The idea of sculpture with no visible contact with the earth, hovering in space without the usual vertical and horizontal orientation, arose in contemporary art practice during the postwar decades, amid the Cold War race for space. In Milan, Paris, Düsseldorf and New York, an array of floating art projects were attempted both inside—and outside—the art gallery. These artistic experiments offered a counterpoint to the first satellites and manned spacecraft, using simple technologies including magnets and balloons to address complex aesthetic issues raised by the outer-space environment and, in particular, the zerogravity field. By the late 1960s, free-floating “aerial” and “pneumatic” art had become an international trend, reflecting a new conception of art’s meaning during a time of cultural and technological change.

Between the first U.S. Navy V-2 rocket test flights in 1946 and the Apollo 11 moon landing in 1969, a succession of Western European and American artists undertook a spatial quest of their own, seeking to make sculpture that floated freely in space. Early twentieth-century precedents for these attempts included Alexandr Rodchenko’s Spatial Construction (ca. 1920), which featured concentric elliptical forms suspended from above by a filament, without a pedestal, lacking solidity and free of the weighty tradition of sculpture itself. Made at a time of social upheaval and cultural innovation, Rodchenko’s radical work rejected sculptural mass in favor of seeming lighter-than-air suspension and maximum interpenetration with space. Other artists of the 1920s and 1930s, notably Alexander Calder with his mobiles, and László Moholy-Nagy with his kinetic light projectors, also sought to liberate sculpture from its obdurate connection to the ground [1]. Such projects occurred alongside adventures in aviation and in theoretical physics that were reshaping the parameters of human experience and knowledge.

In the immediate postwar years, the Argentinian-Italian artist Lucio Fontana framed the idea of floating sculpture specifically in terms of the dawning space age, calling his endeavor Arte spaziale. He declared that “on the moon they will not be painting—but they will be making Spatial Art” [2]. This new kind of art, said Fontana, would take place “in space and through space” [3]. In 1949 he unveiled L’Ambiente spaziale di Lucio Fontana at the Galleria del Naviglio in Milan. Strange and astral, Fontana’s Spatial Environment (Fig. 1) was a darkened room, lit only with ultraviolet or “black” light, in which suspended papier-mâché forms glowed with fluorescent colors, appearing to float above the viewer’s head. The effect, as described by the critic Guido Ballo, was one of displacement and disorientation: “One

Fig. 1. Lucio Fontana, Spatial Environment, 1949. (© 2015 Artists Rights Society [ARS], New York/SIAE Rome. Photo: Fondazione Lucio Fontana.)
could not contemplate it from one point of view. Everything became unstable, allusive” [4].

Fontana argued that the coming space age would usher in a new set of aesthetics and proportions reflecting the new experience of space flight, in which a new dimension was added to mundane reality. In a set of notes with drawings from 1951 he diagrammed how both the earthbound sculpture and the earthbound viewer were limited through their contact with the earth. Sculptures in contact with the ground “lost” a potential spatial dimension; meanwhile the earthbound viewer experienced a “horizon line limit” beyond which he or she could not see. Fontana then illustrated the “Conquest of Space,” where both forms and human viewers floated freely in all-surrounding space. The hot-air balloon was, wrote Fontana, “the first spatial form that conquers space, that is contained in space in all its dimensions.”

Detachment from the earth allowed for the first time a truly “infinite spatial point of view,” leaving behind the terrestrial horizon line. To show this new awareness, Fontana depicted a human figure in space at the center of axes extending in all directions, labeled “infinite horizon lines” [5]. Fontana’s “fourth dimension,” a new experience of unbounded and unending spatiality, recalls Guillaume Apollinaire’s early-twentieth-century discussion of the “artistic fourth dimension,” defined as the “immensity of space eternalizing itself in all directions” [6].

For Fontana’s younger colleague and friend, the French artist Yves Klein, space likewise signified a release from a restricted, terrestrial orientation, in favor of what he termed “extradimensional sensibility.” Klein, like Fontana, saw spatial conquest in terms of an awakened, unfettered aesthetic awareness, arguing that “terrestrial attraction” needed to be superseded by “total physical and spiritual freedom.” In contrast to the oppressive force of gravity, Klein celebrated “levitation,” embracing what he called the “force of upward attraction toward space, toward nothing and everything at the same time” [7]. Known for his pure blue monochrome paintings of the late 1950s, Klein declared that he had himself “gone forth into monochrome space,” not in the conventional, bodily sense of futuristic space travel but rather in expanded sensibility: “I felt myself impregnating volumetrically, out of all proportions and dimensions, into the ALL” [8].

To publicize his dual 1957 Paris exhibitions of blue panels at Galerie Iris Clert and blue-coated objects at Galerie Colette Allendy, Klein released a great number of blue balloons (said to be 1,001) into the sky. He would later declare this “aeromagnetic sculpture” to be his “favorite work.” With it he achieved the solution to a problem that he said had preoccupied him: “to liberate sculpture from its base” [9]. Coming several months before Sputnik, Klein’s balloons offered an aesthetic foray into the atmosphere.

Klein became obsessed with the idea of a sculpture suspended in space as a new art form, pursuing it alongside his ongoing investigation of the “immaterial.” In 1958, as a complement to his exhibition at the Galerie Iris Clert known as Le Vide—an absolutely empty gallery, presented with great fanfare—Klein proposed to publicly “levitate” the Egyptian obelisk in the Place de la Concorde by obscuring its base in shadow while lighting in blue the obelisk itself, so that it would seem to hover in space [10]. Although permission to do this was ultimately denied, he continued to envision how he could cause sculpture to float free of its base.

In 1959, Klein proposed an “aeromagnetic sculpture” consisting of a blue sponge floating in space above its base. This idea was at once an improvement on his sponge sculptures of that year, which were held up by thin, stem-like rods, and a critique of his fellow artist Vassilakis Takis, whose “tele-sculptures” used magnets to hold metal forms suspended in air, attached to the ground only by filaments. Klein, wishing to bypass the conspicuous and understandable technique employed by Takis in favor of something more marvelous and less explicable, wrote that he had discovered the solution of pure imagination. The sculptures will float fifty centimeters or more above the base . . . without filaments or other tricks. It will be pure levitation. In this way the aeromagnetic sculpture will float in space, and one will be able to pass one’s hand between the base and the sculpture [11].

Klein’s idea, which he submitted to the French patent office, involved using helium to cause the sponge to float and a magnet concealed in the base (which would attract a hidden magnet in the sponge) to keep it from floating away, thereby achieving an equilibrium that seemingly defied gravity. The work was never executed.

Echoing Fontana’s definition of “spatial form” as being “contained in space in all its dimensions,” Klein imagined the sculptural object in a state of suspended gravity, surrounded by space on all sides, with no discernible contact with the earth.

On 2 July 1959, critic Claude Rivièrè published an article entitled “Vers la sculpture aérienne” in the daily Combat. Rivièrè’s ideas about “aerial sculpture” were largely a summary of Yves Klein’s theories, beginning with the notion that “Sculpture is still hindered by the burden of its base,” followed by a reference to the unrealized floating obelisk. Without mentioning Takis by name, Rivièrè described the problem of having a filament that the spectator could discover. Ideally, he suggested, invisible magnetic fields could be developed that would suspend objects in orbit-like states of motion, so that floating sculpture would be a real rather than illusory achievement: “The sculpture doesn’t suggest space. IT IS SPACE. We find ourselves before a ring of artificial satellites that dance in a steady, absolute space, baffling and yet implacable” [12].

Klein explored the issue of floating sculpture yet again in a photograph published in the catalogue of his 1961 retrospective exhibit at the Museum Haus Lange in Krefeld, Germany (Fig. 2). The image showed the artist sitting cross-legged before his sculpture Le globe bleu, a store-bought globe thickly coated in Klein’s signature blue pigment. In the photograph the globe is shown floating in the air above its stand, as if Klein were participating in an act of levitation. Captioned “The Liberation of the Sculpture from the Base,” the photograph of the floating “Blue Globe” appears on the page of...
the catalogue juxtaposed with a picture of the “Aerostatic Sculpture” of 1,001 balloons from 1957 and placed directly above the famous 1960 photograph of Klein’s “Leap into the Void,” likewise an artfully constructed trick photograph on the theme of levitation. In these images—one of the artist looking at Earth floating in space, one sending balloons into space and another flying into space himself—Klein was offering an alternative vision of the so-called conquest of space then being undertaken (when Yuri Gagarin became the first human in space later that year, Klein republished the “Blue Globe” image to illustrate that he had himself been the first to see Earth from space) [13].

Meanwhile, Klein’s Italian contemporary Piero Manzoni had, starting in the summer of 1960, worked on what he would later describe as the “first sculpture in space” [14]. His Scultura nello spazio was a small plastic ball held aloft by a strong air jet (he also experimented with using the airflow to support a large inflated balloon). A short film shows a blasé Manzoni sitting and smoking a cigarette while the ball rises and hovers, oscillating slightly, in the space in front of him. Here as elsewhere, Manzoni’s work seemed to parallel or echo Klein’s but without the apparent mysticism with which Klein imbued his art. Manzoni was also making a nod to his Milanese predecessor Fontana, whose conceptualization of space as extension in all directions had profoundly influenced him. Manzoni became fascinated with inflatable balloons, with their wildly variable dimensions, their ephemeral presence and the indeterminate relation between inner and outer spaces.

Closely aligned with Klein and Manzoni, the German group Zero, founded in the late 1950s by Otto Piene and Heinz Mack, was also directly inspired by Fontana, whom they called “something like a spiritual father” [15]. Piene and Mack, with the addition to the group of Günther Uecker in 1961, developed a distinctly “aerial” aesthetics, nowhere more evident than in a succession of Zero “Demonstrations” enacted in the streets of Düsseldorf in the early 1960s. The first such Demonstration, held on 5 July 1961, outside of the Galerie Schmela, featured the raising of a transparent plastic balloon filled with hot air, lit by searchlights (Fig. 3). The balloon was “accompanied by thousands of soap bubbles,” which a group of female volunteers “produced in huge quantity” [16].

The following year, in front of television cameras for a documentary being made about Zero, the scene was reenacted with a “thousand balloons . . . fired by powerful spotlights” rising into the night sky along with countless soap bubbles [17]. Reminiscent of Yves Klein’s release of balloons into the Paris sky, this event would later be described by Jack Burnham in his Beyond Modern Sculpture as a mix of publicity stunt and meaningful artistic experiment: “In part propaganda for the group, more importantly these balloons signaled the migration of material forms toward another area of activity” [18]. This “other area of activity” was, quite literally, the atmosphere; conceptually, it had to do with letting go of earthbound art forms. Balloons and bubbles floating into space were, in any number of ways, the antithesis of stone, metal and clay. Durable objects were replaced by fleeting spectacle.

For his part, Zero cofounder Piene had begun to create his Light Ballets—motorized, rotating screens through which changing patterns of light were projected onto the gallery walls, causing luminous tracings to circle the viewer on all sides. Piene envisioned art taking place in an “astronautic
attempts varying in resourcefulness have been made which go beyond the Constructivist ambition of the total liberation of sculpture from the base. Short of shooting sculpture into orbit . . . some sculptors have tried to free their forms of all contact with the Earth [23].

Floating sculpture signified an act of liberation, conceived as the leaving behind of an object-based approach to art. As Willoughby Sharp put it in a May 1968 article entitled “Air Art,” “Reality is events, not objects.” Sharp conceived “Air Art” as a timely expression of the desire to transcend boundaries and absolutes. As he explained it, “Static structures are anachronisms. They are irrelevant to today’s cultural and technological situation. . . . Objects perpetuate the fallacy of simple location” [24].

After citing as precedents Klein, Manzoni and the Zero group, Sharp called attention to a current exhibit held by the Utopie group in Paris, entitled Structures gonflables, which featured more than 100 “inflatable structures,” including a photograph of the monumental silver balloon communications satellite Echo I. Meanwhile, Sharp had organized his own exhibition, Air Art, which opened at the Philadelphia Arts Council and traveled to a number of other North American venues. Featuring ten artists along with the Architectural Association Group, the show included Haacke’s wind work and Warhol’s helium-filled silver pillows alongside newer works using unstable media such as bubbles and steam.

In the exhibition catalogue, William A. Leonard, director of the Cincinnati Contemporary Arts Center, framed Air Art as a direct response to humans going into space and the resulting sense of dislocation, as well as to an increased environmental awareness: “Because of the space program and the present concern for atmospheric conditions, some artists have turned to air as an aesthetic medium.” Where, he

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theater,” describing the goal of his art as “the shooting of the viewer into space” [19].

Writing three decades later, Nam June Paik recalled the effect that Piene’s Light Ballet had had upon him. Piene, he said, “did show a floating b/w light flakes, which were floating a weightless aesthetics!! [sic]” Paik reminds us that Piene’s lighter-than-air displays were “before the moonlanding or the famous pillow of Andy Warhol”—a reference to Warhol’s renowned 1966 exhibition of Silver Clouds, the floating Mylar pillows designed in collaboration with Bell Lab engineer Billy Klüver (Fig. 4). Paik found in Piene’s work a new approach to art, suited to a new era: “This weightless rotation somehow did hit me as a precursor of space-age aesthetics . . . non-gravitational existence, which will grip the world” [20]. Art that floated in the space of the gallery offered a preview of the condition of zero gravity to be found in outer space.

The German artist Hans Haacke, who was associated with Zero in the early 1960s in Düsseldorf, would himself make a number of “floating” works between 1965 and 1967, when he spoke of his admiration for Piene’s Light Ballets: “Some of his work gives you a feeling of weightlessness and phenomenal involvement which I admire greatly.” Haacke understood Zero as pushing technology “to the point where it blossoms into something very poetic, weightless, and irrational” [21].

In his 1966 exhibit Wind and Water Sculpture at the Howard Wise Gallery in New York, Haacke included a work consisting of a white balloon, three feet in diameter, held aloft by an air jet in a manner strongly reminiscent of Manzoni’s 1960 attempts. Haacke’s Floating Sphere was meant to provoke a phenomenological encounter between the spectator and the nonstable entity of the balloon, thereby activating the spectator’s awareness of space and time as nonstatic.

Warhol’s Silver Clouds were shown in New York a few months later. Warhol later explained the impetus and intention behind these floating works, which for him had to do with leaving behind the conventional art object and the usual activities of the artist:

Since I didn’t want to paint anymore . . . I thought the only way is to make a painting that floats. And I asked Billy Klüver to help me make a painting that floats . . . and the idea is to fill them with helium and let them out of your window and they’ll float away and that’s one less object [22].

The pillows were memorialized in a short experimental film by Robert Maas entitled Silver Flotations, which shows them drifting in an otherwise empty gallery, shot from a fluid, “floating” viewpoint and accompanied by a weird, space-age musical soundtrack. In 1968 Jack Burnham used the term “Air-Borne Sculpture” to describe the phenomenon of floating sculpture. “Within the past ten years,” he wrote,
asked, “is man within the continuing motion of the planets, the stars, the sun, the moon and the calm of outer space?” The works in the exhibit, he wrote, “take us directly into the atmospheric content and condition in which we live” [25]. They reflected upon the unstable position of humans in “space,” experiencing profound shifts in viewpoint, without a base or fixed standpoint. And, Leonard suggested, they addressed the “condition in which we live”—i.e. the cultural “atmosphere” in 1968 as well as the compromised state of the earth’s air.

Floating in space was a powerful image in 1968. Air Art opened just two weeks before the premiere of Stanley Kubrick’s 2001: A Space Odyssey, with its choreographed movements of satellites revolving in space with no up or down. In her 1969 discussion of 2001, Annette Michelson pointed to the “heightened pleasures and problems” of bodies in space, for whom “floating freedom” carried “problematic implications” [26]. Indeed, feelings of both exhilaration and disorientation could be said to reflect the dynamic state of Western culture in the spring of 1968. It was a situation where, as the critic had written about Fontana’s Spatial Environment, “one could not contemplate it from one point of view. Everything became unstable, allusive.” Ultimately, floating sculpture in the postwar decades represented, to borrow a notion from Umberto Eco, a whole new “mode of thinking, of seeing, and of feeling” prompted by the first forays into space but also by concurrent cultural changes on Earth; the consequences of both are still being realized today [27].

References and Notes

18 Jack Burnham, Beyond Modern Sculpture: The Effects of Science and Technology on the Sculpture of This Century (New York: George Braziller, 1968) p. 47.

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