The most contentious theoretical debates in criticism about art after 1945 concerned the interpretation of geometric, planar, and constructed abstraction and its relation to the concepts and objectives attributed to modernism and postmodernism. Until the 1980s, however, artists seldom used either term to describe their projects because both terms are limited to homogeneous sets of values and periodizing frames inadequate to individual artistic concerns.

Immediately following the war, many geometric abstractionists adopted the term “concrete.” Reacting to the institutionalization of social realism in communist Russia where abstraction was attacked as capitalist, in fascist Germany where it was charged as decadent and bolshevik, and in the capitalist United States where it was assaulted as communist, groups of artists consolidated their efforts. They formed international organizations emphasizing the concrete plastic elements of their media. In 1929, for example, Uruguayan painter Joaquin Torres-Garcia founded the group Cercle et Carre in Paris and brought out the publication Cercle et Carre (1930). A year later, this group joined with the larger Abstraction-Création to publish Abstraction-Création, Art non-figuratif (1931–36). Among those belonging to the group were Antoine Pevsner, Sophie Taeuber-Arp, Max Bill, Lucio Fontana, Josef Albers, Hans Arp, and Wassily Kandinsky.¹ Arp and Kandinsky used the term “concrete” to describe their aims, adopting the term from Theo van Doesburg, who introduced it in 1930: “We are inaugurating the period of pure painting, by constructing the spirit form: the period of concretization of the creative spirit. Concrete painting, not abstract, because nothing is more concrete . . . than a line, a colour, or a surface.”² The term “concrete” emphasized the physical coextension of artistic objects, processes, and media with the actual world. By shifting linguistic denotation, the connotative aspects of their practice might be differentiated from
the illusionism implicit in the terms “abstract” (metaphorical representations of nature) and “nonobjective” (images of mental concepts).

Immediately following World War II, references to concrete art resurfaced in discussions regarding geometric abstraction in Paris. In 1945, the Galerie René Drouin held a series of exhibitions that opened with _Art Concret_. The following year, Auguste Herbin, Albert Gleizes, Jean Gorin, and others launched the first annual exhibition, the _Salon des Réalités Nouvelles_. These shows were devoted to “abstract/concrete/constructivist/non-figurative art.” In 1948, Galerie Denise René exhibited abstract art in “the constructive line,” a show that brought together Josef Albers, Jean Gorin, Auguste Herbin, Camille Graeser, Karl Gerstner, Richard Mortensen, Max Bill, Fritz Glarner, and Richard Paul Lohse, many of whom were involved in the burgeoning movement of concrete art in Switzerland.

Bill (Switzerland, b. 1908), a student at the Bauhaus from 1927 to 1929, became a principal theorist of concrete art and concrete poetry and published _abstrakt-konkret_ in the 1940s.3 In 1950, he founded and directed the Hochschule für Gestaltung in Ulm, an advanced technical school synthesizing art and science and specializing in research and training for design in architecture, town planning, and visual communication. Bill employed such faculty as Friedrich Vordemberge-Gildewart, an artist who had associated with De Stijl, belonged to Cercle et Carre, and was a founding member of Abstraction-Création. German aestheteic and concrete poet Max Bense taught “information aesthetics.” The Hochschule pioneered instruction in cybernetics and communication theory. Bill was trained in art, architecture, science, and technology, and he was an educator and politician as well. His theories of perpetual motion and his attention to mathematics as a structure for visualizing the inexplicable dimensionality of space anticipated kinetic, optical, minimal, and conceptual art as much as it reflected cubism, suprematism, and futurism.

Committed to an engaged social aesthetic, Richard Paul Lohse (Switzerland, 1902–88) reasoned that art must be the “sublimated and critical echo to the structures of civilization.”4 He was trained as a graphic designer and painter and between 1942 and 1944 Lohse made his first modular and serial order works. These paintings treated the picture field as a structure of interrelated color modules, connections, parallels, row symmetry and asymmetry, color verticality, and congruence of visual action. His serial systems anticipated many of the formal issues identified with minimalism and process in the 1960s. In 1937, Lohse cofounded Allianz, Association of Modern Swiss Artists in Zurich. Although contributing to the publication _abstrakt-konkret_ from 1944 to 1958, Lohse did not adopt the term “concrete” but rather described his work as “systematic, methodical or rational art.” He edited and designed the architectural magazine _Bauen und Wohnen_ (Building and Living) in Zurich from 1947 to 1955. Together with Josef Müller-Brockmann, Hans Neuburg, and Carlo Vivarelli, he also edited _Neue Grafik_ (New Graphic Design)
in Zurich between 1958 and 1965. On his eighty-fifth birthday, Lohse was awarded the Commander of the Order of Arts and Letters of the French Republic by the French minister of culture, Jack Lang.

In Italy, the divergent stylistic developments in constructivist, concrete, and geometric abstraction centered around the theory and practice of Lucio Fontana, who also had belonged to Abstraction-Création. Among many manifestos, he published “Manifesto spazialismo” in 1948 in Milan, the very year painter Gilles Dorfles formed MAC, Movimento per l’Arte Concreta (Concrete Art Movement), with Bruno Munari, Mario Soldati, and Mario Nigro, also in Milan. These artists’ investigations into monochromatic painting, kinetic sculpture, and light environments were taken up by Giuseppe Capogrossi, Enrico Castellani, and Piero Manzoni.

Manzoni’s (Italy, 1933–63) concern with the concrete reality of art led him to create Achromes (1957–59)—white canvases to which he applied various common materials (cotton balls, cloth, etc.), which he over-painted uniformly in white. In 1959 with Castellani, Manzoni founded Galerie Azimuth in Milan and edited Azimuth (1959–60), an art journal that introduced to Italy European and American avant-garde artists like the Nouveaux Réalistes, ZERO (with whom Manzoni and Castellani collaborated), Rauschenberg, and Johns. Eventually, Manzoni abandoned painting for a more conceptual and performative direction. Exposing the economic basis of aesthetics, he offered ninety canned tins of his excrement, Merde d’artiste, in 1961. These he sold for the daily market price of gold. Like Andy Warhol in New York and Yves Klein in Paris, Manzoni satirized the cult of artistic personality that propelled the art market, parodied overdetermined cultural notions regarding creative genius, and highlighted the paradoxical separation of value as a mental construct from value as an economic principle of classed objects.5

Yves Klein (France, 1928–62) began making monochrome paintings in the 1950s. In his International Klein Blue (IKB) monochromes, he attempted to imply infinite space and the immateriality of the void. Proceeding logically, he then presented an exhibition entitled The Specialization of Sensibility from the State of Prime Matter to the State of Stabilized Pictorial Sensibility, also known as The Void, at the Paris Galerie Iris Clert on 28 April 1958. For this exhibition, he emptied the space and whitewashed the walls in order to psychically impregnate the space with his aura. Increasingly conceptualizing painting, Klein created Ritual for the Relinquishment of the Immaterial Pictorial Sensitivity Zone (1957–59). In this painting for the mind, he enumerated steps for the identification of the cognitive aspect of perception that shapes visual experience and imagination.

Charles Biederman (United States, b. 1906) had an abiding interest in the aesthetic and political implications Piet Mondrian raised in his investigation of the plastic structures of art. A member of American Abstract Artists (AAA), Biederman introduced the terms “concretionism” and “structurism” to describe his work in
the 1940s. His influential book *Art as the Evolution of Visual Knowledge* (1948) had its widest influence, however, outside the United States. Eli Bornstein, a Canadian painter, founded *The Structurist* (Saskatoon) in 1960, and in its first issue published Biederman’s essay “The Real and the Mystic in Art and Science,” a study of the relation between science and Mondrian’s theories of art. Bornstein also published European abstractionists like Jean Gorin, intellectuals like art historian Erwin Panofsky and Abraham H. Maslow, then head of the Department of Psychology at Brandeis University, and novelist, essayist, and playwright Arthur Koestler. Biederman’s ideas also had an impact in the Netherlands, where Dutch painter Joost Balijeu published *Structure* (Amsterdam) from 1958 to 1964. Interested in the parallel between art, stucturalist linguistics, and philosophy, Biederman’s structurist theories attracted artists like Jan S. Schoonhoven, Herman de Vries, Carel Visser, Pieter Struycken, and Ad(rian) Dekkers.

Mondrian was the principal aesthetic inspiration for Dekkers (The Netherlands, 1938–74), too. Like Mondrian and Biederman, Dekkers joined problems of system, intuition, and structure to nature, or what he called “the laws that control the world.” Dekkers displayed his study of the harmonious balance and counterbalance of form in monochromatic (often white) sculptures, reliefs, and paintings. In such extremely reductivist geometric abstraction, he moved toward the tabula rasa, the zero point, that many artists reached in the 1950s. He was also associated with Group Nul and its publication *o = Nul* (1961–64), edited by de Vries, Schoonhoven, Henk Peeters, and others. Their exploration of the concrete surface and structural issues raised by geometric and monochrome paintings and panels drew them increasingly to questions of light, movement, spectacle, and the interaction of art with the environment, concerns that coincided with those of Manzoni, Klein, and the German ZERO group.

In *Le degré zéro de l’écriture* (1953), Roland Barthes theorized that a zero point had been reached in writing after World War II: “Now here is an example of a mode of writing whose function is no longer only communication or expression, but the imposition of something beyond language, which is both History and the stand we take in it.” Having achieved concrete forms sufficient unto themselves, these artists could only determine the meaning of their work in the interrelation between it, history, and experience.

The tension between the autonomous work of art and its contingency to historical circumstance was best reflected in Ad Reinhardt’s (United States, 1913–67) twin practice: his highly political and polemical writings and cartoons, published in such journals as *P.M., Critique, ArtNews, Art International,* and *Dissent,* and his monochromatic paintings dating from the early 1950s and culminating in the *Black Paintings* (1960–66). While New York school gestural abstraction and European
art informel synthesized cubism, expressionism, and surrealism in order to recuperate the psychological and existential content of early-twentieth-century avant-gardes, Reinhardt’s geometric abstraction arrived at a unified, highly saturated, color surface or “field painting.” Although Reinhardt insisted that his paintings represented “art as art and nothing but art,” his deep interest in Eastern metaphysics suggested otherwise. The following note by Richard Wilhelm to Hexagram 22, “Grace,” of the I Ching, provides a provocative source for Reinhardt’s theory: “The hexagram shows... tranquility of pure contemplation. When desire is silenced and the will comes to rest, the world-as-idea becomes manifest. In this aspect the world is beautiful and removed from the struggle for existence. This is the world of art.” The congruence between Reinhardt’s idea of “art as art and nothing but art” and the teachings of the I Ching has been overlooked but is worth more consideration.

Regardless of his diverse aesthetic and social aims, Reinhardt’s monochromed flat surfaces sometimes were described as “hard edge,” the term coined by West Coast critic Jules Langsner in 1959 to identify paintings and sculptures characterized by their geometric clarity, even surfaces, and simplicity of design. The term hard edge was also applied to the paintings and sculptures of Ellsworth Kelly (United States, b. 1923), whose shaped constructions and painted simple forms, bright primary colors, and smooth surfaces evolved while the artist lived in Paris (1948–54). Kelly’s careful study of the patterns and structure of light and shadow in nature resulted in constructions, tableau-reliefs, and monochrome paintings in the European geometric and concrete tradition.

Paradoxically, the soft edges of Helen Frankenthaler’s “stain paintings,” begun in 1952, also provided the impetus for the hard-edged painting of the 1960s. She synthesized Jackson Pollock’s pour technique, Hans Hofmann’s theory of the “push-pull” dynamics of color and form, and Clement Greenberg’s theories of modernism. Greenberg even argued that the “hardness” of “post-painterly abstraction” was derived from the “softness” of her gestural abstraction rather than from the geometric linearity of “Mondrian, the Bauhaus, Suprematism, or anything else that came before.” In 1954, Greenberg introduced Kenneth Noland (United States, b. 1924) to Frankenthaler. Noland had studied with Ilya Bolotowsky at Black Mountain College, where he learned of the Bauhaus and Mondrian, and where he met Greenberg. Together with Morris Louis, Noland advanced Frankenthaler’s poured-stain method. Both artists, along with such painters as Gene Davis, eventually were identified as the “Washington color school.”

Greenberg played an equally important role in the development and careers of sculptors Anne Truitt (United States, b. 1921) and Anthony Caro (Great Britain, b. 1924). Truitt, a Washington, D.C., artist, began to produce her monolithic, ver-