



FIG. 1 Sanford Wurmfeld. E-Cyclorama, 2006-08, Acrylic on canvas, 8 ½ x 30 ½ x 26 ½ ft. (259.1 x 929.6 x 807.7 cm). Collection of the artist. Installation view at the Neuberger Museum of Art, Purchase College, SUNY, 2009.

INTRODUCTION

ROBERT L. HERBERT

It was Faber Birren [1900-1988] who brought Sandy Wurmfeld and me together in the early 1980s. Birren, whom we both knew in his old age, was one of America's leading industrial color consultants. Although not an original scholar, he wrote a number of books that made color theory available to a wide public, particularly about color systems and the psychology of color [Fig. 2]. He was also a dedicated collector of books on all aspects of color from the eighteenth to the mid-twentieth centuries, with special attention to color standards, that is, to treatises on color organized systematically to a common standard of measurement. Having begun adult life as a painter, Birren sought out artists' manuals, not just scientific treatises, on color and color-light [Fig. 3]. In histories of science, these manuals fall by the wayside because most of them are insufficiently informed by contemporaneous science, but they are valuable records of how artists conceived of color in each generation. In 1971, Birren gave his collection to Yale University, and I became its de facto curator because I had been teaching occasional courses on color theory. (I made preliminary annotated catalogues of the Birren Collection in Yale's Library Gazette in 1974 and 1978.) Not only did Birren give Yale his collection, he also gave several thousand dollars to expand it. Over the years I advised Yale's art librarians, Robert Kaufman and Nancy Lambert, to buy many dozens of books on color and color theory, most of them chosen by me when I was in Paris and London. The Faber Birren Collection of Books on Color, in Yale's Art and Architecture Library, has become one of the most extensive in the world.

Wurmfeld had been teaching color theory at Hunter College since the 1970s, and was familiar with the authors of many of Birren's books even before the donation to Yale. He was already himself collecting books on color. After a brief exchange about the Birren books, he and I met when he

came to Yale to see the collection. He was then preparing, for the spring of 1985, his exhibition on color treatises for the Hunter College Art Galleries. For this stimulating show he borrowed eighteen of Birren's books, several from the Cooper-Hewitt Museum and the Yale Medical School Library, a few from other libraries, and added a number of his own books. It's the only American exhibition of its kind that I'm aware of. (Others on color theory exhibit paintings, not printed documents.) The teaching exhibitions that I arranged from the Birren Collection were very limited by comparison and had no interpretive texts, whereas Wurmfeld's exhibition and accompanying catalogue is a contribution of permanent value to the history of color theory.

There's another major connection between Wurmfeld and me: a mutual love of Georges Seurat. We came to Seurat from different directions, he as practitioner, I as historian. The same difference characterizes our relation to the Birren Collection. Wurmfeld uses books on colors and teaches about them as an artist who thrives on the volumes' ideas and their illustrations. I've used them only as a teacher and historian, and my eye has never been guided by the practice of painting—inspired yes, but not guided. I'm jealous of Wurmfeld because he's both an artist who explores color and color theory in painting and a scholar of writings on these subjects. His essay "Color in Abstract Painting" is more than a historical overview—it shows a critical mind at work as he analyzes all aspects of color theory and practice, focusing on American painting of recent years¹.

Imagine my pleasure when I found in Wurmfeld an artist whom I could talk to about color theory! Any listener unfamiliar with color bibliography would have been puzzled at our conversations, peppered with names like Charles Lacouture [1832-1908] [Fig. 4], John Franklin Earhart [1853-1938], Charles Hayter [1728-1795], Alfred

Hickethier [1903-1967], M.E. (Michel-Eugène) Chevreul [1786-1889], and Ogden N. Rood [1831-1902]. Chevreul was far and away the most famous of these writers. His treatise of 1839, *De la loi du contraste simultané de couleurs et de ses applications*, treated color not as a physical substance but instead as a phenomenon of human perception, which he divided into simultaneous, successive, and mixed color contrasts.² Seurat copied out some extracts from Chevreul's treatise when he was a sixteen-year old student and then, five years later, he read and annotated the more up-to-date book on scientific color by Rood. Rood drew on Hermann von Helmholtz [1821-1894] and others to distinguish color-light from color-pigments, a vital distinction that Chevreul hadn't made.

When I projected pure color gels to art history students, they were at first astonished that rectangles of orange and blue, when overlapped, produced white instead of the green they anticipated from pigment mixtures. Rood's descriptions of optical mixture—by which pigments could approximate prismatic color-light—made his book the veritable bible for Seurat, Paul Signac, and the Neoimpressionists who formed their group in 1886. By using small touches of paint on white grounds—the famous pointillé—the artists encouraged the viewer's eye to form shimmering, evanescent mixes as it tried to resolve the contrasts. Eugène Delacroix had used color contrasts, but Seurat and the Neoimpressionists set aside his Romantic mixtures in favor of more overtly rational, if not actually scientific techniques. In Rood's nomenclature, theirs were "additive" hues that reinforced one another, whereas Delacroix's were "subtractive" because each constituent hue absorbed and diminished light. Wurmfeld could use his own artist's eye to understand how and why Seurat mixed colors, and because he was a careful reader of scientific texts, he understood what Rood had accomplished. He also appreciated the later work of the Neoimpressionists in which they used large touches of color that cannot mix in the eye but that create vibrant chromatic mosaics.

Although I was generally familiar with Wurmfeld's work and his publications, I only came to understand and love his painting in the spring of 2009 when he took me through his exhibition of *E-Cyclorama* and other work at the Neuberger Museum of Art [Fig. 1 & 5]. I knew he was conver-



FIG. 2 From Faber Birren, *Principles of Color: A Review of Past Traditions and Modern Theories of Color Harmony*, published by Van Nostrand Reinhold Company, New York, 1969, p. 94.

sant with Rood, Chevreul, and a host of other writers on color but until then I hadn't fully realized how much he offers a contemporary parallel to Seurat. Viewed closely, Seurat's surfaces, particularly in his seascapes, seem to consist of minute tessellated screens without reference to natural images. From a yard or so away, the mosaic resolves into recognizable objects but with a pronounced geometric order that works well with the arbitrariness of the technique, an effect that Wurmfeld cultivates.

For Wurmfeld, as for Seurat, craft mediates between the scientific and the aesthetic. Wurmfeld is not a savant manqué but a painter who has achieved enhanced luminosity by the implementation of procedures he has invented. His painterly skill is indissoluble from manual dexterity. From a distance of a foot or less, his watercolors, brushed with acrylic washes on creamy white paper, reveal the delicate movements of his hand. One sees the rhythmic penciled points and the hair-thin graphic lines connecting them to form nesting triangles. Although the linear edges are sharply determined, they have very slight irregularities that manifest Wurmfeld's hand as he lays delicate veils of color over a subtly textured Arches paper. In that way he recalls Seurat's use of Michallet paper whose



FIG. 3 From Moses Harris, *The Natural System of Colours*, 1776, facsimile edition, Whitney Library of Design, New York, 1963, p. 9.

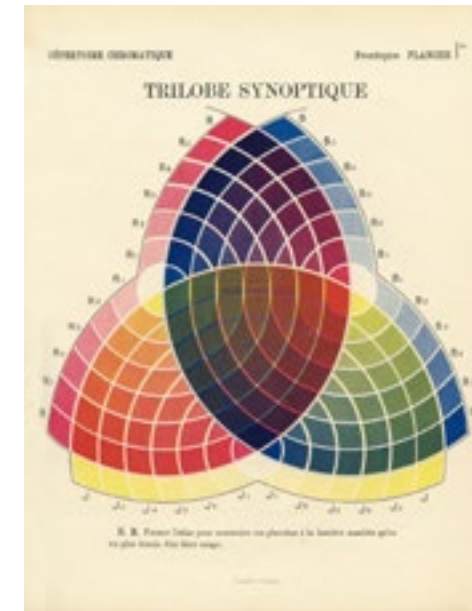


FIG. 4 From Charles Lacouture, *Répertoire Chromatique: Solution Raisonée et Pratique des Problèmes les Plus Usuels dans L'Etude et L'Emploi des Couleurs*, published by Gauthier-Villars et Fils, Imprimeurs-Libraires, Paris, 1890, plate 36.

similar texture patterned the smooth strokes of his black conté crayon.

In the mid-1980s, Wurmfeld made a felicitous discovery entirely by accident. He drew a grid on a large canvas, and then erased it because he wanted a grid with one more unit. When he applied the new grid, the erased lines were still visible. He then saw that the two grids formed an unexpected pattern as their lines grew further apart and then closer together again. Words alone make it hard to envision Wurmfeld's progressively phased grids. If one can't stand in front of one of his paintings, then a good color reproduction can give life to my inadequate description. The constant shifting of the grids in and out of phase creates rectangles whose sizes and shapes grow from thin to thick and back again, along both the horizontal and the vertical axes. By coloring each tiny rectangle differently according to a harmonic scheme, Wurmfeld created a progressive sequence of hues. Our eye grasps the large rhythms of color where we read it as ground, but the units flutter because we can't quite resolve the shifting grids into a single flat pattern. Paired gridlines that are close together appear as thin linear bands, and the adjacent broader bands appear as ground. As the lines separate, the figure-ground relationship first becomes ambiguous and then reverses, so that the former figure becomes the new ground.

Because Wurmfeld's pattern is a grid, not a grill limited to one direction, the striking effects take place on the vertical as well as the horizontal. Hues recede and advance left and right and up and down in a kind of three-dimensional moiré effect. At times one set of gridlines looms out in front of the other to form a three-dimensional scaffolding. This unresolved spatial flickering of linear edges and colored units is unique to Wurmfeld's art, a luminous shimmer in our perceiving eye that resists our brain's wish to collapse it into unity. Colors detach themselves from the surface and float, an effect of film color to use the terminology of David Katz.³ Intellectually we know that the color has a material basis on the surface, but Wurmfeld's integrated brushwork doesn't reveal separate strokes. His color has a rarified existence as perception purified of any tactile, material substance.

To these canvases of vibrating luminosity, Wurmfeld added a border inspired by his visit to

the Seurat retrospective in New York in 1991. In his later seascapes, Seurat painted around the edges of his canvas a narrow border whose colors contrasted with the changing hues of the adjacent canvas. He was perhaps inspired by Chevreul who suggested that interior wall panels be framed in borders of contrasting harmonies. Seurat also conceived his picture as a set of images existing in the real world. In this tricky conception—his otherwise friendly critic Félix Fénéon called this an “absurd reality”—his painted borders changed tints and tones according to whether the sun was in front of or behind the scene. Despite this supposedly naturalistic effect, Seurat was really placing colors next to other colors for their own chromatic effects. Wurmfeld likewise chooses colors for his borders that in some paintings contrast with neighboring hues; in others he exalts the saturation of internal hues or creates still other relationships, in all cases forming a kind of painted frame whose hues change as they circumnavigate the rectangle. In this fashion, his pictures don’t rely on the colors of the walls against which they hang because they carry their own colored environment.

In 2009, when I climbed up the stairs to the interior of Wurmfeld’s elliptical E-Cyclorama, I anticipated pleasure, but I had no idea of the exaltation that awaited me. The eighteenth- and nineteenth-century panorama paintings that were his inspiration required a fixed central viewpoint so that the perspective would work. Wurmfeld’s E-Cyclorama (like its predecessor, his Cyclorama 2000), permits the viewer to have different perceptions while walking about inside a vast painting, 30 ½ by 26 ½ feet. Because it’s 8 ½ feet high, the viewer has nothing in view but Wurmfeld’s colored surfaces. Looking at a right angle to any portion results in some of the effects generated by autonomous rectangular canvases: colored scaffoldings take on spatial dimensions of complexity with a sense of partial closure at the top and bottom because of the painted borders. Looking at an angle along a wall is something else entirely. The further distances have a luminous glow while the near portions flutter because we perceive the small patches of color as well as their blended hues. I was torn between constantly moving along the surfaces or stationing myself here and there. Of course I did both. When moving slowly along, undulating waves seem to emanate from the surface, a curi-

ous effect that is slightly disturbing. I found that positioning myself in separate stations, at different distances from the nearest surface, was even more exhilarating. Looking toward distant light tones gives the impression of a kind of real light because we interpret the progressive changes as the result of an altered illumination as though our eye were entering a differently lighted zone.

Never before or since that memorable day in 2009 have I been inside an environment of pure color. Although it is abstract and lacks images of nature, E-Cyclorama is not devoid of external references. Despite the powerful effects of Wurmfeld’s encompassing color, I frequently thought of scientific demonstrations of geometric order and calculated harmonies of color. For those familiar with the literature of color science, Wurmfeld’s colored environment recalls the illustrations in treatises of Chevreul, Lacouture, George Field [ca. 1777-1854], Robert Ridgeway [1858-1929] and others. However, familiarity with these authors’ work isn’t necessary. To look at Wurmfeld’s paintings and his Cycloramas is to think of the ways his craftsmanship celebrates rationality while also provoking curious sensations that can’t be readily defined. We enter a world of geometric order and prismatic harmony that involves feelings compatible with magic. I can’t think of a better definition of creativity.

1. Chapter 5 in *Color in Abstract Painting*, ed. by Kurt Nassau (Amsterdam: Elsevier, 1998).

2. Birren published an English translation of Chevreul in 1967: *The Principles of Harmony and Contrasts of Colors and their Applications to the Arts* (New York: Van Nostrand Reinhold Company, 1967), based on the first English translation of 1854 by Thomas Delf (Charles Martel, pseud.).

3. Katz was a pioneer in the psychology of color perception. See his *The World of Color* (London: K. Paul, Trench, Trubner & Co., Ltd., 1935).

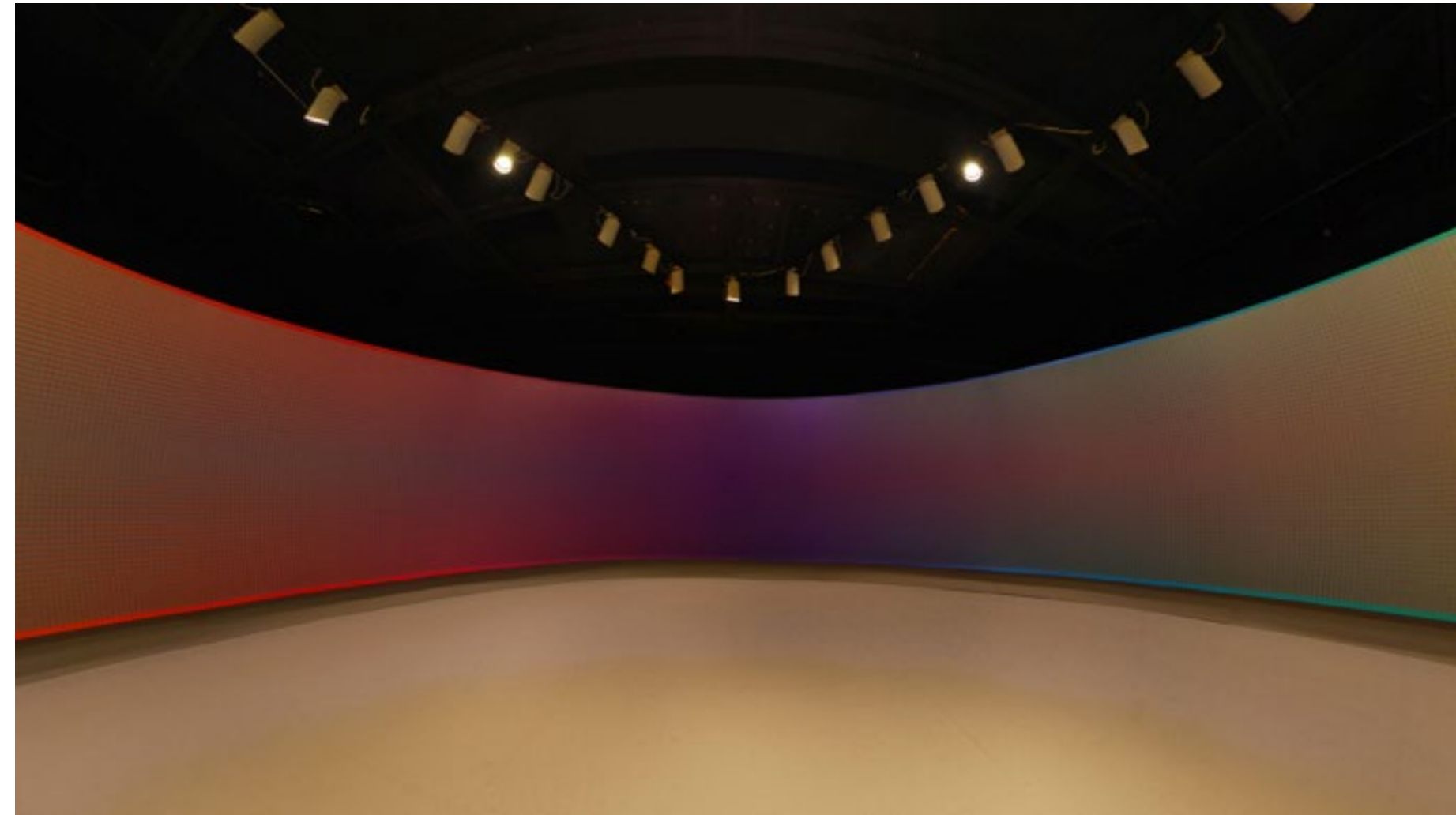


FIG. 5 Sanford Wurmfeld. E-Cyclorama, 2006-08, Acrylic on canvas, 8 ½ x 30 ½ x 26 ½ ft. (259.1 x 929.6 x 807.7 cm). Collection of the artist. Installation view at the Neuberger Museum of Art, Purchase College, SUNY, 2009.