dazzling violence. The screen is initially grey, then in this grey background there gradually appears a very slight agitation of radiant tremors which seem to rise out of the grey depths, like bubbles in a spring, and when they reach the surface they explode and disappear. The entire symphony is based on this effect of contrast between the cloudy grey of the background and the rainbow, and the struggle between them. The struggle increases, the spectrum, suffocated beneath the ever blacker vortices which roll from background to foreground, manages to free itself, flashes, then disappears again to reappear more intensely close to the frame. Finally, in an unexpected dusty disintegration, the grey crumbles and the spectrum triumphs in a whirling of catherine-wheels which disappear in their turn, buried under an avalanche of colors. The second is called *The Dance*, the predominant colors being carmine, violet and yellow, which are continually united, separated and hurled upwards in an agile pirouetting of spinning tops.

I have done. There is no point in writing any more, since I could never succeed in giving more than the vaguest idea of color. One can only imagine it for oneself.

All one can do is open the way and I think I have done this, a little. I would like to add some comments about chromatic drama, with which we have made some interesting experiments, but this would be going too far. Perhaps I will deal with them in another article on the music of colors which I hope, together with this, will prepare the public to judge serenely the sonatas they will soon see in the theater.

Are there people in Italy who are seriously interested in these things? If so, let them write to me and I will have great pleasure in communicating to them all (and it is a great deal) that I have not been able to write and which will smooth the path."

Fig. Gino Severini: Dynamism of a Dancer 1912