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The Ethics of Perception: Josef Albers in the United States

Eva Díaz

Experimentation means learning by experience. . . .
—Josef Albers, September 1941¹

A most poignant document of Black Mountain College's early years is the snapshot of Josef and Anni Albers's arrival, published in North Carolina's *Asheville Citizen* on December 5, 1933 (Fig. 1). "Germans to Teach Art near Here" the caption reads, though "Fresh Off the Boat" would do just as well; the grainy newsprint depicts the couple posed tensely in formal attire—he in tie and jacket, she in fur, cloche, and veil. Tightly angled in a corner, they look very much the anxious, recent immigrants. While Anni's mild gaze seeks out the viewer, Josef averts his eyes, his stiff bearing and tightly clasped hands registering trepidation, even strain. Fleeing the Nazi regime, the couple left Berlin for the site of a newly founded experimental school in rural Appalachia, a quite improbable relocation under other circumstances. Though they came from the Bauhaus, one of most radical art institutions of the era, to what was vociferously announced as the successor to it in the United States, this evidence of a nervous arrival is testimony to their unexpectedly providential exile from Europe.

Josef knew but a few words in English, though Anni knew more. In their first years, she would serve double duty as both faculty member at the recently founded college and as his patient translator. The newspaper article does not mention this, nor does it quote his famous response to their welcome ceremony. Rallying his scant English when asked what he hoped to accomplish in the United States, Josef declared simply, "I want to open eyes."² Typical of his plain and frank manner, Albers's pronouncement nonetheless encapsulates two concerns that characterize his years in the United States. Most obviously, it indicates the centrality of his pedagogical commitment (the same newspaper article proclaimed Albers "internationally known . . . for his unusual method of art instruction"). His statement also foregrounds the preeminence of a study of *vision* in his pedagogy and in Bauhaus teaching more generally—it is eyes he wants to open, after all.³ Pedagogy and vision; together, his words represent a desire to craft an audience for abstraction and, more particularly, for his art, an audience that would be tutored in the perceptual strategies he was developing in his teaching.

The key elements of his perceptual strategies were set out in his three-prong Preliminary Course, or *Vorkurs*, brought from the Bauhaus to Black Mountain and later to Yale University. In these drawing, color, and design classes, Albers proposed an ordered and disciplined testing of the various qualities and appearances of readily available materials such as construction paper and household paint samples. His approach brought out the correlation between formal arrangement and underlying structure and placed a high value on economy of labor and resources (Fig. 2). He stressed the

experience, rather than any definite outcomes, of a laboratory educational environment and promoted forms of experimentation and learning in action that could dynamically change routine habits of seeing.⁴ He began his drawing and design courses with mirror writing, a simple exercise in defamiliarization. He invited students to draw their names, for example, backward and in cursive, as if reflected in a mirror, and then asked them to render this script in their nondominant hand. Drawing by automatic motor sense invariably becomes a crutch, overwriting any direct consciousness of how the actual forms of a signature are produced. Mirror writing provided students a sure way to begin challenging sterile habits of observation, "to develop awareness of what we do out of habit as opposed to choice."⁵

In order to grasp Albers's proposal of what he came to term a "new visual expression" through acts of experimentation, it is crucial to understand the discursive field he produced around Geometric Abstraction, that is, how he explained the importance of a continuous study of the constitutive elements of form.⁶ A close reading and analysis of Albers's large body of unpublished texts written in his budding English can shed light on the process of testing variations in form that his pedagogical strategies elaborated. (One could, in fact, argue that given its minimal denotation of form, Geometric Abstraction always relied heavily on discursive interpretations, offered both in the artists' own writings and by critics.) He redesigned the experience of looking at art as one of "direct seeing," whereby attention to perceptual habits marks routine cognitive associations as social constructions and allows these associations to be influenced and possibly transformed.⁷ A careful study of his sketches, studies, and paintings undertaken at Black Mountain (and a few from his subsequent decades in the United States) will make it possible to address how Albers developed methods of articulating form that highlighted its contingency and endless variation.

Albers went further to find in form an ethics of perception, which he developed in theories of progressive pedagogy concerning experimentation and social change. Drawing on the work of John Dewey, Albers presented the methodology of the experimental test as a forceful corrective against stagnant perceptual habits in the culture at large, centering attention on the tremendous stake of progressive education in combating forces of social reproduction, that is, the tendency of dominant cultural values to be reproduced as the privileged traditions of society. He maintained that learning to observe and design form made an essential contribution toward cultural transformation and growth. In brief, in Albers's ethics of perception, careless habits—habits that inhibit self-actualization and social progress—can be overcome with the disciplined study of the constitution of form, forms that them-



1 Josef and Anni Albers, from "Germans on Faculty at Black Mountain School," *Asheville Citizen*, December 5, 1933 (clipping photograph by Tim Nighswander, provided by The Josef and Anni Albers Foundation)

selves compose the ubiquitous, though often overlooked, material and appearance of our surroundings.

Elements of Josef Albers's teachings have become so familiar and ingrained in current art curricula through his influence that it is difficult to recall how radically art education was altered by the widespread adoption of his methods. Developed at the Bauhaus in the early 1920s through 1933 and continued at Black Mountain College from 1933 to 1949 and at Yale from 1950 to 1958, Albers's Preliminary Course consistently challenged conventional art teaching. Indeed, it is important to remember the great influence of Black Mountain's teaching methods generally—especially Albers's nearly two decades at the college—in positioning invention and experiment as central elements of educational practice in the United States and to bear in mind that in the years preceding its implementation elsewhere "it was heresy," according to Albers, "to consider art a central part of a college curriculum or a means of general education."⁸

Visual arts training in the early twentieth century, in Europe as in the United States, took place in specialized art academies modeled on classical beaux arts instructional mod-

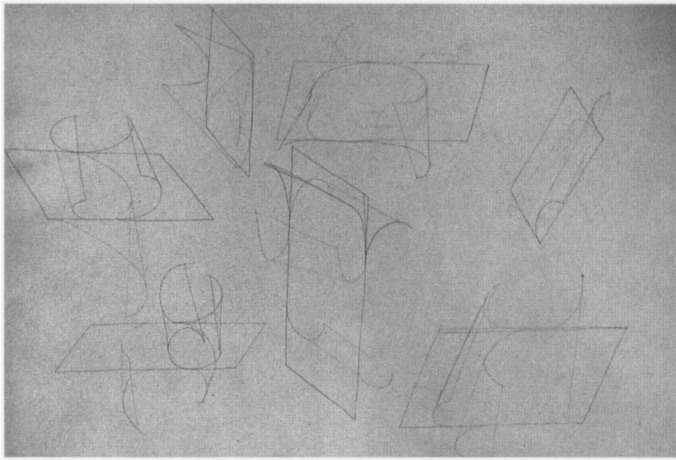


2 Josef Breitenbach, *Josef Albers' Color Class, Summer 1944*, silver gelatin photograph. Center for Creative Photography, University of Arizona, Tucson (photograph © The Josef Breitenbach Trust, New York)

els or in technical institutes featuring drawing for industrial design, rather than in liberal arts colleges such as Black Mountain. In academies, distinctions between various media were reinforced, and the rendering from life, above all, the study of the nude, was central. The emphasis was on repetition (in life studies) and duplication (in copying past works). Advancement was secured by a review process that paradoxically assessed a pupil's fidelity to precursors and his (rarely *her*) departure from precedent in an "original" work—the academy study of the male nude. In its technical application, drawing accentuated the repeatability of objective nature by creating a strict geometry of form (and in this sense, to use M. Norbert Wise's phrase, "drawing is the language of engineering").⁹ This language of reproduced form, as Molly Nesbit has contended, was routinized by drills in elementary and higher education toward "blueprints of production" in industrial product design.¹⁰ Even attempts to devise hybrid guild-workshop models of art education spawned by the Arts and Crafts movement, as Howard Singerman has noted, tended to attach more importance to craft traditions than to creative work in art and design.¹¹ Whatever the model—academy, technical college, or workshop—visual art training beyond high school was not closely integrated with liberal arts concerns nor often with experimental or progressive approaches.

Albers bemoaned the persistence of such models in the United States:

I believe dominating education methods in this country are not at all typically American with their stereotyped requirements, standardized curricula and mechanized evaluation of achievements. Why do we still have the belief in academic standards while our living reveals variety,



3 *Drawing Study*, n.d., reproduced in Albers, *Search versus Re-Search*, 51 (image © the Trinity College Trustees and Josef Albers)

youth and freshness . . . ? Why must exploration and inventiveness, two American virtues, too, play such a minor part in our schools?¹²

He found particularly grating the assumption in standardized art education that talent and an aptitude for art were inherent gifts and prerequisites. Instead, he fostered a general training in the fundamentals of art as “more democratic because of giving a chance to many more people,” not just to the exceptional or advanced student.¹³ Albers was a good fit for Black Mountain; the centrality of art education was emphasized in the college’s 1933 inaugural publication shortly before his arrival: “Fine Arts, which often exist precariously on the fringes of the curriculum, are regarded as an integral part of the life of the College and of importance equal to that of the subjects that usually occupy the center of the curriculum.”¹⁴ The goal was not to produce professional artists but to consider all individuals as possible creators and to offer training for what Albers termed a “flexible and productive mind that wants to do something with the world. . . . we are on the way to the researcher, discoverer, to the inventor, in short to the worker who produces or understands revelations.”¹⁵

Art practice presented the ideal site in culture from which to encourage broad-minded thinking, as training in experimentation steered a course toward “coordination, interpenetration . . . conclusions, new viewpoints . . . for developing a feeling or understanding for atmosphere and culture.”¹⁶ The as yet unrealized prospect of education thus could consist of a richer understanding of “action or life,” not a stockpiling of mere information or knowledge.¹⁷ Developing an attuned visual sensibility involved testing, dynamism, and action, not the passivity and stasis of education based on study of precedent alone.¹⁸ Albers’s series of foundational courses promoted independent thinking and a close study of the mutable nature of form. On a visit to Black Mountain in 1944, Walter Gropius praised Albers’s innovation: “He has discarded the old procedure to hand over to the student a ready-made formulated system. He gives them instead objective tools that enable them to dig into the very stuff of life. . . .



4 *Typography Study*, n.d., reproduced in Albers, *Search versus Re-Search*, 54 (image © the Trinity College Trustees and Josef Albers)

This ever-changing approach seems to me pregnant of life, present and future.”¹⁹

Albers’s battery of courses constituted a broad foundation: a general education in the fundamental elements of visual perception, broken down into a sequence of three classes covering the “main provinces of form”—drawing, color, and design.²⁰ Yet “fundamental” and “foundational” should not be understood as merely elementary or introductory. Rather, through the observation of form’s shape, material (in its structure, surface, and appearance), and coloristic qualities, Albers provided a basic training in articulating form, and possibly in rearticulating it creatively. As Peter Galison has observed, this program of “building up from simple elements to all higher forms” was perhaps the central feature of Bauhaus pedagogy.²¹

Albers’s first course—Basic Drawing—concentrated on shape through the exact observation and transcription of form in space. Drawing was conceived as a “test of seeing” that graphically reported visual data honed by exercises in foreshortening, overlapping, distance, and nearness.²² He encouraged students to observe the disposition of line in various contexts; in one student study (Fig. 3), the depiction of repeated torqued and scrolled planes tested the precise spatial translation of two dimensions into three. Such trained observation excluded what Albers termed “expressive drawing” as a beginning, that is, the depiction of conditions that could not be assessed with some objectivity; the length of



5 *Matière Study*, n.d., reproduced in Albers, *Search versus Re-Search*, 77 (image © the Trinity College Trustees and Josef Albers)

each mark in the study maps the real behavior of a line in space with respect to qualities of depth and movement.²³ His teaching exercises employed uncomplicated geometric forms such as squares, triangles, and ellipses, as well as simple figures such as letters and numbers, to perform changes in perspective and to create anamorphic effects that demonstrated mastery of spatial representation (Fig. 4). He avoided studies of the nude or the classical model “because that’s the hardest thing to do and you come maybe only for the nudes and not for the drawing.”²⁴

Basic Design (the key *Werklehre*—handicraft, or literally, the study of how to work—portion of the Preliminary Course) investigated the material constitution of form. Albers divided the subject into two components, which he termed *matière* and *material*, and focused on exploration using commonly found materials and the fewest possible tools. *Matière* studies concerned the *appearances* of materials, distinguishing among structure, facture, and texture, and sought to characterize materials by their tactile or optical perception.²⁵ For example, a trompe l’oeil representation of wood grain on paper gave the optical appearance of wood but the tactile experience of paper (Fig. 5). Essentially, the practice of combining and confusing the superficial qualities of materials tested (mis)perceptions of the appearances of surfaces.²⁶

Material studies concerned the immanent *capacities* of materials, evaluated structurally and analyzed according to features such as compression, elasticity, and firmness, tested through folding and bending. Here Albers concentrated on the internal organization of forms and their relation to one another, encouraging dynamic relations rather than strictly symmetrical or mathematically predictable ones (Fig. 6). An understanding of the dimensional, spatial, and volumetric qualities of form was accomplished through construction exercises, whose parameters were defined through formal economy, that is, the “ratio of effort to effect.”²⁷

Albers believed the disciplined study of the material organization of form to be a necessary condition of art production. As he reasoned, “Every art work is based on a thinking out of the material.” Albers found the signal example of a sophisticated understanding of the technical potentials and

limitations of medium in pre-Columbian art. Once he relocated to the United States, Albers amassed an extensive collection of Mexican pre-Columbian pottery and figurines. He felt that such work amplified the characteristic tendencies of its material, establishing a reflexive relation between an object’s structure and appearance. In contrast to many uses of clay in Western art, in which it is applied over a hidden armature, pre-Columbian art keeps “clay clay-like,” building “cake-like flat elements or little globular or sausage-like forms” (Fig. 7). Stonework commonly uses compact forms lacking delicate protrusions that can break off. This construction is “proof that the artist has not overaimed and that the material has not been over-charged.”²⁸ Rather than simulating something else, the materiality of pre-Columbian art evokes the Constructivist credo: it “teaches us [to] be truthful with materials.”²⁹ Though the appearance of any material could mimic another, its underlying structure and technical capacity can never be successfully imitated. The trompe l’oeil wood-grain drawing on paper, however naturalistic, cannot be mistaken for actual wood in its strength or durability (Fig. 5).

Color study was conceived of as the foundational technique of painting, each brushstroke or application of the palette knife bearing a dab of colored paint. Albers’s color course encouraged students to tackle the process with clear intentions and proper execution—“to prepare for a disciplined use of color and to prevent accident, brush, or paint-box from taking authorship.”³⁰ Again, as in his other courses, Albers emphasized active “laboratory study” over the theoretical investigation of color systems, since “the ability to see color and color relationship is more important than ‘to know about’ color.”³¹

Despite the renown Albers later won through his influential 1963 manual *Interaction of Color*, the study of color was relatively undeveloped in his repertoire on his arrival in the United States. At the Bauhaus Albers had radically shifted the Preliminary Course away from explorations of expression and gestural improvisation to rigorous material studies. The increasingly unpopular fixation with the subjective and emotional potential of color of Johannes Itten, his predecessor,



6 Genevieve Naylor, *Material Study—Paper*, n.d., silver gelatin photograph, reproduced in Albers, *Search versus Re-Search*, 83 (image © the Trinity College Trustees and Josef Albers; provided by Staley-Wise Gallery, New York)

hastened his departure (triggering perhaps the most productive schism in Bauhaus ideology, one concerning the role of expression as opposed to design in art).³² Though diverging from Itten's efforts, Albers well understood the subjective dimension of color perception. When presented with irrefutable physical evidence—for example, the demonstration of a particular shade of red—"All group members will have the same visual perception. But still the individual associations and emotional reactions will differ vastly." Color is always relational; its perception is influenced not only by neighboring colors but also by the surrounding light and atmospheric conditions. In addition, "visual memory is amazingly poor" as compared to, say, auditory memory and suggests that "color is deceiving us all the time." These influences on vision have the effect of converting "the optical (physio-physiological) susception [stimuli] into a psychological effect (perception)." Because optical impressions and reactions are highly susceptible to manipulation or error, our understanding of and reflection on visual data—that is, the way we "image" or represent the world in the process of perception—must be carefully trained. This education in vision works to prevent the ease and apparent lack of mediation of optical vision to stand in for a more robust process of challenging meanings commonly assigned to forms. The fallibility of perception, its reliance on deceptive optical registrations, indicates the mutability of cognitive (that is, abstract/conceptual) comprehension, built as it is on those self-same illusions. "Color is the most relative medium in art," Albers asserted, and this relativity puts into question how cognitive understandings of the world are founded, maintained, and possibly altered.³³

Deliberate evaluation of the data of perception marks habits of cognition as such, denaturalizing them and making them receptive to change. In the long history of aesthetic



7 Henri Cartier-Bresson, *Josef Albers with Pre-Columbian Figurines*, 1968, silver gelatin photograph. Archives of American Art, Smithsonian Institution, Washington, D.C. (photograph © Magnum Photos, provided by the Josef and Anni Albers Foundation)

discourse, theorizing perception as indebted to habit was early proposed by British empiricists. John Locke was forcefully skeptical about the "naturalness" of perception; he contended that reactions to the testimony of the senses organize knowledge and experience in ways that become ingrained. Casual relations to such sensory stimuli generate "habitual customs" that reformulate new visual appearances into familiar cognitive patterns: "We are further to consider concerning perception, that the ideas we receive by sensation are often, in grown people, altered by the judgment, without our taking notice of it." Previous experiences of events—traditions and precedents—model subsequent experiences in their image; therefore, it is important "to consider how much [one] may be beholden to experience, improvement, and acquired notions."³⁴

Locke's recognition that perception is "beholden to experience" and therefore susceptible to routinization became a touchstone of late-nineteenth-century philosophical debates about the nature of attention under conditions of growing industrialization and mechanization. Positivists such as Hermann von Helmholtz problematized the "apparentness" and

immediacy of visual comprehension with tests of the enervation of visual attention in situations of optical fatigue, citing Johann Wolfgang von Goethe's experiments with the vulnerability of visual evidence in the phenomenon of afterimages. Nonetheless, Helmholtz fell prey to the functionalist conceit, according to Jonathan Crary, that "habitual repetition was part of what maintained an orderly social world and affirmed the validity and durability of existing relations." For Crary, Henri Bergson's arguments about the close connection between habit, repetition, and automation in modernity (as against forms of personal memory) best parried Helmholtz's ilk. Crary detected in Bergson's work that "the more 'determined,' that is, the more habitual and repetitive one's perceptual response to one's environment is, the less autonomy and freedom characterize that individual existence."³⁵

Citing Bergson's work, Russian formalists developed theories of vision that focused on the remaking of perceptual experience.³⁶ Significantly, Victor Shklovsky's exploration of "habituation" as a process of rendering perception automatic and unconscious brought to the fore the key role of art in catalyzing new forms of awareness:

The purpose of art is to impart the sensation of things as they are perceived and not as they are known. The technique of art is to make objects "unfamiliar," to make forms difficult, to increase the difficulty and length of perception because the process of perception is an aesthetic end in itself and must be prolonged.³⁷

To Shklovsky the "purpose [of an image] is not to make us perceive meaning, but to create a special perception of the object—it creates a 'vision' of the object instead of serving as a means of knowing it."³⁸

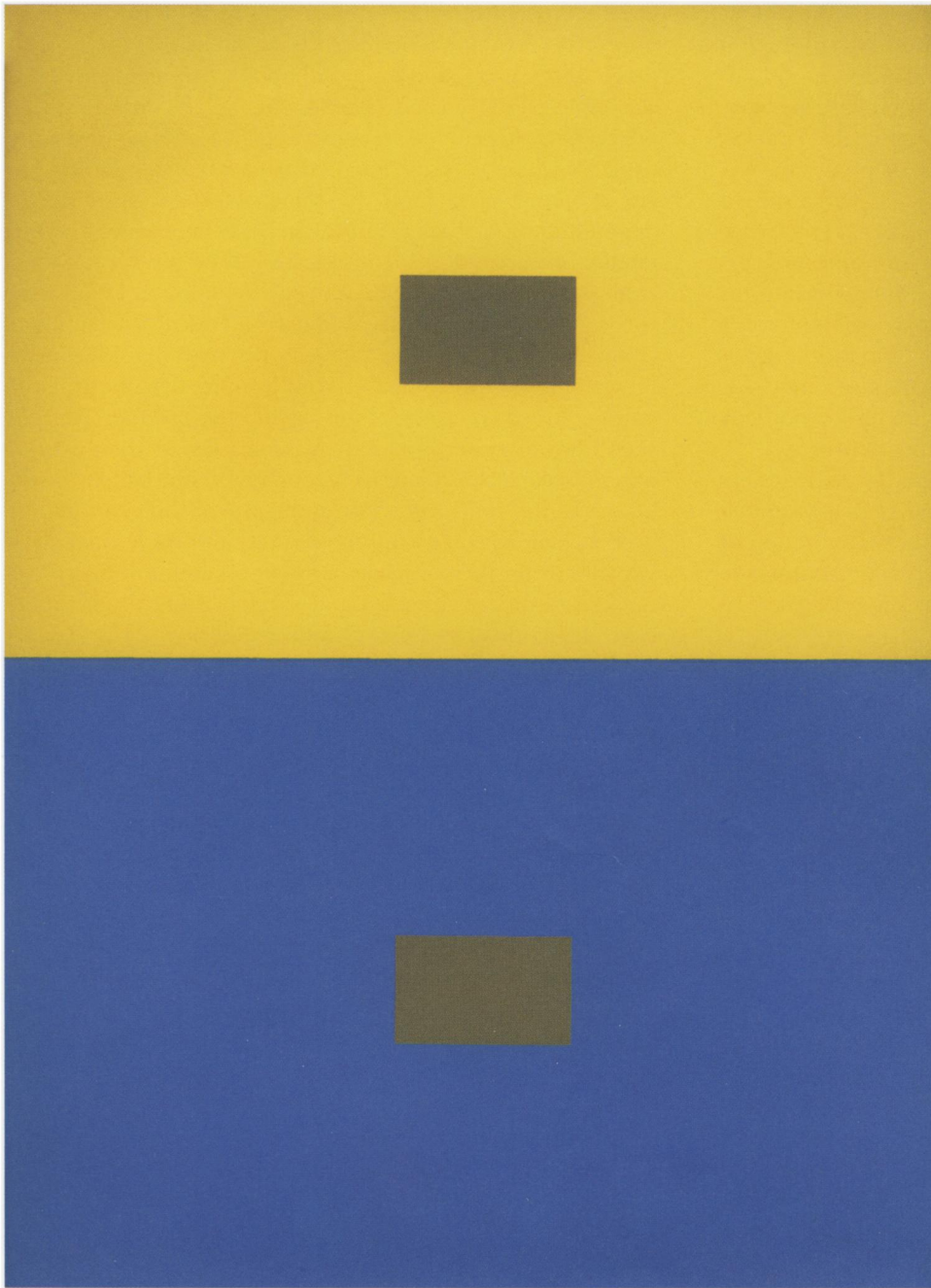
It can be argued that Shklovsky's breed of formalism, by privileging the "special perception" of art over knowledge, elevated art to a category of direct experience surpassing epistemology and even the production of meaning. In contrast, Albers's troubling of habituation was not merely "an aesthetic end." Rather, he contended that the entire structure of perception was related to the growth and transformation of cognitively assigned meanings in art and in the world at large. Albers saw art as an epistemological project, as a *form* of knowledge; to him the better "vision" that attentive perception provokes can in fact increase awareness concerning routinely assigned meanings and thus encourages people to transform their customary patterns of comprehension. To Albers, "every perceivable thing has form . . . and every form has meaning."³⁹ But through routine the richness of the visual and material world was frequently overlooked. The diverse forms of modernity are themselves always changing, yet habit-driven behaviors reinforce accustomed understandings of forms and their existing relations to one another.⁴⁰ Maintaining an alert attention to the appearance and constitution of form short-circuits habits that corroborate preexisting categories. If one can recognize how a work of art maintains a dynamic construction through careful imbalances of color and form, the associations of a color can be made similarly unstable. For example, if a particular color to which one would automatically assign the name "black" is brought out of its unconscious familiarity and shown to be perhaps a

little purple in one light and a little gray in another, this upsets the routine cognitive associations of "blackness": death, dirt, gloom, and so on. The potential of color study to uncouple sterile associations he dubbed its "psychological effect."⁴¹ In his color exercises (note the comparative study from *Interaction of Color*, adapted from his Black Mountain-era exercises of making the same color appear different depending on its background, Fig. 8), Albers tested the mutability of perception, demonstrating how the reception of color shifts dramatically and is deeply situational. Though the two central forms in each study are identical in shape and color, the gray rectangle on a warm yellow field appears brown and static as compared with its more dynamic, though lower-contrast counterpart on a cool blue ground. The illusion, even in close proximity, is persuasive; as the eye compares, it remains difficult to reconcile the fundamental semblance of the two forms. The ambiguity of the gray shade—lively in one instance, dull in another, and therefore utterly dependent on its immediate context for definition—reveals the extraordinary attention and subtlety every visual experience demands of viewers. Careful study of the discrepancy between optical trickery (they *appear* as two different colors) and material reality (they actually *are* the same) can activate a fresh awareness of the constructedness of all habits of meaning in the world as well as the ambition to redesign them conscientiously.

Albers saw experimentation as the preeminent method by which the new and changing experiences of modernity could be expressed, and its "modern problems" addressed (first and foremost, how to develop a student's "independence, critical ability, and discipline"), and he envisioned its practice as a disciplined testing process encouraging innovative visual articulations.⁴² Art itself was the experimental arm of culture, investigating the "better forms" that are the prerequisite of cultural production and progress.⁴³ As he wrote:

To understand the meaning of form is the indispensable preliminary condition for culture. Culture is the ability to select or to distinguish the better, that is[,] the more meaningful form, the better appearance, the better behavior. Therefore culture is a concern with quality. Culture can be manifested in two ways: through recognition of better form and through producing of better form. The latter direction is the way of art. Art is the acting part of culture and therefore its proof and measurement.⁴⁴

Art was more broadly both an "intuitive search for and discovery of form" and "the knowledge and application of the fundamental laws of form."⁴⁵ Experimental processes constellate these interreliant features of artistic production: intuition and intellect. To Albers this dialectic had profound social effects. In one respect, practices of teaching and learning were mutually informing and interdependent; in an egalitarian educational climate it was possible to "break through the boundary between those teaching and those being taught, because then everybody will be teacher and student at the same time."⁴⁶ The problems posed in the classroom setting and as homework assignments should be stimulating to all—novice and expert, instructor and pupil.⁴⁷ In breaking down hierarchies of expertise, Albers by no means advocated



8 Josef Albers, *Color Study IV-3*, from *The Interaction of Color*, 1963 (artwork © Yale University Press; image provided by Yale University Press)

the dissolution of all categories of pedagogical distinction. Rather, he required of himself consummate skill; students would then “estimate as more competent . . . the one with more experience and insight.”⁴⁸ The goal was discovery, not demonstration: to shift from “giving information to giving experience.”⁴⁹ Experimentation, the testing operation that characterizes creative processes, builds skills of evaluation and assessment: “This one is better than that one and this shows more your expectations and your aims and all your efforts then you are on the way to build up yourself.”⁵⁰ The procedure of the test joins *comparison* and what Albers termed *competition*; it is both self-driven and motivated externally by variations in performance among members of a group:

Because this comparing includes of course competition—nothing is big, or nothing is small, when we do not see it

in [the] neighborhood of something bigger or smaller. . . . *That’s the relativity of all evaluation*, and if I want to evaluate myself by comparing my work with other work— That is comparison and is also competition.⁵¹

Competition—not antagonism—impelled personal growth and progress within a group by encouraging careful evaluations of subtle changes in performance.⁵²

In this explicit focus on competition, Albers differed from other Geometric Abstractionists, notably Ilya Bolotowsky, Albers’s replacement when he went on sabbatical from Black Mountain in 1946–47. In Bolotowsky’s classes students were urged to produce “mature” work regardless of whether it emulated the styles of other artists, resulting in some conflict at the college, as he effectively repealed Albers’s group exercise techniques. Bolotowsky’s courses at Black Mountain pro-

pounded a “universal plastic language with sufficient room for individual difference” in which “Originality is encouraged.”⁵³ Bolotowsky was Albers’s junior by twenty years, and he and other abstract painters such as Fritz Glarner had been highly receptive to Piet Mondrian and Neo-Plasticism in the late 1930s. Bolotowsky took it on faith that abstraction, not “nature,” was the preeminent modern practice because it captured the essence, not the appearance, of form. Though Bolotowsky and Albers were founding members of the American Abstract Artists (AAA) group in 1936, Bolotowsky’s emphasis on essence precluded any comparative or experimental testing framework. As he explained in language indebted to Mondrian’s more Neoplatonic moments, “The majority [in AAA] felt that all worthwhile art has to begin somewhere in nature and then become the essence of it, but a few of us would simply start abstractly and reject nature. . . . Abstract art is striving to depict an essence of harmony.”⁵⁴ His emphasis on the immanence of abstraction and the rejection of nature stood in direct opposition to Albers’s methodology, especially as the latter’s model of the test demanded careful observation of the order of existing appearances in the interest of rearticulating them.

Albers’s investigations of form, however, were undertaken not in the interest of generating immediately viable or mature art practices. The goal of the courses was not necessarily to produce anything useful but rather to train observation. As Albers stated, “In designing there are besides technical and economical problems also problems of form which are independent of a purely functional approach.”⁵⁵ To help students avoid succumbing to tendencies of habit or to pressure them to supersede work of the past, Albers advocated “experiment without aiming to make a product.”⁵⁶ He identified intuitive elements in art production available to those with trained vision, recognizing that there are “many unknown and incalculable X’s which makes it impossible to find every solution by figuring, reckoning and calculating.”⁵⁷ Albers counseled students to devise exceptional situations in which his “worst enemies”—symmetry and predictability—were most effectively supplanted by dynamism and discovery.⁵⁸ The unlabored exercise frequently succeeded; one student recounted how Albers’s first assignment in Basic Design supplied only a few newspapers with the request to “try to make something out of them that is more than you have now.” Dismissing the resulting boats, animals, airplanes, little figurines, and masks as “kindergarten studies which could have been made better in other materials,” Albers alighted on a study of great simplicity in which a young architect folded the newspaper lengthwise and stood it up to resemble a standing screen:

Albers explained to us how well the material was understood and utilized—how the folding process was natural to paper . . . now that the paper was standing up, both sides had become visually active. The paper had lost its tired look—its lazy appearance. After a while we caught on to his way of seeing and thinking.⁵⁹

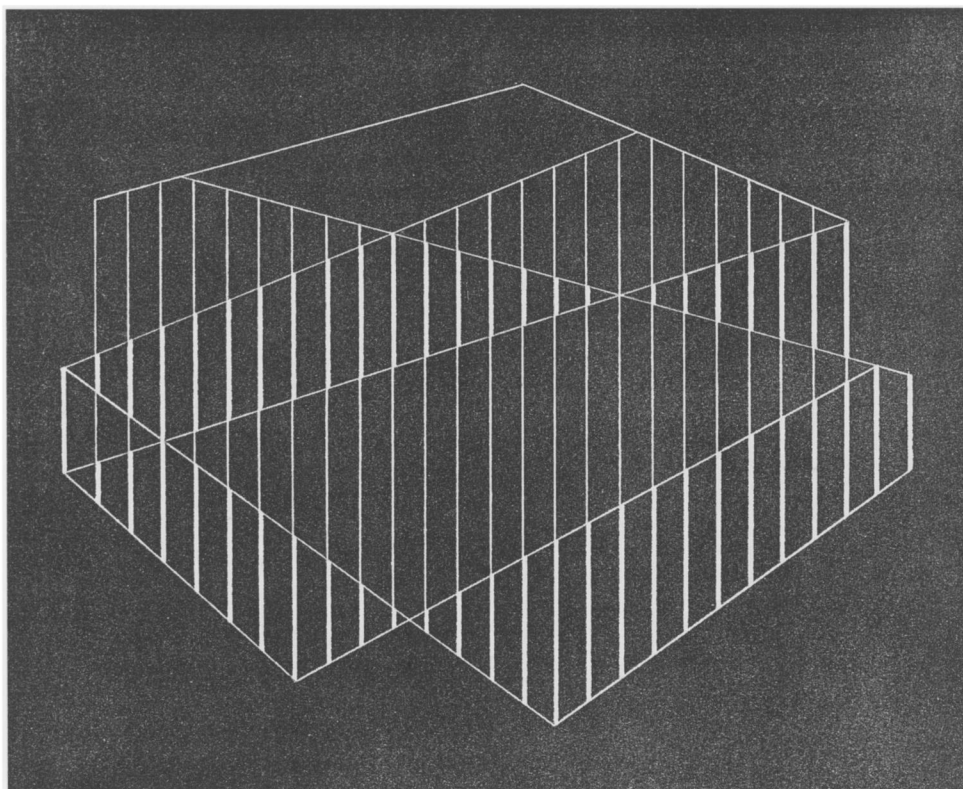
An expanded notion of art as mediating between vision and culture led Albers to maintain, “Art is a province in which one finds all the problems of life reflected—not only the problems of form (e.g. proportion and balance)” but also

what he termed “spiritual problems,” problems of “philosophy, of religion, of sociology, of economy.” In broadening the definition of art to include visual explorations of all sorts, Albers’s pedagogy posited the role of creativity in society as a consciousness to the breadth of visual experiences, beyond those observed in the “laboratory” of the classroom. Attentiveness to details of form meant, to Albers, an alertness to the ways in which the individual was sited in the larger field of social relations. *Everything in the world has form*; training the eye in the composition of form was a precondition for understanding and possibly transforming the material appearance and immaterial relations in the world. Albers believed that above all, “Our art instruction attempts first to teach the student to see in the widest sense: to open his eyes to the phenomena about him and, most important of all, to open to his own living, being, and doing.”⁶⁰

Containers for Variation

Experiment, seen in the light of Albers’s body of writings on the test in art and in arts education, helps unpack his own body of work in various media undertaken in his years in the United States. Albers’s production at Black Mountain in particular was tremendously catholic; though he had begun his career at the Bauhaus as a glass artist, at the college he produced photographs, photomontages, furniture, lithographs, wood- and linoleum cuts, pen-and-ink drawings, and oil paintings. In spite of this diversity, Albers’s work from Black Mountain can be divided into roughly two long-term projects: the black-and-white Graphic Tectonics lithographs (1942–48) and the oil on Masonite Variants (1947–53). Leaving Black Mountain to teach at Yale, he continued to develop the concerns about color perception initiated in the Variants in the later Homage to the Square series (1950 until his death in 1976), as well as those of dimensional perception from the Graphic Tectonics in his subsequent Structural Constellations (1949–58).

His work reflected a deliberate experimentation with the constitutive elements of form, centering on the coloristic and geometric relations organizing the appearance of forms on a two-dimensional surface. The scheme of each construction produces internal frictions and instabilities and must be provisionally extricated from multiple and contradictory dimensional readings. For instance, in Albers’s linoleum cut *Fenced* (1944), interlocking irregular trapezoidal and triangular forms are demarcated in a regular pattern of vertical lines in two contrasting widths (Fig. 9). As one follows the diagonals to find the outline of a half-perceived three-dimensional object, the impossibility of extracting such an illogical dimensional form from the matrix of surrounding verticals summons once again an overall flatness to the image. The contingent structure of the jigsawed composition in *Fenced*—is it more two dimensional than three dimensional? is it a unified shape or several intersecting or even disparate, overlapping forms?—generates optical challenges (though Albers disdained association with the later Op art moniker) and exposes the rudimentary representational conditions necessary to construct spatially ambiguous images. As Albers observed of a similar work, “No matter where you start to read, you will never find a logical conclusion. And this, despite the fact that



9 Albers, *Fenced*, 1944, linoleum cut, 10 × 12 in. (24.4 × 30.5 cm). The Josef and Anni Albers Foundation (artwork © The Josef and Anni Albers Foundation / Artists Rights Society, New York; photograph by Tim Nighswander)

there is no arbitrary point or line, every part is mathematically derived from the underlying square.⁶¹

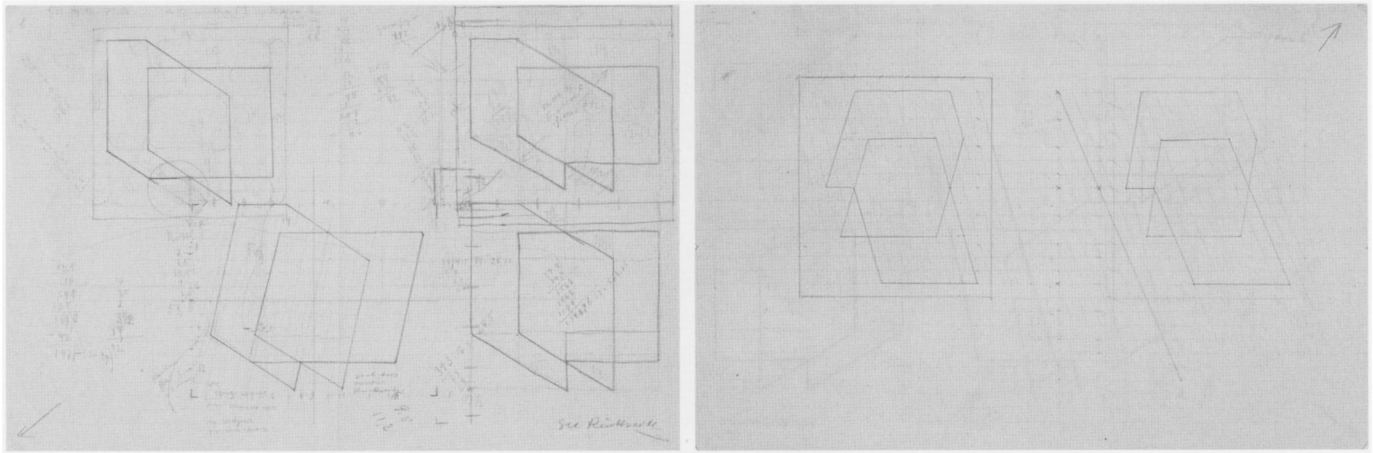
The distinction between the optical and the conditions under which opticality is understood cognitively was vital in Albers's work. To Albers, "In all visual perception, the initial reaction is optical"—that is, there is a physical fact of seeing that results in what he termed "a retinal projection." Yet the effects of optical stimuli elicit varied perceptual responses that go beyond mere opticality; they are "post-retinal" and occur as the mind synthesizes the visual data of a retinal projection. As Albers was fond of quoting, "Only there [in the mind] occur such important changes (reactions, results) as, for instance, that gentlemen prefer blondes."⁶²

Perceptual responses in turn condition cognitive understandings of the world and one's ability to formulate and change the comprehension of objects and events. (Yve-Alain Bois's paraphrase of the Russian Formalist conception of representation—"form is always ideological"—is worth bearing in mind when considering Albers's circuit of testing perception against cognitive meanings.⁶³) Perception mediates between the physical fact of seeing and the socially and psychologically determined effects of vision. This zone of perception, as opposed to optics, is where Albers couched his artistic practice, tagging it "perceptual art."⁶⁴ And in this zone Albers emphasized above all "perceptual ambiguity" as opposed to mere "optical deceptions," which occur in all representation but fail to educate the viewer in seeing more attentively.⁶⁵ Revealing the mechanisms of perception could be accomplished with very limited visual data, hence the predilection toward abstraction. As Albers asserted, "The *how* is more important than the *what*."⁶⁶

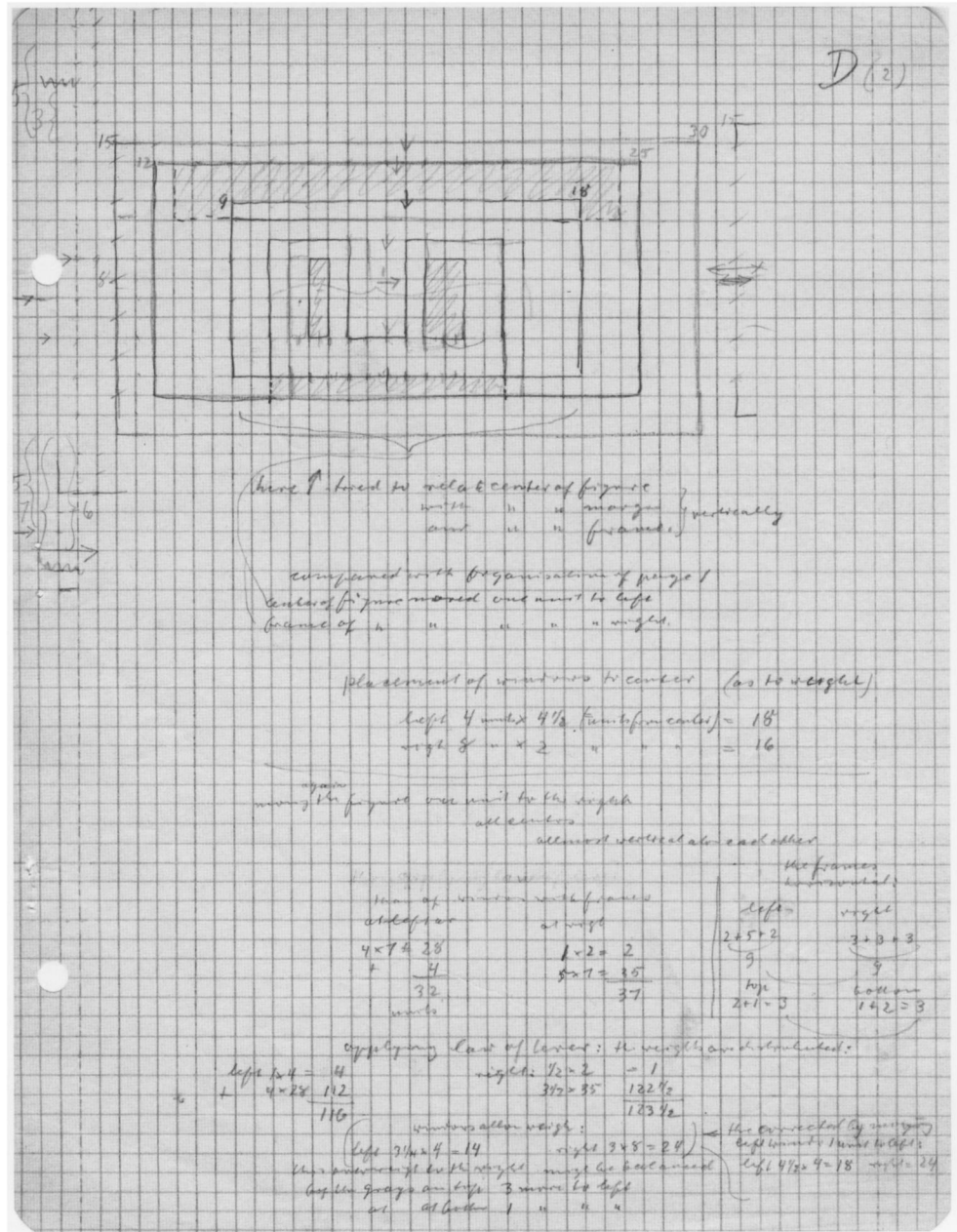
Albers's sketches and studies reveal the systematic trial-and-

error process that each work underwent before completion, and how in fact the "finished" works themselves are composed of systematic variations and are produced in series. In a pencil study from 1937, for example, careful calculations of surface area determine alterations in the balance of each form, and a series of measurements analyzes the spacing of the central forms as separated from the edges of the future work (Fig. 10). Minute adjustments and transpositions of certain elements of the repeated forms are worked out in subsequent iterations of the innermost form. For the late 1940s Variants, Albers filled dozens of graph paper sheets with precisely drawn sketches surrounded by detailed calculations of distances, area, and proportions (Fig. 11). The "windows," as Albers termed the central squares of the Variants, are indicated in different positions in relation to the surrounding "frames." Various figures drawn in colored pencil are carefully marked off by the number of graphed squares they occupy. In Albers's close script, meticulous reactions to the tested schemas are noted. One page contains the following registration of different placements of a single window:

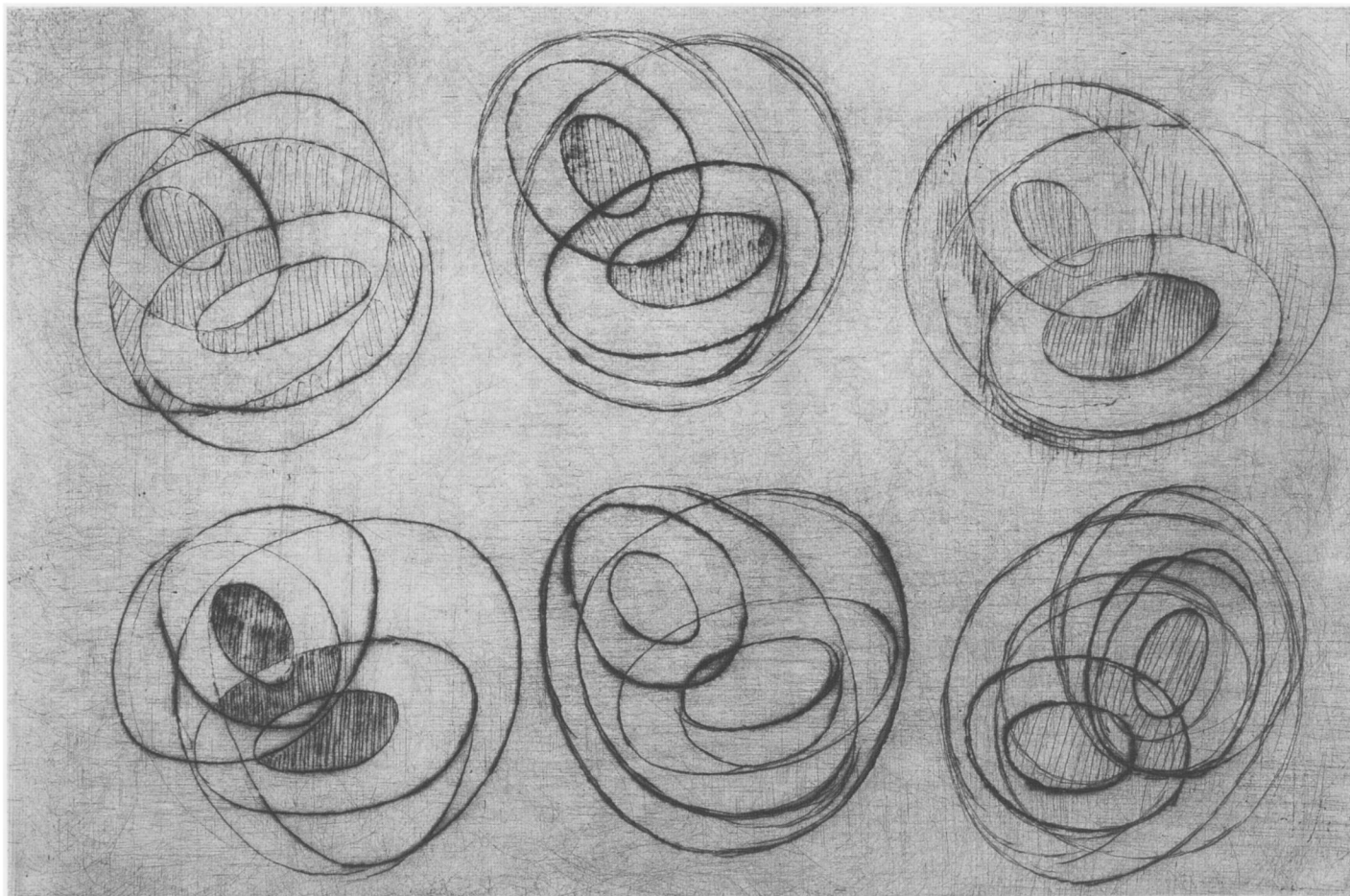
Have tried to relate center of figure (vertically) with center of margin (vertically) and with the center of frame (vertically) . . . compared with organization of page 1 center of figure moved one unit to left, frame of figure moved one unit to right . . . moving again the figure one unit to the right, all centers almost vertical with each other . . . this movement to the right must be balanced by the grays on top, 3 more to the left, and at bottom 1 more to the left.



10 Albers, *Studies for Abstract Paintings*, ca. 1937, pencil and red pencil on wove paper, ruled in pencil, 9¼ × 13¾ in. (23.5 × 34.9 cm). The Josef and Anni Albers Foundation (artwork © The Josef and Anni Albers Foundation / Artists Rights Society, New York; photograph by Tim Nighswander)



11 Albers, sketch for *Variants D(2)*, n.d., pencil on paper, 8½ × 11 in. (21.6 × 27.9 cm). The Josef and Anni Albers Foundation (artwork © The Josef and Anni Albers Foundation / Artists Rights Society, New York)



12 Albers, *Variants*, 1942, drypoint, edition of 20, 6 × 8½ in. (15.2 × 22.5 cm). The Josef and Anni Albers Foundation (artwork © The Josef and Anni Albers Foundation / Artists Rights Society, New York; photograph by Tim Nighswander)

This systematic testing and factoring of each altered variable governed the subsequent iterations of the work's structure.

Similarly, his drypoint engraving *Variants* (1942) represents a series of virtually identical forms subjected to a methodical procedure of modification and recombination on the basis of the figure's orientation (Fig. 12). Alternating segments of each individual form-group are shaded in different arrangements; in the lower right shape, the orientation is transposed. In his sketchbooks Albers would carefully draw figures and then invert them, using heavily marked areas as reference points in the reversals in order to test the changing perception of dimensionality in each (Figs. 13, 14). Under a shaded version of the sequence is written in pencil: "The right angles—the square—around the figure do not remain—frontal!" Albers's attempts to adapt the figure test the visual effect of the interlocking forms in various orientations, charting variation among the forms subject to doubling and reversals. This can be seen in a sketch of nine related figures where Albers maintains a double series of Xs throughout each figure, varying the angles slightly as he embeds cubes within their armature (Fig. 15). As the figure is rotated in space, the Xs are seen torqued, transposed, and eventually resolved, as with the upper right figure, when a new set of angles has in turn become the control factor.

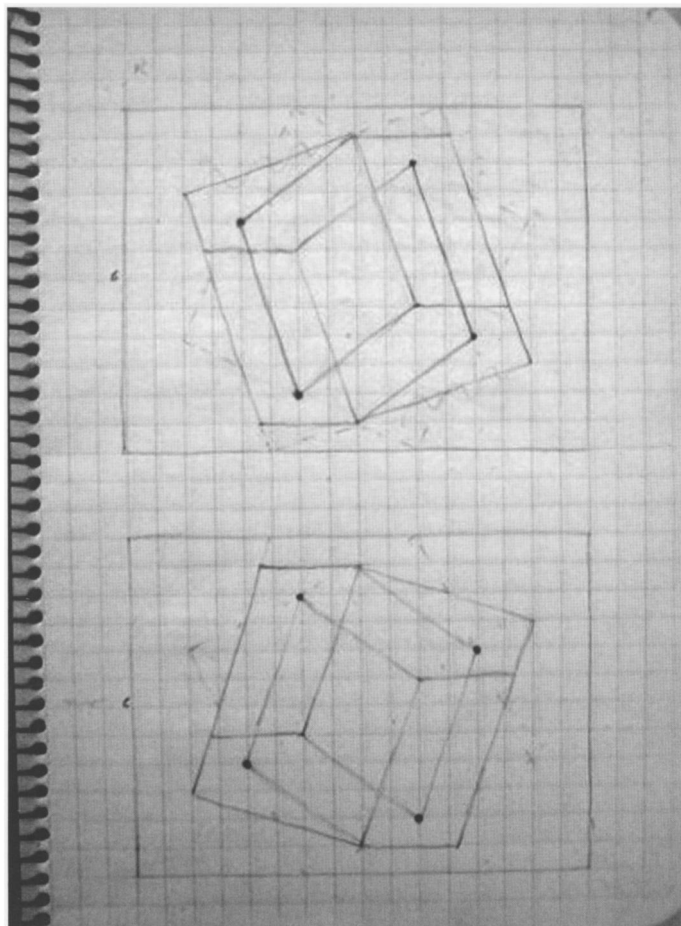
Describing these controls, Albers distinguished between

the casual attitude he termed "variety" and the experimental rigor of "variance":

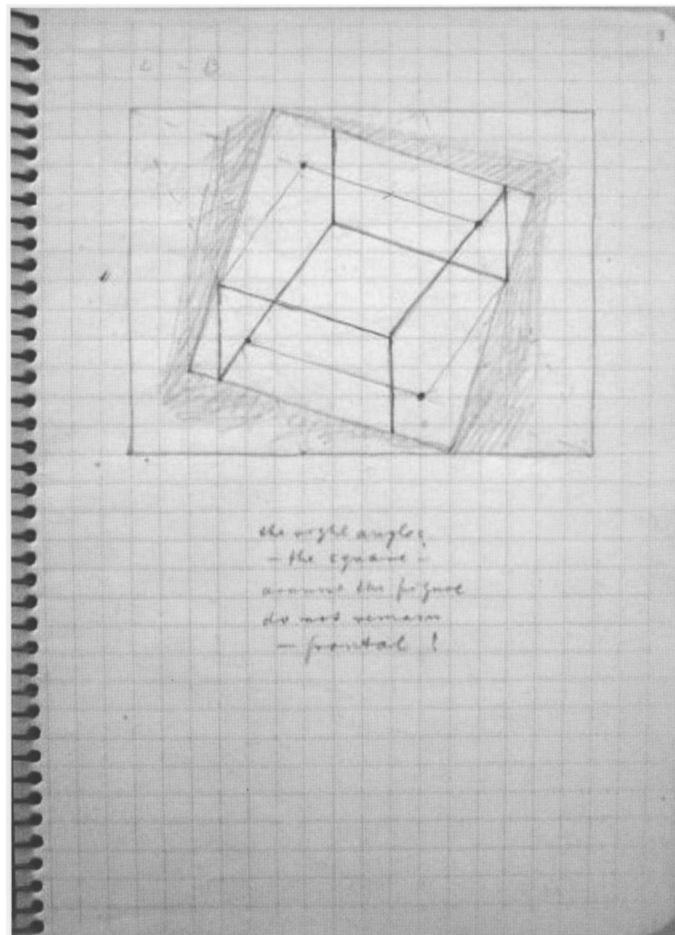
The word variety, although recently a favored design term, has become discredited because of increased abuse. It has become a pretentious recommendation for designs of questionable merit. It is applied to protect hurried changes, to excuse poor alterations, or to defend any accidental and meaningless whim. . . . Thus the excuse "for variety's sake" remains a warning signal.

To replace this negative criterion, we are in favor of a related word of better reputation, the design term "variant." As variety usually concerns changes of details, variant means a more thorough re-doing of a whole or of a part within a given scheme. Although variant may remind us slightly of imitative plagiarism, normally it results from a thorough study. Because of a more comprehensive comparison forth and back, it usually aims at a new presentation. On the whole, variants demonstrate, besides a sincere attitude, a healthy belief that *there is no final solution in form; thus form demands unending performance and invites constant consideration*—visually as well as verbally.⁶⁷

As he later reformulated this idea, "The final ending, the end



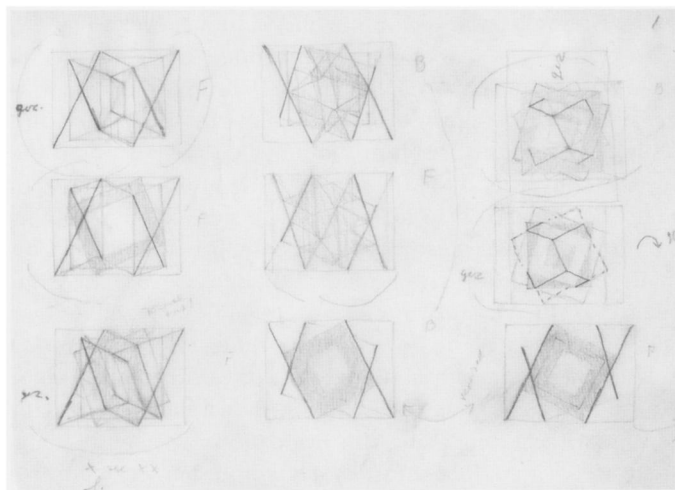
13 Albers, *Sketch*, from notebook no. 4 SC 766-843, p. 3, 1953. The Josef and Anni Albers Foundation (artwork © The Josef and Anni Albers Foundation / Artists Rights Society, New York; photograph by Eva Díaz)



14 Albers, *Sketch*, from notebook no. 4 SC 766-843, p. 5, 1953. The Josef and Anni Albers Foundation (artwork © The Josef and Anni Albers Foundation / Artists Rights Society, New York; photograph by Eva Díaz)

quality of all form will not be—cannot be—decided upon.”⁶⁸ What Albers advocated was not simply following a set of rules but rather *reworking* continually, being a perpetual student of the complex organization of forms in our world. The notion of competition as elaborated in his teaching method undergirded this interest in testing—each iteration a test of the qualities of the material and of the ability of the artist to discern growth and change. He explained, “In my own work I am content to compete with myself . . . so I dare further variants” (Fig. 16).⁶⁹

In his many studies for the Variants, Albers devised tools and techniques to facilitate his tests of possible color arrangements and orientations in the series. Detailed preparatory studies functioned as “experimental tryouts” for paintings that were themselves intelligible only within a schema of experiments in formal possibilities, rather than discrete and final entities.⁷⁰ In a sequence of templates (for example, Figs. 17–21), Albers painted concentric borders in alternating colors on several different cardboard mats. He then overlaid these “frames” around different central arrangements, testing the possibilities of color and scale organization of the work by changing the different panels. Varying the interrelated borders by alternating the order of the panels, Albers used the visual “data” to assess more appropriate contrasts



15 Albers, *Sketch*, likely for the Structural Constellations series, n.d., pen and ink on paper. The Josef and Anni Albers Foundation (artwork © The Josef and Anni Albers Foundation / Artists Rights Society, New York; photograph by Eva Díaz)

and to create the most dynamic compositions. In other studies for the Variants, Albers often tried out several color combinations, painstakingly labeling the constitutive ele-



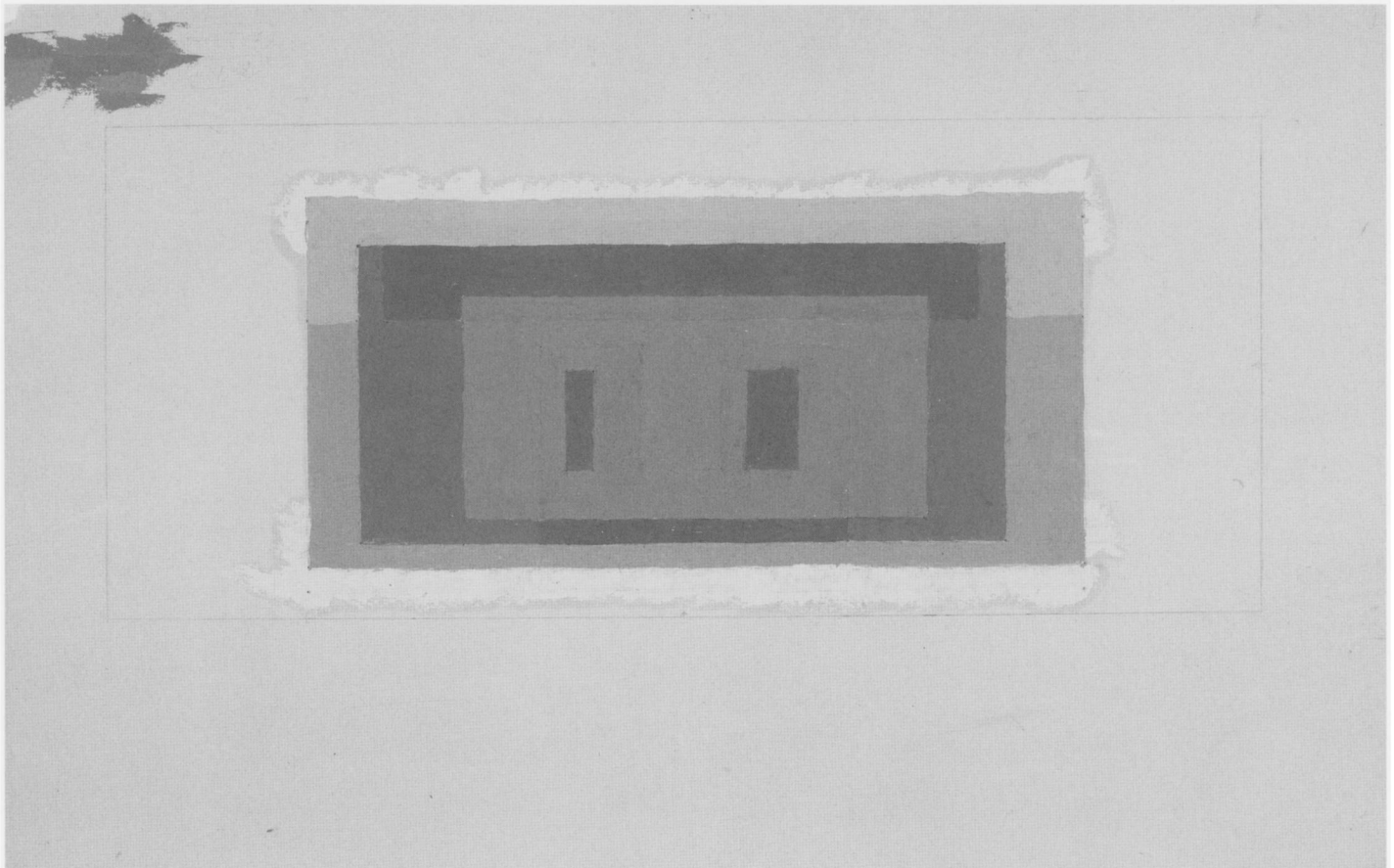
16 Albers, *Spring 39 (Josef Albers Painting at Black Mountain College)*, 1939, photo collage of 21 images, 8 × 9 in. (20.3 × 22.9 cm). The Josef and Anni Albers Foundation (artwork © The Josef and Anni Albers Foundation / Artists Rights Society, New York; photograph by Tim Nighswander)

ments by application technique and manufacturer (Figs. 22, 23). As the orientation of the embedded elements was altered, Albers would calculate the relations of the various surface areas, weighing the components by their color and volumetric intensity. Each of the penciled recipes noted the precise constitution of the study and permitted Albers to adjust specific factors until a desirable result was obtained; his paintings include these protoconceptualist instructions on their reverse sides as well (Fig. 24). Because of the serial quality of the Variants, however, Albers believed that “new and different cases will be discovered time and time again.”⁷¹

The criteria that substantiated the successful completion of a particular work was intelligible only within a context of continual variation. Using the principle of dynamism—palpable when a composition refused simple harmony and remained asymmetrical, imbalanced, and syncopated—Albers attempted to maximize the contrast between elements in a given composition. With the potential for countless renditions, each work completes an intricate process of testing and also demands evaluation and comparison between completed works. There are no “masterpieces” in Albers’s career; each work emerges from the success of its forerunner and initiates the explorations of its successor.

He maintained other “control” factors that made possible a judicious analysis of the element under inspection, be it

orientation, surface area, color, or dimensional ambiguity. When painting the Variants, Albers used the same basic “checkerboard-like structure . . . which provides a definite relationship of all the parts” to one another.⁷² This allowed modulations in color and orientation to remain measurable when compared with one another. Unmixed colors were spread with a palette knife straight from the tube onto Masonite panels (rose and pink were exceptions, as they are unavailable without mixing) and applied in one coat without underpainting; striking textural differences often resulted from the distinct consistencies of different paint brands (see the purple section of *Variant*, Fig. 25). The always unshaded surfaces of the various sections create flat expanses of color that are tightly abutted by their neighboring hues. Yet for all the precision of the sketches, marked as they are on graph paper in scrupulous ruled lines, in the painted *Variant* Albers relished a rapid application of color with the knife. The resulting edges, seemingly flawless from afar, are in fact loose and sometimes inexact, with visible facture and the pilled texture of the Masonite evident in certain sections, as in the detail of *Variant: Southern Climate* (1948–53, Figs. 26, 27). The performance was so stringently rehearsed in preparatory studies that the paintings themselves profited from Albers’s facility with the knife; he painted the hard edges with penciled-in guidelines but with no masked-off tracing edges.

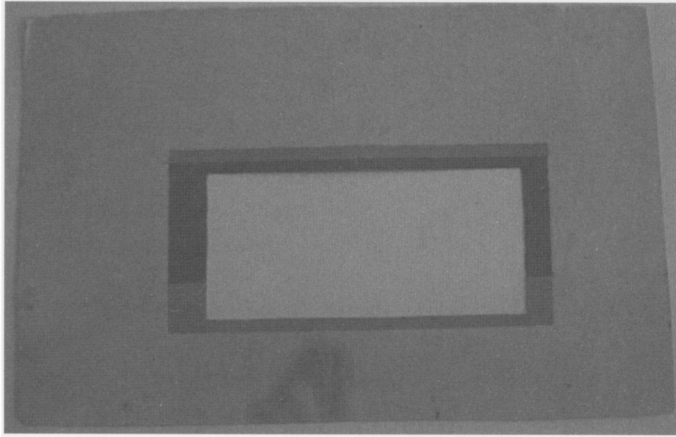


17 Albers, template for a *Variant* study (1 of 5), n.d., 12 × 19 in. (30.5 × 48.3 cm). The Josef and Anni Albers Foundation (artwork © The Josef and Anni Albers Foundation / Artists Rights Society, New York; photograph by Tim Nighswander)

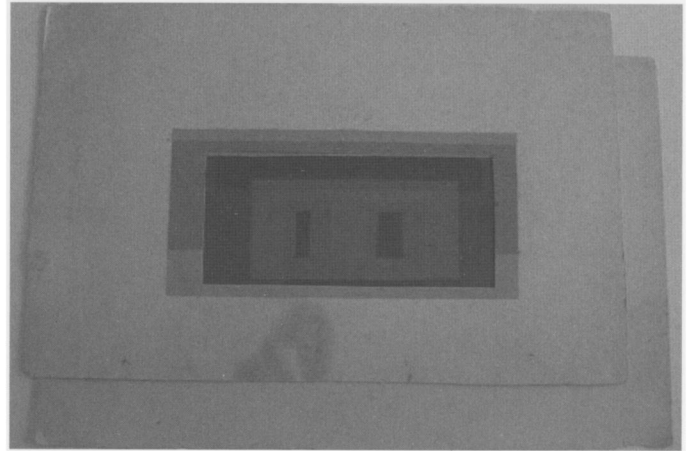
In his yellow, green, white, and gray *Variant* from the late 1940s, the appearance of depth is illusionistically suggested in certain areas but refused in others (Fig. 28).⁷³ Here Albers was interested in the perception of proximate or adjacent areas of darker or lighter color as either transparent overlays or areas of opacity. Through a meticulous and methodical process of color and compositional studies, as in *Study for a Variant (III) C* (1947), Albers applied bands of color to contiguous sections of the concentric rectangles, confusing the optical impression that the various forms are either embedded in or superimposed on one another (Fig. 29). Areas of translucency and overlap and, hence, impressions of spatial recession—for example, the appearance of the gray horizontal band in *Variant*—are contradicted by colored zones that project over and around the ostensibly covered-over section, such as the bright elevation of the area of white (Fig. 28).

Each of Albers's techniques of illusion implicates viewers, inviting them to become students of the processes of visual perception at play in his work, just as he was in its creation. What Svetlana Alpers has termed "pictorial equivocation" is in operation for Albers: "The possibility of the painter representing the perception of a thing, and representing it for viewers, in such a way as to encourage the mind to dwell on perceiving it as a process: the painter's experience of an object as coming into its own, distinguishing itself from others, taking shape."⁷⁴ The sense of perception as a process—the "how" and not the "what"—is derived from Albers's con-

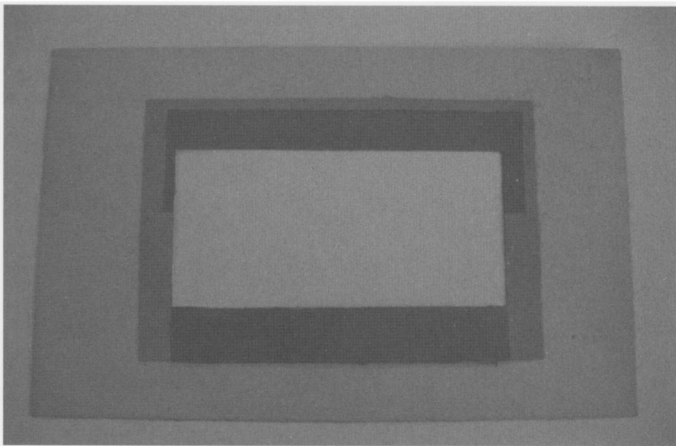
ception of "gestalt," or form, as an active procedure: "If I had to determine the task of a designer, an artist, or of any kind of creative worker I would use the German verb 'gestalten.'" (As Albers was aware, *gestalten* constitutes a vast subject in German thought; in his writings he connected it to Gestalt psychology's evaluation of a form element in relation to a whole.)⁷⁵ *Gestalten* can mean a variety of things: to arrange, to create, to design, to frame, to fashion, to organize, or to form; form in Albers's rhetoric was therefore positioned as a practice and procedure, not as the artifact of a process,⁷⁶ as demonstrated in *Variant: Southern Climate* (Fig. 26). Here, two sand-colored central windows appear to project over the surrounding bright and muted orange frames, yet are simultaneously pulled back toward the top sand-toned horizontal plane that deceptively appears to be the overall ground. The oscillation between foreground and background emphasizes the inherent temporality of the process of perception and brings home the fundamental ambiguity of seeking any final, stable resolution to the pictorial problems Albers explores. The viewer vacillates between two roles that Albers himself occupies as creator: acting as subject of the experiment in vision and as organizer of the mutable effects transpiring in the visual field as the image's components are scanned. Experiencing the basic units of perception, his audience is invited to work through sections of the picture plane, to weigh imbalances and test dynamic relations. Donald Judd, commenting on an Albers work he owned (Fig. 30), admir-



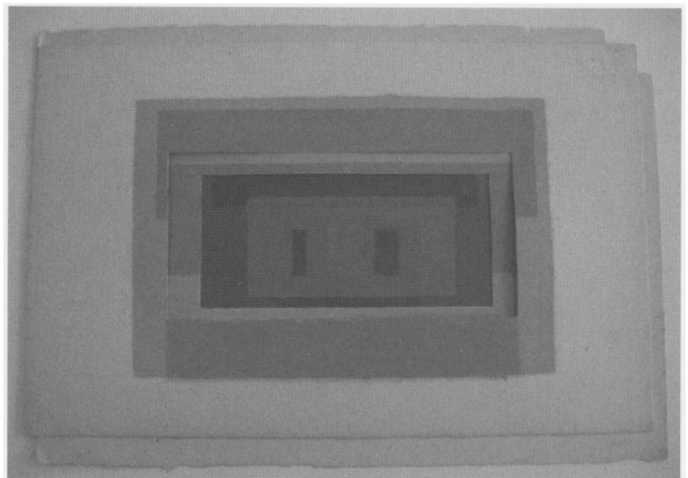
18 Albers, template for a *Variant* study (2 of 5), n.d., 12 × 19 in. (30.5 × 48.3 cm). The Josef and Anni Albers Foundation (artwork © The Josef and Anni Albers Foundation / Artists Rights Society, New York; photograph by Eva Díaz)



19 Albers, template for a *Variant* study (3 of 5), n.d., 12 × 19 in. (30.5 × 48.3 cm). The Josef and Anni Albers Foundation (artwork © The Josef and Anni Albers Foundation / Artists Rights Society, New York; photograph by Eva Díaz)



20 Albers, template for a *Variant* study (4 of 5), n.d., 12 × 19 in. (30.5 × 48.3 cm). The Josef and Anni Albers Foundation (artwork © The Josef and Anni Albers Foundation / Artists Rights Society, New York; photograph by Eva Díaz)



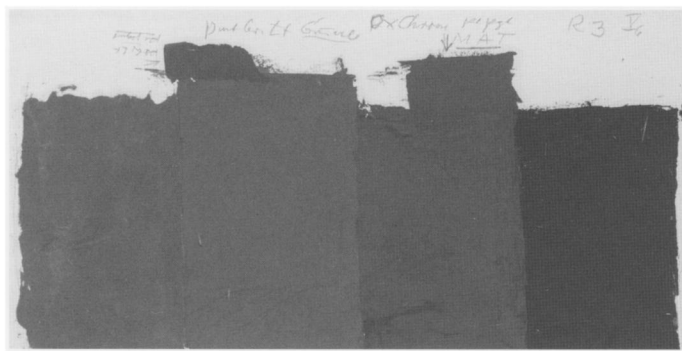
21 Albers, template for a *Variant* study (5 of 5), n.d., 12 × 19 in. (30.5 × 48.3 cm). The Josef and Anni Albers Foundation (artwork © The Josef and Anni Albers Foundation / Artists Rights Society, New York; photograph by Eva Díaz)



22 Albers, *Green Study* (SB 38/56), n.d., 4¾ × 9½ in. (12.1 × 24.1 cm). The Josef and Anni Albers Foundation (artwork © The Josef and Anni Albers Foundation / Artists Rights Society, New York; photograph by Tim Nighswander)

ingly observed of this process, “The painting is one single whole and is as complex as a metope. The scheme of squares and the corresponding change of color provides changes in

proportion . . . as in a Mobius strip.”⁷⁷ The appearance of squares as either embedded or superimposed in the Variants is contradicted by the visible adjacency of the paint applica-

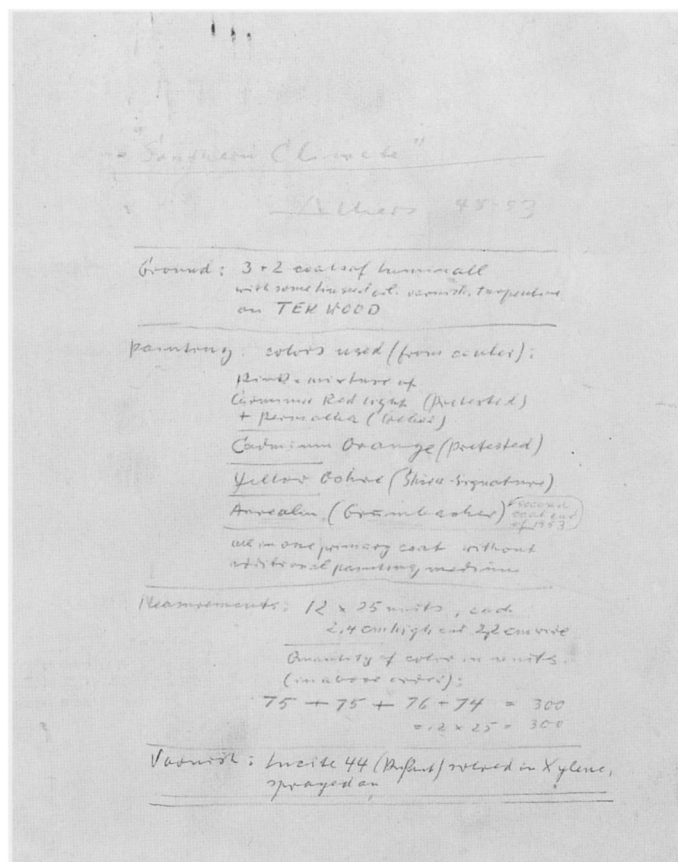


23 Albers, color study (SB 40 177), n.d., $4\frac{7}{8} \times 11\frac{1}{8}$ in. (12.4 × 28.3 cm). The Josef and Anni Albers Foundation (artwork © The Josef and Anni Albers Foundation / Artists Rights Society, New York; photograph by Tim Nighswander)

tion seen in the thin strips where they meet and the narrow windows revealing stripes of background. In the seemingly elementary demonstration of concentric squares and rectangles, the complicated language of vision is built up so that the illusions of representation are confronted by the materiality and inherent flatness of paint.

Concentrating on the elements of perception, Albers participated in a shared German-Austrian modernist project of the 1920s and early 1930s in which, according to Galison, “All knowledge . . . would be built up from logical strings of basic experiential propositions.”⁷⁸ Not coincidentally, there existed a close association of Bauhaus ideology with Vienna Circle logical positivist philosophy, which grew out of the work of Ludwig Wittgenstein and was expounded in the lectures of Otto Neurath and Rudolph Carnap at the Dessau Bauhaus in the late 1920s. According to Carnap, the organization of knowledge out of a repertoire of fundamental perceptual experiences unified all modernist endeavors, whether visual or linguistic. In explaining his “constructional program,” he noted, “It attempts a step-by-step derivation or ‘construction’ of all concepts from certain fundamental concepts . . . all concepts can in this way be derived from a few fundamental concepts.”⁷⁹ Concerned with how basic units of perception organize knowledge, Neurath postulated that one could backtrack, too, from gestalt to basic compositional units. If forms in combination could be seen as gestalt wholes, what was to stop their constituent parts from being reduced to gestalts themselves in an endless recursion toward an immanent and universal *ur*-structure of communication? However, Neurath’s quest for common codes of perception—namely, his attempt to invent a visually transparent international picture language—departs from Albers’s interest in applying the knowledge of fundamental forms toward further complexity, contingency, variation, and visual deception.

Indeed, Albers’s audience is invited to extend this concern with destabilizing vision to other aspects of how the world is perceived, represented, and understood. Albers’s mode of Geometric Abstraction is far from the detachment of art from social conditions advocated by “formalist” critics such as Clement Greenberg at the time.⁸⁰ Rather, Albers’s goal was to impel us to discover “which of certain art problems are related to our own life.”⁸¹ (One could make similar claims for

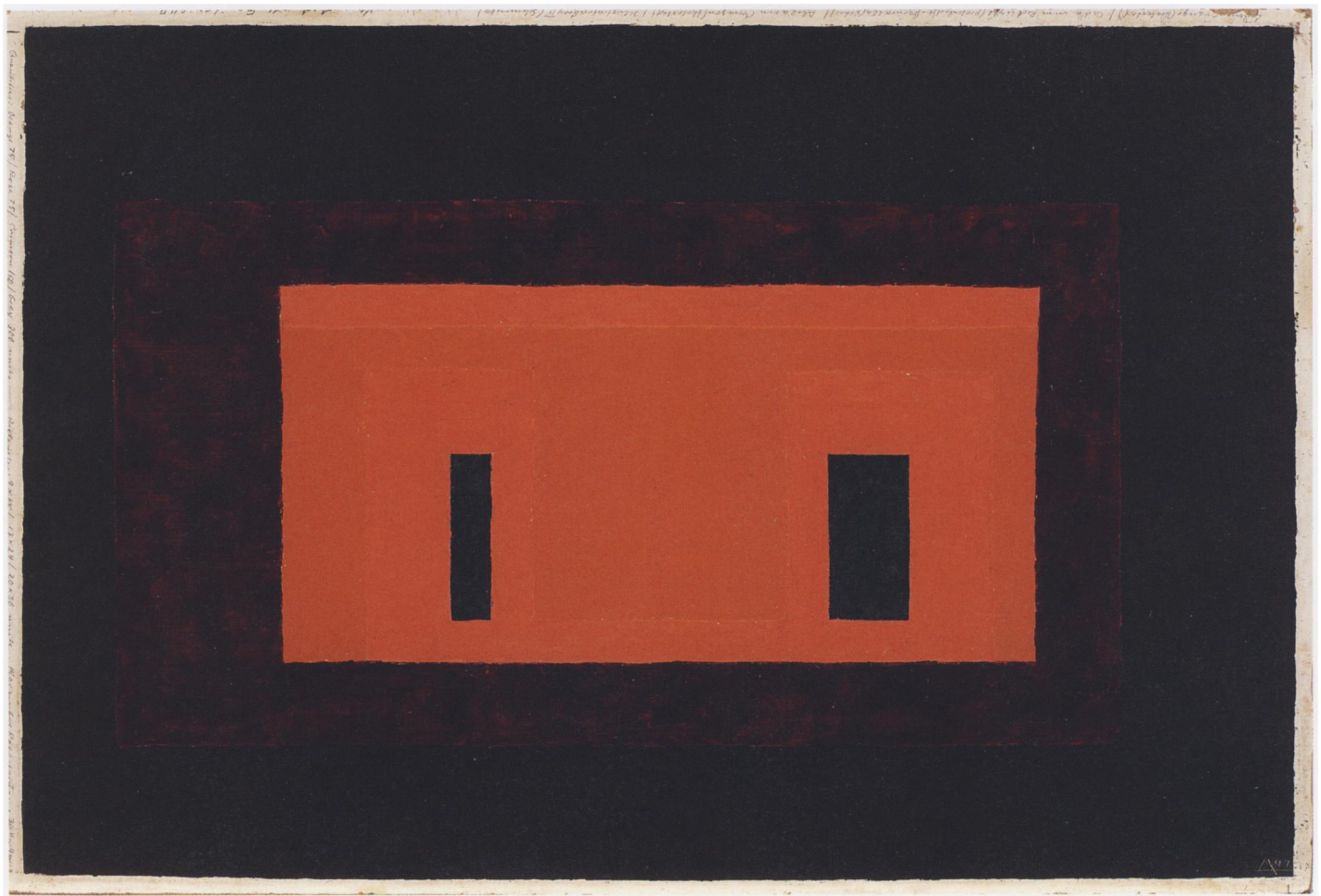


24 Albers, *Variant: Southern Climate*, reverse, 1948–53. The Josef and Anni Albers Foundation (artwork © The Josef and Anni Albers Foundation / Artists Rights Society, New York; photograph by Tim Nighswander)

the work of Kasimir Malevich, Mondrian, and others who viewed Geometric Abstraction as an exploration of perception in which art was part of a larger project telescoping out to environmental design and possibly social transformation.) The task was to test the relevance of certain rules that result from inherited experience *and* to devise parallels between problems common to life and art, recognizing that in “the problems of balance or proportion—that they are tasks of our daily life too.”⁸² Or, to put it another way, the objective was to demonstrate “that a fundamental art problem is a fundamental problem of life and therefore also of education.”⁸³

Nonetheless, the reflexive relation between better art production and a better performance in life never reached a point of conclusion. As in his courses, the goal of repeatable exercises was to enforce that “every evaluation is relative and changing,” that even in the same exercise different solutions emerge. Rather than impulsive self-expression, conscientious experimentation set forth criteria that could be used to compare different artists and individual works and encouraged “discovery of the varied perceptions of others.”⁸⁴ Realizing the contingency of all evaluation therefore underscored the profoundly social relation of art. In developing a common set of explorations, art was intelligible only within a community of understanding—“recognizing oneself and developing oneself in relation to others.”⁸⁵

The avoidance of self-expression was promoted for another reason, one with tremendously high stakes. For Albers, the



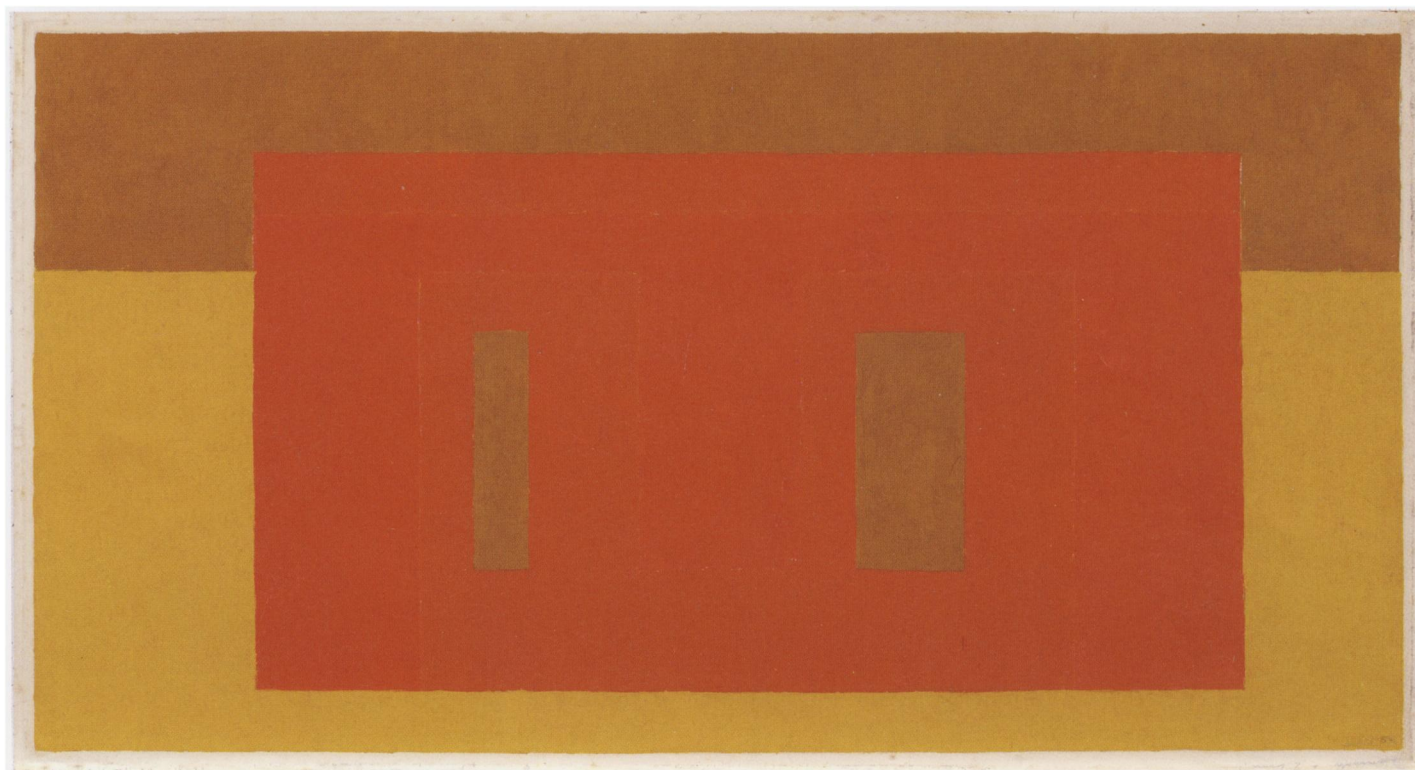
25 Albers, *Variant*, 1947, oil on Masonite, 12 × 18 in. (30.5 × 45.7 cm). The Josef and Anni Albers Foundation (artwork © The Josef and Anni Albers Foundation / Artists Rights Society, New York; photograph by Tim Nighswander)

stress on personal expression had come to justify all forms of trivial explorations, novel effects, and differences for the sake of difference. As he argued, “To produce something better will be more convincing than to do something merely different.”⁸⁶ He found the importance of art in personal and social growth immense, but growth was always qualitatively assessed, not measured by specious indicators of artistic originality. Albers thought of originality as nothing more than “forced individualism.” An artist’s “expression, style and/or contemporaneity is an unavoidable by-product of personality,” understood through the virtues of “honesty and modesty,” not as the “result of stylization” that most corroborates originality.⁸⁷ The ambition was to design something better—not necessarily more useful, individuated, or newer, but better in the sense of altering habits of perception and therefore improving the sensitivity of individuals to the construction and organization of the world. Only after detailed study and observation, and with a clear knowledge of how to articulate the appearance and behavior of forms could one articulate form creatively.⁸⁸

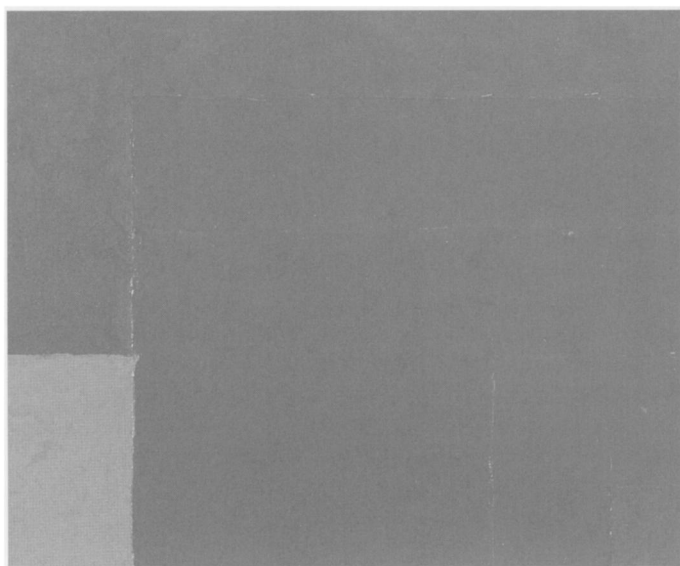
In erecting a foundation in visual analysis and active construction, Albers provided tools for the improvement of the self through creative production. This, however, was in no way a normative standard for art making more generally. As he claimed, “There is no objective interpretation of what is

art. I do not believe that there are any definite rules or systems by which to evaluate art, or, to distinguish between art and non-art.”⁸⁹ In fact, fulfilling the goal of “more initiative and more imagination . . . means encouragement of experiments,” regardless of the likelihood of failure. The courage to attempt was the main thing: “To me it is uneducational to be afraid of minor results. Everyone has to start as a beginner. And mistakes are not the worst media for progress if we develop at the same time articulation and judgment.”⁹⁰

But mistakes must be recognized as such and should not be exploited as an excuse for carelessness or acceptance of accident. As Albers firmly held, “Every art work is built (i.e. composed), has order, consciously or unconsciously.”⁹¹ Intellect must be applied, order demonstrated. Though a trained intuition was essential, art was not the realm of unmitigated passions, the negative example being “those painters in New York who can paint only when they get mad and drunk.”⁹² Albers demanded order not in the sense of symmetry or harmony, but rather as a dynamic consideration of a work’s components and their organization with respect to the whole, to the gestalt form.⁹³ “You tell the brush and pencil where to go. Not you follow the brush.”⁹⁴ Spontaneity or improvisation were to be discouraged as ends in and of themselves: “In my paintings I adhere to what in other arts is considered a matter



26 Albers, *Variant: Southern Climate*, oil on Masonite, 12¼ × 22½ in. (31.1 × 57.2 cm). The Josef and Anni Albers Foundation (artwork © The Josef and Anni Albers Foundation / Artists Rights Society, New York; photograph by Tim Nighswander)



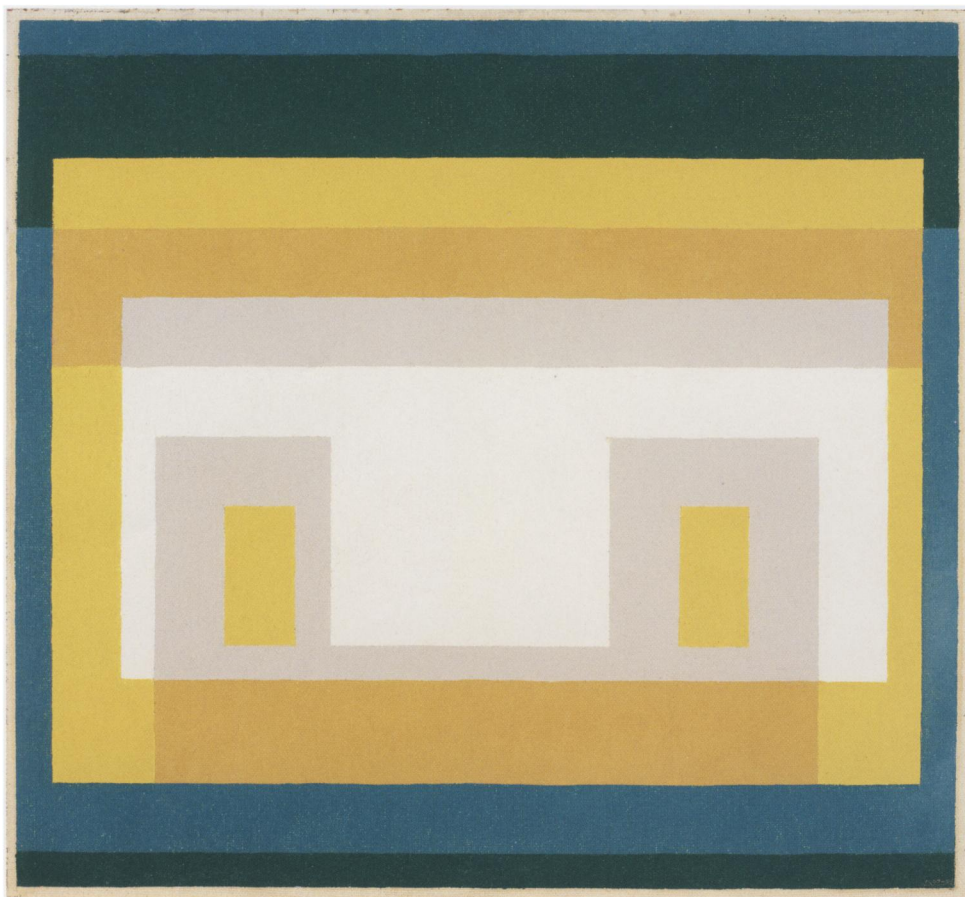
27 Detail of Fig. 26 (artwork © The Josef and Anni Albers Foundation / Artists Rights Society, New York; photograph by Tim Nighswander)

of course. Namely, that performance is prepared by rehearsal, that exercises precede recital, or plans, execution."⁹⁵

As Albers lamented, "Without comparison and choice there is no value. And why are we afraid that thinking and planning—necessary in all human activities—will spoil the painting of a picture?"⁹⁶ To take such a question seriously requires probing which methods of art production are sanctioned and assessing how these methods relate to conceptions of social order. Albers's ethics of perception maintains

that *the arrangement of a picture is a mirror to the way one organizes life*. "There is order . . . and in this sense this is [the order] of life. In art we have to present an example in which we might live together, and not shoot each other . . . that's our collective little baby. . . . For me studying art is to be on an ethical basis."⁹⁷ Better design alters habits of perception and can improve society—a nervy claim, perhaps, and yet a thoughtful argument for artistic responsibility.

This "ethical basis" was obtainable only through commitment demonstrated by competence. Progressing beyond mere observation to begin rearticulating the forms of the world in a creative way, one could then incorporate elements that came intuitively and somewhat spontaneously. This was only possible, though, when the mastery of techniques of formal articulation became so ingrained—the mind controlling the hand and not the other way around—that the artist could trust in his or her own innovation. In his 1969 book *Search versus Re-Search*, Albers quoted Louis Pasteur: "In research, chance only helps those whose minds are well prepared for it," and inserted the comment, "*Is that different from art?*"⁹⁸ The radical repositioning of art practice as subject to unconscious desires advocated by Surrealism, for example, was anathema to Albers; it mistook what he argued as the incommunicability of the unconscious as a key object of interest. Pinpointing what he considered the fallacy of automatic drawing, he explained, "Automatism is a good point of departure but rarely an end of lasting interest. Let us be clear that there is no hand nor tool nor medium quick enough to follow adequately the speed of the 'stream of the unconscious.'" Continuing in this vein, he contended, "The saying that the freshness of the first sketch cannot be repeated is



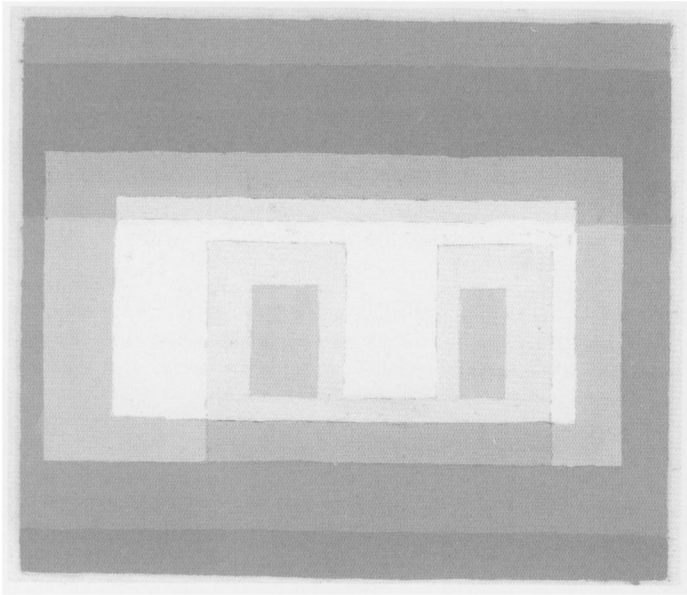
28 Albers, *Variant*, 1947–55, oil on Masonite, 26 × 28¼ in. (66 × 71.8 cm). The Josef and Anni Albers Foundation (artwork © The Josef and Anni Albers Foundation / Artists Rights Society, New York; photograph by Tim Nighswander)

admitting impotence.⁹⁹ To Albers, the Surrealists' attempt to mediate art and the unconscious muddled the prospect of art, which was not to mimic the structuring principles, however disordered, of involuntary functions of the mind. Rather than search for the repressed material of the unconscious, Albers sought to convey the principles underlying the apprehension of everyday life. Understanding and changing routines of visual perception was the goal of art. He held, "There is no extraordinary without the ordinary, and the root of both is order."¹⁰⁰ Given Albers's interest in expressing the contingency of forms through repeated trials, this insistence on order may seem paradoxical, but to him art, at its root, possessed a crucial strategy—*design*.

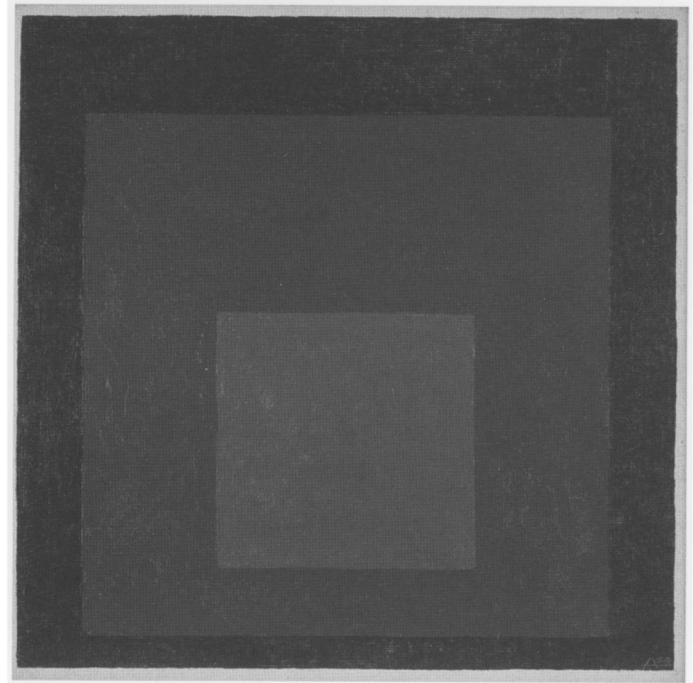
In 1949 Albers claimed, "Progress does not depend on accidents only. Without order and control we will drown or suffocate in chaos and decay."¹⁰¹ Design was the force that held chaos at bay: "To design is to plan and organize, to order, to relate and to control. In short it embraces all means opposing disorder and accident."¹⁰² The role of art was to articulate forms out of the flux of "mess, chance, and confusion" that was too often symptomatic of poor execution and lax thinking.¹⁰³ The practice of being economical with materials demonstrated the deliberation that went into production: "Nothing *unused* is permitted in any form, otherwise the calculations will not work out. Because chance has played a role. Chance has not been accounted for, and therefore it is *thoughtless*, because it derives from habit."¹⁰⁴ The imperative to design, in Albers's schema, epitomized the valued sign of cultural progress and change, not the chaotic acceptance of circumstance.

Albers's stance on restraint and aesthetic intention found company in Theodor Adorno's work. Adorno likewise understood the dialectical relation of control to expression as a defining element of experimentation: "The need to take risks is actualized in the idea of the experimental, which—in opposition to the image of the artist's unconscious organic labor—simultaneously transfers from science to art the conscious control over materials." Order, control, and design, or what Adorno together termed "construction," pose the greatest and most sustained challenge to the culture industry's processes of recuperating artistic practices as novelty or entertainment. Art, activated with more objective processes of control and design, is thus able to posit outcomes that could never be possible in methods of fun and play, which, though they seem to result in the unexpected, are after all the predictable features of entertainment. "The concept of construction . . . always implied the primacy of constructive methods over subjective imagination. Construction necessitates solutions that the imaging ear or eye does not immediately encompass or know in full detail."¹⁰⁵

Improvisation for its own sake, for Adorno as for Albers, was generally rebellious posturing or, worse, merely the appearance of spontaneity. As Adorno notes, most musical improvisation, for instance, is actually rehearsed or habit-driven: "Improvisations conform largely to norms and recur constantly."¹⁰⁶ When control is forfeited, process (or means) is separated from socially effective or intelligible ends. Experimentation, when it partakes in a practice of construction and design, results in "efforts filtered through critical consciousness in opposition to the continuation of unreflected aes-



29 Albers, *Study for a Variant (III), C*, 1947, pencil and oil on paper, $9\frac{3}{4} \times 11\frac{7}{8}$ in. (24.6 × 30.2 cm). Brooke Alexander, New York (artwork © The Josef and Anni Albers Foundation / Artists Rights Society, New York)



30 Albers, *Homage to the Square*, 1958, oil on Masonite, 18 × 18 in. (45.7 × 45.7 cm). Judd Foundation (artwork © The Josef and Anni Albers Foundation / Artists Rights Society, New York; photograph provided by the Judd Foundation)

thetic practices.” When artistic experiment refuses control and reflection, when it stresses chancy “contents that are not foreseeable in the process of production” and that are arrived at by subjective criteria, what issues is not greater contingency (the unforeseen as an effect) but more likely a “subject [that] ratifies its self-abdication.”¹⁰⁷

The clear evidence of the artist’s control in a process of creation constituted, to Albers and to Adorno, a profound ethics of truth and integrity. For Albers, “truth” was a reflexive test of the individual’s intention for the resulting articulation of that intent. “Integrity” arose from a vision developed through observation:

I have very carefully watched not to be a bandwagon guy. That’s my greatest warning to all my students, “Please keep away from the bandwagon, from what is fashion and seems now successful or profitable. Stick to your own bones, speak with your own voice, and sit on your own behind.” That’s—and how can we say that in ethical terms? Or in moral terms? [*To be honest, and modest, are the greatest virtues of an artist.*]¹⁰⁸

The Politics of Experimentation

Albers was renowned for his teaching strategies and, of course, for his long and prolific artistic production. Yet his contribution in highlighting how traditional pedagogy maintained the status quo, though frequently sidelined, was equally important.¹⁰⁹ The honesty and modesty of his ethics related to a project of community education that has been rarely matched since. In a speech from the early 1940s, he declared, “Education is the most decisive factor in people’s lives.”¹¹⁰ He saw education as an often underestimated but determining factor in social reproduction, and, in his view, the influence of traditional education tended to limit creative

potential with rote exercises that in turn produced rote individuals.

Albers was aware of the limitations of tradition as generally defined in educational processes. Entering the Bauhaus in 1920 as an undergraduate in his early thirties, he had previously taught primary school and later art, coming into contact with the flourishing reform education movement in Germany.¹¹¹ Albers followed Dewey (whose *Democracy and Education* appeared in German translation soon after its publication in 1916 and, in an interesting transatlantic cross-pollination, its call for “learning by doing” rallied progressive educators throughout Europe) in describing traditional education as an operation of both selective cultural transmission and social control. For Dewey, in transmitting the “legacy” of the past, blind adherence to tradition obscured the reality that “a great deal [of that] which passed for knowledge was merely the accumulated opinions of the past, much of it absurd and its correct portions not understood when accepted on authority.”¹¹² In a scathing critique of traditional hierarchies in education, Albers, drawing on Dewey, complained that the professor “passes on so-called ‘established’ facts: knowledge, methods, rules, to enable historical thinking. . . . The old school seeks, in addition to its main goal of popular education, to pass on abilities but only a few essential ones.”¹¹³

During his early years at the Bauhaus, Albers attempted to repeal traditional models of art education by devaluing the role of tradition itself. At times, this represented a wholesale abandonment of the concept of history as a reference point for artistic production. With typically modernist zeal, he commented that “today’s youth notes the wrong direction: that . . . historical knowledge hinders production. . . . A lot of

history leaves little room for work. The reverse—little history and much work—is our task.” Prior hierarchies of knowledge could be sidestepped by substituting testing operations for the historical or scholarly study for art: “Experimenting takes priority over studying.”¹¹⁴

In these Bauhaus-era writings, Albers conflated tradition with retrograde, authoritarian models of education. After moving to the United States, his vituperative language softened and was supplanted by a voice more attuned to the merits of alternative traditions. He came to view tradition and history as residual formations that, though demanding vigilant testing, also must be frequently resuscitated and never dispensed with entirely. The urgency of thinking *historically in the present* prevented the debasement of real struggles and gains in the past. Like Albers, Walter Benjamin argued that a faithful articulation of history must always contest the adulterations of contemporary novelty-based capitalist culture. He believed it was necessary to

retain that image of the past which unexpectedly appears to man singled out by history at a moment of danger. The danger affects both the content of the tradition and its receivers. The same threat hangs over both: that of becoming a tool of the ruling class. In every era the attempt must be made anew to wrest tradition away from a conformism that is about to overpower it.¹¹⁵

For Benjamin, revitalizing perceptions of traditions under threat of ever-encroaching revisionism could awaken alternatives overwritten by the dominant culture. Rather than annulling previous models, Albers, like Benjamin, lobbied instead for their augmentation with experimental techniques. Since, for Albers, tradition and experiment were dialectically related, “there is no art which is only traditional or only experimental.” The skewed preference in education toward tradition had turned it into an end, yet tradition and experiment “are only a means, namely towards art, or if you prefer, towards culture.”¹¹⁶ With all the attention given to the artifacts of the past, the *process* of creation had become neglected.

To Albers “change” was a privileged term, but only because most art pedagogy neglected it entirely or blindly encouraged it completely. Teaching approaches that instead concentrated on design and experimentation enhance the understanding of the now, of modernity; too often art practice was initiated from a position of art historical survey. Albers saw this reliance on history as promoting an attitude of retrospection that treated precursors as hallowed and predetermining, stunting innovation and divorcing art from both present conditions and future possibilities.¹¹⁷ The work of art was not historical study; rather, “Its traditional task is to find again and again new visual expression of our mentality which changes from generation to generation.”¹¹⁸

Dewey believed that processes of experimentation such as those proposed by Albers, and performed at Black Mountain more generally, provided techniques that moved toward progressive pedagogy, and he publicly lauded their ambitions.¹¹⁹ For Dewey, education enhanced an individual’s ability to appreciate new self-crafted experiences rather than legacies rationalized as truth. Education thus becomes “an attack

upon so-called purely rational concepts on the ground that they either needed to be ballasted by the results of concrete experiences, or else were mere expressions of prejudice and institutionalized class interest.”¹²⁰ This reproduction of circumscribed possibilities has been termed the “selective tradition” by Raymond Williams: “The way in which from a whole possible arena of past and present, certain meanings and practices are chosen for emphasis, certain other meanings and practices are neglected and excluded.”¹²¹ The process of refining the objects of historical interest and cultural transmission to a rehearsed and often static canon or tradition regulates and diminishes the capacity for social and cultural change.

For sociologist Pierre Bourdieu, however, Dewey’s stress on individual experiences and their curtailment by “mere” prejudice or institutional interest gave too much importance to the role of the individual subject. To Bourdieu, education functions as a central node in the transmission of dominant cultural values *in the name of* individual experience or success; educational institutions are possibly the most rearguard elements in the self-legitimizing processes of social reproduction. According to Bourdieu, the central “contribution made by the educational system to the reproduction of the structure of power relationships and symbolic relations between classes, [is] by contributing to the reproduction of the structure of the distribution of cultural capital among these classes.” Specifically, this system operates by enforcing hierarchies of preexisting knowledge based on cultural “inheritance”—the almost unconscious fluency of those reared in dominant class backgrounds with the dominant class culture that is privileged in traditional education. “By doing away with giving explicitly to everyone, the educational system demands of everyone alike that they have what it does not give.”¹²² Educational structures implement dominant cultural mores in subtle (and not so subtle) hierarchical methods such as testing, tracking, and early specialization (generally legitimated in ideologies such as equality of opportunity—as opposed to equality of outcomes—and the justification of meritocratic selection).¹²³ This makes education a political battleground, disenfranchising alternative viewpoints that challenge the class power of the privileged.

In order to avoid types of social reproduction that favor dominant cultural values (and here Bourdieu helps us see “traditional” as often no more than “dominant-cultural”), alternative pedagogical practices mount a two-pronged attack: downplaying preexisting knowledge bases (high culture masquerading as tradition) and dedifferentiating specialized sectors (between disciplines or between expert and layman, for example).¹²⁴ The task of experimentation in pedagogy is doubly difficult: managing to revoke certain historical processes that have contributed to the reproduction of existing structures of society while transmitting conceptions of history that can be marshaled toward a more forceful remediation of present problems. Dewey, too, recognized this seeming paradox of education: “We have the problem of ascertaining how acquaintance with the past may be translated into a potent instrumentality for dealing effectively with the future. We may reject knowledge of the past as the *end* of education and thereby only emphasize its importance as a *means*.”¹²⁵

The means Albers envisioned were of the creative possibil-

ities of individuals unleashed by their trained perception of the complex and ever-changing world. Disciplined work freed subjects from unrecognized habits of behavior that inhibited their autonomy and will. In a speech Albers gave in 1940 peppered with references to the ongoing war against fascism in Europe, he asserted, "Freedom, if understood as being free from something, has no positive sense at all. Only being free *for* something has [an] active and productive meaning."¹²⁶ Though predating Isaiah Berlin's influential 1958 essay "Two Concepts of Liberty," Albers's weighing of "freedom for" above "freedom from" directly opposes Berlin's conservative critique of "positive freedom" ("freedom for") as the corrupting tendency of self-determining and collectively controlled social processes to lapse into authoritarian structures. Albers saw "freedom for" exploration and experimentation as antithetical to the "negative freedom" of "someone who is the passive recipient of specific rights," as political theorist Chantal Mouffe has also pointed out.¹²⁷ The role of the test in developing self-mastery and expressing positive freedoms demonstrated how knowledge of form could release individuals from habit. What Albers supplied, therefore, was a "training in [the] ability to *choose*."¹²⁸ To return to his 1944 print *Fenced* (Fig. 9), readings of the possible dimensional orientations of the work can be substantiated only by close consideration. Each path of inspection leads to manifold possibilities—forms project, recede, overlap, torque, and flatten. The image allows for various choices about how it is received and shrugs off a definitive reading. Albers offered a forum in which to both teach and perform observation of forms that brought emancipation from simplistic visual assumptions. To be able to see as many complicated structures in the world, and to see them particularly in conditions of deceptive simplicity, was a form of liberated vision. This "freedom is competence"—a seemingly paradoxical condition in which lack of restriction is earned in the restraint of discipline.¹²⁹

Empowering individuals with attentive perception laid the foundation for an educated citizenry challenging regressive, outdated customs and sowing greater freedom in the world, or so Dewey and Albers hoped. While affording a means toward keen observation, any *specific* program with which to marshal such knowledge or achieve concrete change remained ambiguous. It might involve a more equitable distribution of resources, greater social or economic equality, or collective self-determination; Albers's calls for freedom and reform did not detail the particular social ends of alert perceptual strategies, other than broadly stated "betterment" or "improvement." For him, providing tools for the conscientious rearticulation of form sufficed; the outcomes of such explorations were not elaborated. This was perhaps a liberating proposition for students. The ethical dimension—the language of realization, responsibility, and improvement—was stressed above an active political program or explicit goals.

Given the tenuous position the Alberses found themselves in as exiles—without citizenship, they were always vulnerable to residency restrictions and possible deportation—Josef's caution with respect to the political effects of his methods is somewhat understandable. Whether an educational program can coexist with a political program was always a contentious

issue in insular environments such as the Bauhaus and Black Mountain. The politicization of the Bauhaus program by Marxist Hannes Meyer (successor to Gropius as director of the Bauhaus in 1928) was tendentious and short-lived, as conflicts between radicalized students and local government sponsors quickly developed. Likewise, Black Mountain was always fraught with the question of whether it was a community, with attendant political responsibilities, or an educational institution (which is not to say that the latter does not have its politics—that is, concerns about representation, fairness, and justice).

Albers consciously defined his role as that of an educator *within* institutions and avoided explicitly politicized or revolutionary rhetoric. Instead, he trained students in the basic understanding of how the world looks and the high stakes in re-presenting it differently. He railed against previous models of education, but in his own project he used a language of careful change, reform, and improvement. As a teacher he *belonged* to institutions, with their attendant concerns of sustaining state or private funding; he was not anti-institutional, though he lambasted the inattentive habits reproduced in institutions and in culture. Albers provided tools for educating artists and did not dictate the topics or approaches they might take when their formal education ended. Whether his avoidance of direct sociopolitical applications of his method demonstrated merely an émigré's conformism would be difficult to say. Indeed, the central argument of his method did not concern outcomes so much as sharpening perceptions that different practices could wield in various projects. In his art and pedagogy, the study of abstract elements of form was paramount, though Albers remained open to many different kinds of practice. Much to his credit, he was personally responsible for inviting diverse (and divergent) practitioners to join him as faculty at Black Mountain, including Neo-Plasticist Bolotowsky, realists Jean Charlot and Jacob and Gwendolyn Lawrence, Expressionists Willem and Elaine de Kooning and Robert Motherwell, as well as future luminaries in other fields, such as composer John Cage, architect Buckminster Fuller, and poet Charles Olson, nurturing a community of practices that privileged no one teaching or artistic methodology.

"Art is visual documentation of human mentality through (visual) form," Albers claimed.¹³⁰ He looked not for "solutions," political or otherwise, but instead posed questions about the nature and understanding of form. His technique of testing subtle distinctions in vision used basic forms as containers for variation, though this work of comparison was sometimes deemed *too* subtle and restrained. Greenberg in particular singled out Albers as a "sensuous, even original colorist," while bestowing the faint commendation that his "strictly rectilinear art . . . adheres to the dogma of the straight line."¹³¹ This was not the first time Albers's artistic method had been characterized as rigid and repetitive—or, for that matter, his teaching dismissed as doctrinaire. The testimony of his students always strikingly refuted such claims, however, for they recognized that as a pedagogue he trained them not to produce work that looked like his own but, with the help of his methodology of experiment, to represent the world liberated of sterile habit. Years after his

studies at Black Mountain, Robert Rauschenberg praised Albers's method:

I'm still learning what he taught me, because what he taught had to do with the entire visual world. He didn't teach you how to "do art." The focus was always on your personal sense of looking. When he taught water color, for example, he taught the specific properties of water color—not how to make a good water-color picture. When he taught drawing, he taught the efficient functioning of line. Color was about the flexibilities and the complex relationships that colors have with one another. I consider Albers the most important teacher I've ever had, and I'm sure he considered me one of his poorest students.¹³²

When asked about Rauschenberg's comments in an interview, Albers responded:

We were not on great admiring terms. With each other. Rauschenberg. He was a little stubborn and doing his own [thing]—but what he is doing now is much more a part of my classes he participated in than he will ever recognize. We have done quite a bit with, at Black Mountain—we have had the tendency—dada was in the air, to do dada, you see? Surface correspondences, you know? Dada—not as Itten did it, as just emphasizing that as different from that, you see? No, we played a lot with combination of materials, "combination" was a great word in our [vocabulary]—and changing surface qualities, . . . changing of articulation, that was a very exciting study at Black Mountain. And I think that is what lives on in his work now.¹³³

That an artist changes the articulation of forms in the world and influences their perception; *that* was high praise coming from Albers.

For Albers, a determined process of experimentation produced results whereby contingency—the carefully tested permutations of a form's appearance that can continually be subjected to new variations—could be most clearly maintained. The understanding of contingency as "trial and error experimentation"¹³⁴ with the endless possibilities of methodically tested differences was both a pedagogical practice and a methodology guiding his own work. This type of experimentation—Albers's ethics of perception—served as an important impetus to perceptual and possibly cognitive change; indeed, he believed it "can lead to illusions, to new relationships, to different measurements, to other systems." His is perhaps the most concise description of the importance of explorations of form in transforming understandings of the world.

Albers insisted that "art is not an object but an experience"—an experience in and of perception that facilitates complex understandings of the visual world.¹³⁵ With his rational exploration of subtle mutations and variations of form, he attempted to construct new modes of visual perception. With his process of experiment, he endeavored to influence patterns of transmission—transmissions of tradition and of social pattern—by introducing the model of the test. It is interesting to note that Black Mountain also fostered the "next generation" of Americans concerned with experiment, notably, Cage and Rauschenberg, who sought to sever it from

its empirical, deterministic connotations.¹³⁶ As Cage argued in a 1955 essay, "The word 'experimental' is apt, providing it is understood not as descriptive of an act to be later judged in terms of success and failure, but simply as of an act the outcome of which is unknown."¹³⁷ Here we come full circle, with Cage embracing the indeterminacy that Albers wanted to excise. Whether Cage's invocation of experiment was similarly concerned with history and tradition is an interesting question, one that likely treads closer to experiment as the "new" and "innovative" than experiment as elaborated in careful variation.

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Notes

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1. Josef Albers (address, the First General Meeting of Black Mountain College [hereafter BMC], September 22, 1941), 5, The Josef and Anni Albers Foundation, Bethany, Conn. The full statement is "Experimentation means learning by experience, the most lasting way of learning."
2. This phrase is a frequent refrain in the Albers literature. Albers quotes himself saying this in Martin Duberman's interview with Josef and Anni Albers on November 11, 1967, 13. Typescript, Black Mountain College Records, North Carolina State Archives, Raleigh, N.C. (hereafter NC State Archives).
3. For a discussion of the centrality of vision in Bauhaus theory, see Hal Foster, "The Bauhaus Idea in America," in *Albers and Moholy-Nagy: From the Bauhaus to the New World*, ed. Achim Borchardt-Hume (London: Tate, 2006).
4. Albers stated it was necessary to see "action as the aim of education." Albers, "Tradition and Experiment in Contemporary Art," n.d., 10, Josef Albers Papers, Manuscripts and Archives, Yale University Library, New Haven (hereafter cited as Yale Papers).
5. Albers, *Search versus Re-Search* (Hartford, Conn.: Trinity College Press, 1969), 49.
6. *Ibid.*, 4.
7. Albers, "Truthfulness in Art," "Talk Given at Harvard Graduate School of Design about 37–38," noted in Albers's hand, 1, Yale Papers.
8. Albers, "September 11, 1948 BMC," MS, 6, Albers Foundation.
9. M. Norbert Wise, "Making Visible," *Isis* 97 (2006): 75–82.
10. Molly Nesbit, "Readymade Originals: The Duchamp Model," *October* 37 (Summer 1986): 59.

11. Howard Singerman, *Art Subjects: Making Artists in the American University* (Berkeley: University of California Press, 1999).
12. Albers, "Address for the Black Mountain College Meeting at New York," June 12, 1940, 3, Albers Foundation. At Black Mountain, in contrast, Albers considered art education "at the center of all activity" (Albers, interview by Duberman, 8). However, this was an issue of contention within the faculty (art training versus a liberal arts education), leading to a schism in 1948–49 and the eventual resignation of Anni and Josef Albers in 1949.
13. Albers, "Address for the Black Mountain College Meeting at New York," June 12, 1940, 3.
14. College founders John Andrew Rice and Theodore Dreier, quoted in Mary Emma Harris, *The Arts at Black Mountain College* (Cambridge, Mass.: MIT Press, 1987), 16. The departure of Anni and Josef Albers from the college was due in large part to disputes about the college's mission as it pertained to the importance of art education, although a complicated set of factors that can be reduced to the college's financial difficulties also contributed. The schism of 1948–49 that led to the Alberses' final break with the college was aggravated by a move on the part of certain faculty members to shift the focus of the college away from art instruction. Social sciences faculty member Bill T. Levi (then married to the college English professor M. C. Richards) angered Albers by declaring, in Albers's words, "Economics are more important than art" (interview with Duberman, 43). But, as Anni Albers pointed out, she and Josef left "because . . . of constant tension and the constant lack of privacy and constant lack of money and the constant friction with every faculty member in having the same voice that you had . . . that you didn't have enough stability to—the members who had built it up, that every new one could topple it over, like Mr. Levi's coming proved" (interview with Duberman, 47). The precariousness of the couple's financial situation was a decisive factor in the final break. Josef was sixty-two during the final crisis and he and Anni had more seniority than nearly any other faculty members, but they lacked guaranteed retirement funds at Black Mountain.
15. Albers, "Speech at Black Mountain College Luncheon at the Faculty Club," Cambridge, Mass., April 29, 1938, Albers Foundation.
16. *Ibid.*
17. Albers, "Tradition and Experiment in Contemporary Art," 2. This in no way implies that art is thoughtless or completely intuitive: "I believe that thinking is necessary in art as everywhere else and that a clear head is never in the way of genuine feelings." This is a form, one could argue, of John Dewey's "thinking in situations." Albers, typed note that begins, "The ratio of effort to effect," dated "ca '50," Yale Papers. Or, put another way, for Albers, "Life, not school, is the goal" ("Speech at Black Mountain College Luncheon," Cambridge, Mass., April 29, 1938), and "The best proofs are the results in later life" ("Concerning Art Instruction," 7).
18. Albers, address, first general meeting of BMC, September 22, 1941, 2.
19. Walter Gropius (lecture, Black Mountain College, August 28, 1944), Albers Foundation.
20. Albers, "Concerning Art Instruction," *Black Mountain College Bulletin* 2 (1934): 6.
21. Peter Galison, "Aufbau/Bauhaus: Logical Positivism and Architectural Modernism," *Critical Inquiry* 16, no. 4 (Summer 1990): 710.
22. Albers, "Concerning Art Instruction," 4. Albers often taught the courses simultaneously, but generally Basic Drawing preceded Color and Painting, and Basic Design was taught before his Structural Sculpture course; see the "Black Mountain College Tentative Program for 1949–50," Albers Foundation.
23. According to Albers, "Our drawing is the study of objective representation" ("Concerning Art Instruction," 5).
24. Albers, interview by Duberman, 22.
25. In a telegram response to a request by Alfred H. Barr Jr. (November 26, 1938, Yale Papers), Albers explained that "I use 3 terms structure facture texture to describe surface appearances of materials as follows: firstly structure concerns the inherent character of raw material[,] that is how it grew or was formed[,] like the grain of wood or fiber of thread or crystalline structure of marble . . . secondly we speak of facture if the appearance is dominated by the effect of working the material[,] for example hammered metal[,] twisted yarn or combed hair show the effect of treatment of the empression [sic] of tool used . . . thirdly we speak of texture if similar elements are combined in a constructive organ[,] these elements may show both structure and facture for instance woven braided or knitted material and masonry."
26. Albers gave the following as an example of altering surface appearance: "How can we make something [that] look[s] like bread . . . [from] stone" (Albers, interview by Duberman, 63).
27. Albers, "Concerning Art Instruction," 6.
28. Albers, "Truthfulness in Art," 7.
29. *Ibid.*, 8.
30. Albers, "Concerning Art Instruction," 6.
31. Albers, "Report on a Course in Basic Drawing, Design and Color Given at the Hochschule für Gestaltung in Ulm," U.S. Specialist Report submitted to the Office of the High Commission for Germany, January 20, 1954, 5–6, Yale Papers.
32. A brief prehistory of the break is necessary in order to understand its importance. The Bauhaus was founded in 1919 in Weimar, Germany, under Walter Gropius with his vision of "a universally great, enduring, spiritual-religious idea" of a *gesamtkunstwerk*, the "cathedral of the future." Beginning in 1922, however, Gropius began to shift the school's mission from its original articulation to a model of design production. The engineer was the preferred type, and work "led more and more to the production of single prototypes (which will serve as guides to the craftsman and industry)." Gropius criticized the "wild romanticism" of "individualized" expressionism, which many felt was a pointed attack on Itten. (Gropius, quoted in Eva Forgacs, *The Bauhaus Idea and Bauhaus Politics* [Budapest: Central European University Press, 1991], 36, 74–75.) Itten, feeling the threat, departed with several students, and in 1923 Albers and László Moholy-Nagy replaced Itten as instructors of the Preliminary Course. Albers taught part of the then one-semester-long Introductory Course from 1923 to 1925. In 1925 he taught the entire first semester of the two-semester Introductory Course, and Moholy-Nagy was responsible for the second semester. From 1928 to 1933, Albers taught both semesters alone.
33. Albers, comments from the press release of Sidney Janis Gallery's exhibition *New Work by Josef Albers—"Homage to the Square" and "Transformation of a Scheme"*, January 7–26, 1952, Yale Papers.
34. John Locke, "An Essay Concerning Human Understanding," in *The Empiricists* (New York: Anchor Press, 1974), 32–33.
35. Jonathan Crary, *Suspensions of Perception: Attention, Spectacle, and Modern Culture* (Cambridge, Mass.: MIT Press, 1999), 321, 317.
36. As James M. Curtis has argued, Victor Shklovsky's notion of habituation in art is most certainly indebted to Bergson. See Curtis, "Bergson and Russian Formalism," *Comparative Literature* 28, no. 2 (Spring 1976): 109–21.
37. Victor Shklovsky, "Art as Technique," in *Art in Theory 1900–2000: An Anthology of Changing Ideas*, ed. Charles Harrison and Paul Wood (Oxford: Blackwell, 2003), 279–80.
38. *Ibid.*, 280.
39. Albers, "Every perceivable thing has form," draft of a poem, n.d., 1, Yale Papers.
40. The possibility for change was the necessary precondition in Albers's understanding of design. If, as he posited, "Life is continuous change," then the potential exists for a better articulation. Albers, "Tradition and Experiment," 1.
41. As mentioned, for example, in notes by a student, Harry Seidler, on Albers's Color and Basic Design courses, summer 1946, Albers Foundation.
42. Albers, "Concerning Art Instruction."
43. Albers's language of form derives from the complex notion of *gestalt* in German: "In Gestalt psychology the value of a form element is understandable only in relationship to the whole. . . . From the name Gestalt derives the verb 'gestalten.'" Albers, "Every perceivable thing has form," 4.
44. *Ibid.*, 1.
45. Albers, "Concerning Art Instruction," 2.
46. Albers, "Address by Josef Albers Given at the Black Mountain College Meeting at the Museum of Modern Art," New York, January 9, 1940, 3, Albers Foundation.
47. Albers remarked (*ibid.*), "No educator has the right to demand from others what he is not able or willing to do himself . . . education is first self-education."
48. Albers, "Speech Given at the First General Meeting of Black Mountain College in the Beginning of the 7th College Year," September 12, 1939, 3, Albers Foundation. Albers, like Dewey, wanted to diminish arbitrary hierarchies but not to destroy them in an anarchical flourish. He was opposed to the "undecided laissez-faire of many so-called progressive schools." Josef Albers (address, BMC meeting at the home of Mr. and Mrs. Wiener, New York, n.d. [probably 1941]), 4, Albers Foundation.
49. Albers, "Address for the Black Mountain College Meeting at New York," June 12, 1940, 4.
50. Albers, interview with Duberman, 34.
51. *Ibid.*, 49.

52. Albers continues (*ibid.*, 57): "I have always said in my saying or teaching, 'Make the result of teaching a feeling of growing.' That is the greatest incentive to continue developing yourself. The feeling of growing. And today a little bit more than it was yesterday. And a little bit more than it was last year. You see? That you feel, I'm getting wider and deeper and fuller." The progressive educator John Dewey also considered growth a central concept: "The educative process can be identified with growth when that is understood in terms of the active participle, *growing*." Dewey, *Experience and Education* (New York: Touchstone Books, 1938; reprint, Simon and Schuster, 1997), 36.
53. Bolotowsky's course listing for painting, fall semester 1947–48, BMC, 1, NC State Archives.
54. Ilya Bolotowsky and Henry Geldzahler, "Adventures with Bolotowsky," *Archives of American Art Journal* 22, no. 1 (1982): 23–24.
55. Albers, "Truthfulness in Art," 1.
56. Bauhaus student Hannes Beckmann quoting Albers, in Frank Whitford, ed., *The Bauhaus: Masters & Students by Themselves* (Woodstock, N.Y.: Overlook Press, 1993), 224.
57. Albers, "Truthfulness in Art," 1.
58. Seidler, notes on Albers's Basic Design course, summer 1946, 24.
59. Beckmann, quoted in Rainer W. Wick, *Teaching at the Bauhaus* (Stuttgart: Hatje Cantz, 2000), 181.
60. Albers, "Concerning Art Instruction," 2, 3.
61. Albers, untitled list of work titles and descriptions, "Compiled for Leslie Cheek, Richmond, Va." (noted in Albers's hand), dated "ca. 50," 7, Yale Papers.
62. Albers, *Search versus Re-Search*, 20, 21.
63. Yve-Alain Bois, *Painting as Model* (Cambridge, Mass.: MIT Press, 1990), xxi, writing on P. N. Medvedev or M. M. Bakhtin's *The Formal Method in Literary Scholarship*, trans. Albert J. Wehrle (Baltimore: Johns Hopkins University Press, 1978).
64. Albers, *Search versus Re-Search*, 21. Earlier, Albers had proposed "presentative art" as opposed to "non-representational or abstract art," arguing that his art fostered "an immediate perception of all cognitive realities . . . meaning directly apprehending or apprehended by the mind." Albers, "Abstract—Presentational," in *American Abstract Artists* (New York: Ram Press, 1946), 2.
65. Albers, untitled list of work titles "Compiled for Leslie Cheek," 6; and *idem*, *Search versus Re-Search*, 21.
66. Albers, "Abstract Art" (lecture, Asheville, N.C., 1935), 4, Yale Papers.
67. Albers, *Interaction of Color* (1963; New Haven: Yale University Press, 1971), 74 (emphasis added).
68. Albers, interview with Duberman, 26. He continues, "So that form, whether we call it a line or a surface or a color, demands endless performances, endless. Using it again and again and again, so now I therefore make a thousand squares. You see? There is no end. I do not mean the square, I mean the color that is served in that dish—square."
69. Albers, "On My Work," poem, n.d. [probably 1940s], beginning, "When I paint and construct. . . ." Yale Papers.
70. Albers, *Interaction of Color*, 69.
71. *Ibid.*, 71.
72. Albers, "Statements," in *Albers at the Cincinnati Art Museum*, exh. cat., 1949, Yale Papers.
73. It is difficult to attribute exact dates to the Variants series. This *Variant* is reproduced from a 2003 PaceWildenstein catalog and is dated 1947–55, and for consistency's sake I have preserved the broad date range. Yet Albers was showing *Homage to the Square*, as well as working on his Structural Constellations series, by 1952. A better attribution for the Variants series is 1947–50.
74. Albers, "The Studio, the Laboratory, and the Vexations of Art," in *Picturing Science, Producing Art*, ed. Caroline A. Jones and Peter Galison (New York: Routledge, 1998), 409.
75. See Albers's discussion of gestalt in "Every perceivable thing has form," 4.
76. Reinhold Martin, in a parallel study of Albers's contemporary Georgy Kepes, has argued that positioning form as a process emphasizes the high stakes of organizing the visual field: Martin claims that Kepes, like Marshall McLuhan, believed that the "image is not the carrier of a message; it is the message." Martin, *The Organizational Complex: Architecture, Media and Corporate Space* (Cambridge, Mass.: MIT Press, 2003), 62.
77. Donald Judd, "Josef Albers" (1991), in *Josef Albers: Homage to Color* (New York: PaceWildenstein Gallery, 2003), 10.
78. Galison, "Aufbau/Bauhaus," 713.
79. Rudolph Carnap, annotations to Bertrand Russell's *Our Knowledge of the External World as Field for Scientific Method in Philosophy* (Chicago: Open Court, 1914), 97, quoted in Galison, "Aufbau/Bauhaus," 733.
80. According to Caroline Jones, "Purity, abstraction and the exclusion of unnecessary illusions" are the defining characteristics of Greenberg's formulation of modernism. Jones, *Eyesight Alone: Clement Greenberg's Modernism and the Bureaucratization of the Senses* (Chicago: University of Chicago Press, 2005), esp. chap. 4, focusing on Georgia O'Keeffe and Hans Hofmann.
81. Albers, "Art as Experience," *Progressive Education*, October 1935, unnumbered [first page].
82. *Ibid.*, second page.
83. Albers, "Address Given at the Black Mountain College Meeting at the Museum of Modern Art," 2.
84. Albers, "Speech at Black Mountain College Luncheon, Cosmopolitan Club, New York City," December 9, 1938, 6, 5, Albers Foundation.
85. Untitled MS, September 11, 1948, 4, Albers Foundation.
86. Albers, "The Educational Value of Manual Work and Handicraft in Relation to Architecture," in *New Architecture and City Planning*, ed. Paul Zucker (New York: Philosophical Society, n.d. [probably 1944]), 690.
87. Untitled fragment, beginning "To me (so far) art is to present," n.d., Yale Papers.
88. As Albers defined visual articulation (interview with Duberman, 19), "To direct eyes in observation—know what you are seeing and know why you are seeing it." In the schema of observation informing articulation, articulation is both directed and purposeful: "I see that art essentially is purpose and seeing." Albers, "On My Work."
89. Albers, "The Meaning of Art" (lecture, BMC, May 6, 1940), 1, NC State Archives.
90. Albers, address, first general meeting of BMC, September 22, 1941, 4–5.
91. Albers, "Art as Experience," second page. Again, he linked the organization of society through education to well-ordered art: "Education just as art means order and therefore is [an] opposition to chaos. So against mess and dirt as well as against confusion." Albers, untitled handwritten manuscript dated September 11, 1948, 6, Albers Foundation.
92. Albers, transcript of taped lecture, "At Yale; from Barry Cohen" (noted in Martin Duberman's hand), n.d. [probably late 1950s], 1, NC State Archives. Albers likewise criticized the fallacy of automatic drawing, in which an ostensibly unmediated relation of the hand to the unconscious could be developed.
93. See n. 39 above.
94. Albers, lecture "At Yale; from Barry Cohen," 5.
95. Albers, "Statements."
96. *Ibid.*
97. Albers, lecture "At Yale; from Barry Cohen," 3–6.
98. Albers, *Search versus Re-Search*, 20.
99. Albers, "Statements."
100. Untitled typewritten note dated January 1949, 2, Yale Papers.
101. Albers, "Statements."
102. Albers, quoted in Eugene Gromringer, *Josef Albers* (New York: George Wittenborn, 1990), 171.
103. Seidler, notes on Albers's Basic Design course, summer 1946, 5.
104. Albers, quoted in Wick, *Teaching at the Bauhaus*, 182.
105. Theodor Adorno, *Aesthetic Theory* (Minneapolis: University of Minnesota Press, 1997), 37.
106. Theodor Adorno, "Perennial Fashion—Jazz," in *Prisms* (Cambridge, Mass.: MIT Press, 1986), 123.
107. Adorno, *Aesthetic Theory*, 37, 37–38, 24.
108. Albers, interview with Duberman, 71 (emphasis added).
109. Though an excellent and superbly written compendium of information about Albers's teaching, the recent book by Frederick Horowitz and Brenda Danilowitz, *Josef Albers: To Open Eyes* (London: Phaidon, 2006) does not explore this central feature of his pedagogy.
110. Albers, address, BMC meeting at home of Mr. and Mrs. Wiener, 2.
111. The reform movement had a two-pronged agenda, although strictly speaking it was never cohesive. On the one hand, the attainment of universal primary school education and the extension of mass education to higher grades was crucial. Georg Kerschensteiner's cross-Atlantic dialogue with John Dewey and the notion of primary education as a work school was particularly important. On the other hand, the es-

- tablishment of the Deutscher Werkbund in 1907, an industrial design movement that attempted to accommodate the changes on handicraft wrought by the advent of industrial production, had immense influence. Walter Gropius was associated with the Werkbund in the mid-1910s (his mentor, Peter Behrens, was a founding member). The precursor to the Bauhaus, the School of Arts and Crafts in Weimar, was established by another Werkbund affiliate, Henry van de Velde. For more on the reform movement, see Marjorie Lamberti, *The Politics of Education: Teachers and School Reform in Weimar Germany* (New York: Berghahn Books, 2002). For a study of the Werkbund's influence on the Bauhaus, see Forgacs, *The Bauhaus Idea*.
112. John Dewey, *Democracy and Education: An Introduction to the Philosophy of Education* (New York: Free Press, 1916), 294.
 113. Albers, "Historical or Contemporary," quoted in Wick, *Teaching at the Bauhaus*, 173.
 114. *Ibid.*, 173, 174.
 115. Walter Benjamin, "Theses on the Philosophy of History" (1940), in *Illuminations* (New York: Schocken Books, 1968), 255.
 116. Albers, "Tradition and Experiment," 2.
 117. Though Albers counterposed the tendency of most education to concentrate on the past to progressive education's emphasis on change in the present for the sake of the future, he understood that any notion of a better future is dialectically informed by past experience and historical understanding: "In education, any sensible historical contemplation is related to the future" (Albers, address, first general meeting of BMC, September 22, 1941, 2). Yet he had earlier qualified this concept, stating that the goal was to produce a student "who knows that the present is only partly a result of the past" ("Speech at Black Mountain College Luncheon," Cambridge, Mass., April 29, 1938, 6).
 118. Albers, "Tradition and Experiment," 4. He continues, "Contemporary art, today as yesterday and ever before, confronts us with a continual struggle for articulation of our sensations and emotions; in other words, it demands visual demonstrations of our changing 'seeing' and 'feeling.'" In an interview with George Heard Hamilton in 1957, Albers explained that "an art exists because there is something which cannot be said in words." Albers, interview by Hamilton, "The Teaching of Art II, Training in Visual Experience," *Yale Reports*, no. 54 (January 20, 1957): 3, Yale Papers.
 119. Dewey, a member of BMC's advisory council, visited the college several times throughout the 1930s. After one of his visits, he wrote approvingly that the college was "a living example of democracy in action." Dewey to Theodore Dreier, July 18, 1940, NC State Archives.
 120. Dewey, *Democracy and Education*, 276.
 121. Raymond Williams, "Base and Superstructure in Marxist Cultural Theory," *Problems in Materialism and Culture* (London: Verso Press, 1974), 39.
 122. Pierre Bourdieu, "Cultural Reproduction as Social Reproduction," in *Power and Ideology in Education*, ed. Jerome Karabel and A. H. Halsey (New York: Oxford University Press, 1977), 487, 494.
 123. Bourdieu's theory of cultural transmission rarely addresses the conditions of progressive education, concentrating instead on structured inequalities that reinforce existing class positions, generally resulting from the uneven coverage and outcomes of mass public as opposed to exclusive private education. In fact, Bourdieu's notion of "the educational system" tends to elide education writ large with "dominant culture transmission."
 124. Albers supported weakening divisions between disciplines and between art and craft, although not eliminating them entirely. To him, the unity of purpose of all knowledge—observation in the interest of rearticulation—diminishes distinctions between fine and applied arts and between all fields of creative practice. It occurs in an educational environment in which art, that is, active doing, is central and an exchange between disciplines is encouraged: "A nearer connection, or better, an interpenetration, of all the art disciplines and artistic purposes in school life . . . show[s] that their problems are very much the same" ("Art as Experience," second page). The similar function of education in each discipline fuses their purposes—engendering close studies of form and creating artists who have "the task of selecting the forms and of showing them in their highest quality, their greatest intensity" ("A Note on the Arts in Education," *American Magazine of Art* 29, no. 4 [April 1936]: 233). Albers notes that though a general training in vision is for everyone, in any given cohort "only two or three of these [students] want to become practicing artists" ("Speech at Black Mountain College Luncheon," Cambridge, Mass., April 29, 1938, 3). He also declared, "My greatest pride is that my students are not Albers" (interview by Duberman, 66).
 125. Dewey, *Experience and Education*, 23.
 126. Albers, "Address for the Black Mountain College Meeting at New York," June 12, 1940, 1.
 127. Chantal Mouffe, *The Return of the Political* (London: Verso Press, 1993), 69.
 128. Albers, MS, dated September 11, 1948, BMC, 5, Albers Foundation.
 129. *Ibid.*
 130. Albers, "Every perceivable thing has form," 1.
 131. Clement Greenberg, "Review of Exhibitions of Adolph Gottlieb, Jackson Pollock, and Josef Albers" (1949), in *Clement Greenberg: The Collected Essays and Criticism*, vol. 2, ed. John O'Brian (Chicago: University of Chicago Press, 1986), 286.
 132. Robert Rauschenberg, quoted in Calvin Tomkins, *The Bride and the Bachelors: Five Masters of the Avant-Garde* (New York: Viking Press, 1965), 199.
 133. Albers, interview by Duberman, 62–63. In the same interview, Anni continues (p. 63): "We were at a party . . . and Rauschenberg was there and he came to me when we were leaving and maybe he had several drinks or something, but anyway he came and said, 'Tell Albers that I love him and I still think he's the greatest teacher.' And I said, 'You know it doesn't help if a wife tells him, write him a note,' but he never did."
 134. Albers, *Interaction of Color*, 70.
 135. Albers, "Seeing Art," poem, n.d., Yale Papers.
 136. Please see Eva Díaz, "Experiment, Expression, and the Paradox of Black Mountain College," in *Starting at Zero: Black Mountain College 1933–1957*, ed. Caroline Collier and Michael Harrison, exh. cat. (Bristol, U.K.: Arnolfini Gallery; Cambridge: Kettle's Yard Gallery, 2005).
 137. John Cage, "Experimental Music: Doctrine," in *Silence* (Hanover, N.H.: Wesleyan University Press, 1961), 13.