

FOREWORD

For over forty years, *Interaction of Color* has been a best-selling book, demonstrably altering the lives of its readers all over the world. It brings infinite personal pleasure while perpetually expanding the way that colors are used and perceived in art, architecture, textiles, interior design, and graphic media at every level of technology. But when it was initially published, *Interaction* was, like everything Josef Albers did, a brave experiment, and like all forays into the unprecedented, it was the subject of controversy.

For the most part, *Interaction* was highly praised, but occasionally the response was far from laudatory. Writers vary in their responses to negative criticism—some saying it is fine, since all that counts is the amount of coverage, others feeling stung. Josef Albers, who saw himself as something of a martyr to modernism, both regretted the attacks and was intrigued by them. Part of the fascination of being blasted was that it confirmed that he had really startled people and taken them beyond their normal comfort zone. Ever since he had left a world where art was practiced in an acceptable, academic way—in the academies of Berlin and Munich, and in the public education system in which he taught in his native Westphalia—and gone to the Bauhaus, he had known what it was to inspire such controversial response.

Bauhaus modernism may now be in the pantheon of acceptability, but back then it startled and displeased the larger audience. The same was true of Black Mountain College, where Albers went after 1933, when the Bauhaus closed, and where he remained for sixteen years; today that pioneering institution is worshiped, but at the time a lot of what was created there was viewed as a form of heresy. Later, in 1950, when Albers began his *Homages to the Square*, he was mocked. Twenty years after that, when he was the first living artist given a solo retrospective at The Metropolitan Museum of Art, the work that people like Clement Greenberg had lambasted was finally recognized for its ingenuity, integrity, and subsuming beauty. Now that half a century has passed it has achieved the status, however dubious, of being a blue chip financial commodity, but at the start it was, like any statement by a messiah, criticized vociferously.

When Yale University Press courageously, and with all of the superb standards required by as exacting an artist as Albers, brought out *Interaction of Color* in 1963,

the publication generally had an easier time than most of the artist's ventures. This was equally true when the paperback version came out in 1971. But there was the occasional diatribe. And Albers, proud as he was of the sales and all the enthusiasm for the book, of the applause worldwide, was fascinated at being a lightning rod for dissent. The octogenarian clipped the few bad reviews that appeared along with dozens of favorable ones, and tried to find out more about their authors. The voices of "nay" appeared in obscure publications, but they still counted. One of the reasons the artist was so interested is that the things for which the critics attacked the books were exactly the elements that excited him the most, because they recommended such a radical departure from traditional, hidebound ways of seeing.

Arthur Carp was the author of an attack in the magazine *Leonardo*. To present the flaws, Carp wrote that Albers considered "good teaching . . . 'more a matter of right questions than . . . of right answers.' He deprecates 'self-expression,' as opposed to 'a basic step-by-step learning.' . . . Students are urged to use disliked colors in the hope they may overcome their prejudices." Carp used these points to demonstrate that "one doubts if Albers is really being helpful" and to justify the statement "Would that he were less of a dilettante (pejorative connotation)!"

Everything that Carp attacked, of course, was what Albers believed in and what others applauded. As Howard Sayre Weaver wrote in a review that appeared in 1963 following publication of the first edition, *Interaction of Color* was a "grand passport to perception." It assumed that glorious role because it was, "essentially, a process: a unique means of learning and teaching and experiencing."

Weaver referred to Albers's fondness for the words of John Ruskin: "Hundreds of people can talk, for one who can think. But thousands of people can think, for one who can see." Most people, sooner or later, have recognized the miraculous way in which *Interaction of Color* facilitates such seeing. In the 1963 *Architectural Forum*, a design teacher at Cooper Union was among those prescient enough to write, "*Interaction of Color* is the most comprehensive and intelligent, as well as the handsomest, book we yet have on this subject. It is an indispensable volume for the artist, architect, or teacher who finds a greater challenge in discovery than in a 'safe' color system." That same year, Dore Ashton, reviewing the book in *Studio*, was perceptive enough to recognize that Albers was the opposite of the pedagogue Carp accused him of being; rather, his achievement justified his comment that "teaching is not a matter of method but of heart." The year after the paperback came out, the poet Mark Strand, in *Saturday Review*, saw Josef Albers's work as demonstrating that "when color challenges the safe, enclosing geometrical properties of the pictorial surface, as it is meant to, it does so with a slowness and delicacy that are disarming and a beauty that is exhilarating."

What one person disdained, another saw as groundbreaking. Albers's approach was revolutionary, putting experimentation at the fore. It disputed traditional notions of taste. It sought to engage rather than merely inform.

As a keen observer of the human comedy, Albers was particularly aware that sometimes his detractors were well-known figures, and his champions obscure ones. Donald Judd, in *ARTS Magazine* in 1963, called *Interaction of Color* "primarily pedagogical." Judd went on with a mixture of moderate, pseudo-Hemingwayesque adulation—"The book makes, to put it simply, one unqualified point, that color is important in art. It does this very well."—and bizarre, incomprehensible disparagement: "The *Interaction of Color* is the best that can be done. It is just that it has all the Biblical possibilities, since it is clear and has limits, of anatomy or of the other subjects whose presence and perfection are supposed to define art. The book should be used but not that way." Albers would never know that Judd would, two decades later, following the older artist's death, rescind these words and make pilgrimages to Albers's studio, feeling that he had not done justice to what *Interaction* was all about and regretting his youthful arrogance. In any event, taking it all in stride, Albers was certainly pleased that an unknown academic at the University of Nevada in Las Vegas had been among those to get the main point, in spades, of *Interaction*: "In an age in which increased human sensibility has become such an obvious need in all areas of human involvement, color sensitivity and awareness can constitute a major weapon against forces of insensitivity and brutalization."

This was the point. The quality of heart, the impact on all of human life, was what Josef Albers sought in his approach. This above all is the reason that we are so pleased that Yale University Press, Josef Albers's partner through thick and thin for four decades, has remained in that role as splendidly as ever. Supportive of the artist's legacy as it was of him during his lifetime when he was in the act of creating, Yale has shown a wonderful and consistent understanding of the brazen, self-generating newness of the artist's approach. Thanks to that fine relationship, Albers's marvelous, unsettling revelations—unsettling to some, exhilarating to others—are again flourishing in this current incarnation of *Interaction of Color*. With its additional plates and refinement of other details, this new volume, which effectively updates what is now a "classic," allows Albers's courageous invitation to experimentation, openness, and intellectual and personal expansion to thrive. It invites readers to thrive as well—exactly as Josef Albers would have liked.

Nicholas Fox Weber

Introduction

The book "Interaction of Color" is a record of an experimental way of studying color and of teaching color.

In visual perception a color is almost never seen as it really is—as it physically is.

This fact makes color the most relative medium in art.

In order to use color effectively it is necessary to recognize that color deceives continually.

To this end, the beginning is not a study of color systems.

First, it should be learned that one and the same color evokes innumerable readings.

Instead of mechanically applying or merely implying laws and rules of color harmony, distinct color effects are produced—through recognition of the interaction of color—by making, for instance, 2 very different colors look alike, or nearly alike.

The aim of such study is to develop—through experience—by trial and error—an eye for color.

This means, specifically, seeing color action as well as feeling color relatedness.

As a general training it means development of observation and articulation.

This book, therefore, does not follow an academic conception of "theory and practice."

It reverses this order and places practice before theory, which, after all, is the conclusion of practice.

Also, the book does not begin with optics and physiology of visual perception, nor with any presentation of the physics of light and wave length.

Just as the knowledge of acoustics does not make one musical—neither on the productive nor on the appreciative side—so no color system by itself can develop one's sensitivity for color. This is parallel to the recognition that no theory of composition by itself leads to the production of music, or of art.

Practical exercises demonstrate through color deception (illusion) the relativity and instability of color. And experience teaches that in visual perception there is a discrepancy between physical fact and psychic effect.

What counts here—first and last—is not so-called knowledge of so-called facts, but vision—seeing. Seeing here implies Schauen (as in Weltanschauung) and is coupled with fantasy, with imagination.

This way of searching will lead from a visual realization of the interaction between color and color to an awareness of the interdependence of color with form and placement; with quantity (which measures amount, respectively extension and/or number, including recurrence); with quality (intensity of light and/or hue); and with pronouncement (by separating or connecting boundaries).

The table of contents shows the order in which exercises usually lead our investigation.

Each exercise is explained and illustrated—
not to give a specific answer,
but to suggest a way of study.

I Color recollection—visual memory

If one says “Red” (the name of a color) and there are 50 people listening, it can be expected that there will be 50 reds in their minds. And one can be sure that all these reds will be very different.

Even when a certain color is specified which all listeners have seen innumerable times—such as the red of the Coca-Cola signs which is the same red all over the country—they will still think of many different reds.

Even if all the listeners have hundreds of reds in front of them from which to choose the Coca-Cola red, they will again select quite different colors. And no one can be sure that he has found the precise red shade.

And even if that round red Coca-Cola sign with the white name in the middle is actually shown so that everyone focuses on the same red, each will receive the same projection on his retina, but no one can be sure whether each has the same perception.

When we consider further the associations and reactions which are experienced in connection with the color and the name, probably everyone will diverge again in many different directions.

What does this show?

First, it is hard, if not impossible, to remember distinct colors. This underscores the important fact that the visual memory is very poor in comparison with our auditory memory. Often the latter is able to repeat a melody heard only once or twice.

Second, the nomenclature of color is most inadequate. Though there are innumerable colors—shades and tones—in daily vocabulary, there are only about 30 color names.

II Color reading and contexture

The concept that “the simpler the form of a letter the simpler its reading” was an obsession of beginning constructivism. It became something like a dogma, and is still followed by “modernistic” typographers.

This notion has proved to be wrong, because in reading we do not read letters but words, words as a whole, as a “word picture.”

This was discovered in psychology, particularly in Gestalt psychology. Ophthalmology has disclosed that the more the letters are differentiated from each other, the easier is the reading.

Without going into comparisons and details, it should be realized that words consisting of only capital letters present the most difficult reading—because of their equal height, equal volume, and, with most, their equal width. When comparing serif letters with sans-serif, the latter provide an uneasy reading. The fashionable preference for sans-serif in text shows neither historical nor practical competence.

First, sans-serifs were designed as letters not for texts but for captions, when pictorial reproductions were introduced with stone lithography. Second, they produce poor “word pictures.”

INTERACTION OF COLOR

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This illustrates that clear reading depends upon the recognition of context.

In musical compositions,
so long as we hear merely single tones, we do not hear music.
Hearing music depends on the recognition of the in-between of the tones,
of their placing and of their spacing.

In writing, a knowledge of spelling has nothing to do with an understanding
of poetry.

Equally, a factual identification of colors within a given painting
has nothing to do with a sensitive seeing
nor with an understanding of the color action within the painting.

Our study of color differs fundamentally from a study which anatomically
dissects colorants (pigments) and physical qualities (wave length).

Our concern is the interaction of color; that is, seeing
what happens between colors.

We are able to hear a single tone.
But we almost never (that is, without special devices) see a single color
unconnected and unrelated to other colors.
Colors present themselves in continuous flux, constantly related to
changing neighbors and changing conditions.

As a consequence, this proves for the reading of color
what Kandinsky often demanded for the reading of art:
what counts is not the what but the how.

III Why color paper— instead of pigment and paint

When, more than 20 years ago, this systematic study of color was begun, it occurred almost as a matter of course that the studies would be done in color papers. At that same time there was some concern among teachers that students might be reluctant to substitute paper for paint. Since then, obviously, the attitude of students—and of teachers—has changed.

In our studies, color paper is preferred to paint for several practical reasons. Paper provides innumerable colors in a large range of shades and tints ready for immediate use. Though a large collection is needed, it is not expensive to assemble when one does not rely on large prepared paper sets representing specific color systems, such as the Munsell or Ostwald Systems (the least desirable are “tuned” sets, claiming to be failure-proof).

Sources easily accessible for many kinds of color paper are waste strips found at printers and bookbinders; collections of samples of packing papers, of wrapping and bag papers, of cover and decoration papers. Also, instead of full sheets of paper, just cutouts from magazines, from advertisements and illustrations, from posters, wallpapers, paint samples, and from catalogues with color reproductions of various materials will do. Often a collective search for papers and a subsequent exchange of them among class members will provide a rich but inexpensive color paper “palette.”

What are the advantages of working with color paper?

First, color paper avoids unnecessary mixing of paints, which is often difficult, time-consuming, and tiring. This is true not merely for beginners alone.

Second, by not exposing the student to discouraging failures of mixing and imperfect matching of spoiled paints and papers, we not only save time and material, but, more important, gain a continued active interest.

Third, color paper permits a repeated use of precisely the same color without the slightest change in tone, light, or surface quality. It permits repetition without disturbing changes caused by varying application of paint (thinner or thicker—even or uneven); without traces of hand or tool resulting in varying density and intensity.

Fourth, working with color paper rarely demands more equipment than paste (heavy rubber cement is best), and a single-edged razor blade instead of scissors. This eliminates tools and equipment for handling paints, and therefore is easier, cheaper, and more orderly.

Fifth, color paper also protects us from undesired and unnecessary addition of so-called texture (such as brush marks and strokes, incalculable changes from wet to dry, or heavy and loose covering, hard and soft boundaries, etc.) which too often only hides poor color conception or application, or, worse, an insensitive color handling.

There is another valuable advantage in working with color papers instead of with paints: in solving our problems again and again we must find just the right color which demonstrates a desired effect. We can choose from a large collection of tones, displayed in front of us, and can thus constantly compare neighboring and contrasting colors. This offers a training which no palette can provide.