

TONY SMITH:
"THE INELUCTABLE MODALITY
OF THE VISIBLE"¹

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Just as the discoveries of theoretical science are often preceded by practical application within a narrower context, Tony Smith had a complete working command of his formal principles before he turned them to broader, sculptural ends. Around 1960, he was in the unique position of having been, for years, wholly conversant with the newer mathematical ideas, with topology, tetrahedral construction, correspondences between natural and pure geometry, and of being equally familiar with the major accomplishments of advanced art. Since Smith had no *parti pris*, the first black structures were neither reflections of, nor reactions against prevailing styles, but responses to a largely extra-art situation of far longer personal standing. Although he has been, since the 1940's, a respected friend and colleague of Newman, Rothko, Pollock and others, and though he is now tenuously and progenitorally associated with the Primary Structure tendency, Smith has always been independent, as well as isolated residentially and professionally.

An architect by vocation until 1960, a painter and sculptor by avocation since childhood, Smith has taught architectural and engineering drawing and three-dimensional design since 1946. The idea of making his own sculpture based on the problems he gave his students first occurred in 1956, with *Throne*, a maquette made to illustrate a type of tetrahedral joint; other problems began with constructions from cigarette-pack modules, or tablets and pills, enlarged five times. No worshipper of technique, and knowledgeable enough not to get starry-eyed about the marriage of science and art, Smith remained free to invent and explore in new contexts the schemes that he had already contemplated and practiced for some 20 years.

In the mid-to-late-fifties, geometry in art meant the classic vocabulary of Cézanne, the Cubists, de Stijl and the Bauhaus; little "hard-edge" painting was, strictly speaking, geometrical. While a few artists were aware of a more sophisticated modern geometry, they were mainly minor figures, or else, like Reinhardt and Newman, uninterested in geometry *per se* except as a vehicle of extreme clarity. We are just beginning to understand that geometry need not be restricted to classical styles alone, and that system, simplicity, and clarity are not exclusively the property of impersonal, highly theoretical stances. Smith says he tends to be classically minded, and his Jesuit education prepared him well for that role. But like Poons, Flavin, Bladen, Ohlson, Humphrey, and, of course, Newman, Smith is what might be called a cool, empirical romantic, or an intuitive, archaizing classicist—an increasingly common mixture today. He treats didacticism, technique, and formalist advance with a nonchalance amounting to disdain, and when he sends a piece to be fabricated professionally, it is because he has "had it with all that building" after years in architecture, and cannot afford the time and energy to construct full-scale versions himself. This procedure has nothing to do with a hands-off Purist esthetic, and in fact, Smith's pieces never look factory-made, even when they are, because the welded steel is allowed to weather and darken until it approximates the light-absorbent black surface of the mock-ups, made by Smith and his assistants from plywood and covered, for practical reasons, with automobile body undercoating applied in unstudied impasto swatches.

"Craftsmanship and art are much closer than artists seem to be willing to admit, but," Smith asks, "Where does the distinction seem to take place?" In the sense of superficial finish, craft is minimal in his sculpture; in the sense of skill and ability to use structures that facilitate an esthetically compelling result, outside of ordinary experience, it is important. Smith's work is intentionally impure, not indecisive or corrupted, but possessed of a kind of rawness, lacking in brutality, that vitalizes the prospect of a more polished tradition. His broad range of skills allows Smith to transcend the fine-art/function boundaries less self-consciously than most of his younger colleagues; his technical sophistication allows him a controlled primitivism that would strike a false note in a less experienced hand.

A good deal, perhaps too much, of the strength of his best work depends on large size and on a certain awkwardness, an unfinished roughness that is appealing in forms of such magnitude and provides a counterpoint to the rigorously geometric scaffolding. Stability is essential. Bulk and self-containment (as well as a lurking malignancy) are emphasized by the matte black surfaces, whereas color—the prime agent of illusion—would confuse the mass-energy issues. Smith dislikes most kineticism and precariousness, the cantilever, any structure that calls attention to detail and the way a thing is made. Sculpture, in the classical sense, is, like architecture, necessarily stable (statue, as in *stasis* and *status quo*). Yet one of the most important qualities of Smith's art is the extraordinary *stretching* effect achieved. Many of the tetrahedral pieces (*Willy, Cigarette*) initially appear sprawling, their limbs extended colishly. Eventually, in these and in the more compact pieces (*The Snake is Out, Amayllis*), one becomes aware of a giant gathering of tensions, not entirely released in the outflung elements, which implies a potential loss of control—the phrase "he doesn't know his own strength" comes to mind.

Most of the recent work can not be visualized in its entirety from any single vantage point. It is frontal, but multiply frontal, planar, but volumetrically changeable. *Amayllis*, made of two identical prismatic forms, is rather benignly, even pathetically anthropomorphic from one angle, resembling one of Franz Marc's recumbent geometric deer. From another angle, it rears up in angry dignity, a complete transformation not only of form, but of content. Such an effect might be called "dynamical equilibrium", a phrase used by crystallographers (to describe the "balance of escape and capture" of atoms from liquid to gaseous states)² as well as by artists (originally Mondrian). The word dynamic need not connote the exaggerated illusion of movement; that branch of physics studies objects at rest as well as kinetics and kinematics. As Bertrand Russell has admonished: "Newspapers and certain writers who wish to be thought forceful are fond of the word 'dynamic'. There is nothing 'dynamic' in dynamics, which, on the contrary, finds everything deducible from a law of universal laziness."³

Solemnity and humor (not incidentally Joycean attributes) are typical both of Smith and of his sculpture. The unity-diversity dialectic, what he calls a "paced unfolding of form", amounts to a radical sleight of hand. Smith is just about to carry this aspect much further with inflated sculpture. He has found "psychoanalytical analogies in the sense of transformation of images" in topology, on which the new work will be based, and the inflated pieces will bear distinct resemblances to Surrealism. Though still multipartite and structurally similar to the present work, the components would be concave and convex, fluid, light and airy, sensuous, biomorphic, and even overtly erotic. He looks forward to working with "things, blobs, that would be psychological, subjective, dreamlike, existing in a space more like a dream space". Pneumatic techniques would allow him to escape construction problems and put "all the materials in tension"; he can mould, as he has wanted to for some time, joints that are oval, more like tendrils. He even considers getting into fluorescent color ("Since they are more like girls, I can conceive of clothing them").

Topology is in some ways a non-visual discipline, since it operates in spaces (4th, 5th and 6th dimensions) that are impossible to visualize, but it is not difficult to understand its appeal for contemporary artists. Smith likes the "mercurial aspect of modern mathematics" in general, and sees topology as "more primitive, basic, elemental than Euclidean geometry". It has been described as "its own goal" and "a state of mind" (as has Surrealism). "In one sense [topology] is the study of continuity: beginning with the continuity of space, or shapes, it generalizes, and then by analogy leads into other kinds of continuity—and space as we usually understand it is left far behind."⁴

The pneumatic objects are clearly organic in character; so, in a very different manner, are Smith's older works. His entire oeuvre contains this dual reference to nature and to the organic. The first reference is internal and structural, based on natural geometry; the second has to do with his preoccupation with "art in a public context", his intense sensitivity to environmental conditions. His architectural experience is an element in both, and both are long-standing concerns. Smith was only twelve when an older cousin introduced him to Jay Hambridge's books on "Dynamic Symmetry", which departs from the static symmetry found in crystalline and certain floral and diatomic patterns into the irregular or "dynamic" laws of phyllotaxis, the constant angle spirals of shells and plants.

Even then Smith liked the diagrams better than the academic paintings to which the theory was applied, and he still uses "root rectangles".

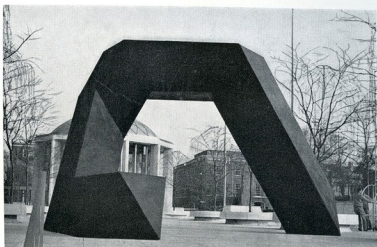
In the late 1930's, Smith saw reproductions of the tetrahedral kites, tower, and gliders of Alexander Graham Bell, built in the first decade of the 20th century and now collected in the Bell Museum in Baddeck, Nova Scotia. (Bell's wooden tetrahedral shelter for viewing aeronautical experiments looks so much like a contemporary structure that photos of the inventor and his family sitting there in period dress seem ludicrously anachronistic.) Also in the late 30's, during his five months at Frank Lloyd Wright's Taliesin East, Smith must have heard from the master such advice as: "Study the geometry that is the idea of every form; a quail, a snail, a shell, a fish; they yield their secrets readily, and are easier to grasp than dogs and horses and humans because they are a little nearer origins, a little more primitive⁵."

Crystallography, with its systematic clarity of dimension and allowance for disorder within the network of physical interactions, offered particular fertile ground. Early in his architectural career, Smith had modified and expanded Wright's diamond and hexagonal modules into a personal style. By 1961, when he had his Bennington students build a huge semi-architectural structure based on the tetrakaidecahedron that illustrates liquid close-packing principles found in soap foam, the tetrahedron was taking him "further and further from considerations of function and structure and toward speculation in pure form⁶". This piece seems to represent a kind of transition between architecture and sculpture based on his own design ideas. It illustrates most clearly the fact that Smith sees his structures as parts of a continuous space-lattice based on crystallographic equivalents, not as "objects among other objects", but "isolated in their own environments".

In such a space-frame (determined by a 4' grid originally set by building materials), "voids are made up of the same components as the masses. In this light, they may be seen as interruptions in an otherwise unbroken flow of space. If you think of space as solid, they are voids in that space". Despite the fact that several of the most impressive pieces (*Willy, The Snake is Out*) were made by totally arbitrary, even chance conjunction of modular components left over from earlier projects, a constantly anticipated wholeness makes itself felt, a unity owed to the implied regularity of the underlying structure. The laws that govern nature do not govern Smith, but he has chosen these systems because of their adaptability. "While the axes normal to the surfaces of a cube are three", he explains, "Those perpendicular to the planes of a space-lattice made up of tetrahedra and octahedra are seven. This allows far greater flexibility and visual continuity of surface than rectangular organizations. Something approaching the plasticity of more traditional sculpture, but within a continuous system of simple elements becomes possible."

Free Ride (1962), which traces the basic axes of a cube, and *Spitball* (1961, 1966), on the basic axes of a tetrahedron, exhibit a fairly simple kind of crystalline symmetry. The first is more predictable and the lineal progression is easier to follow; one side of the cube is omitted, but all the axes are there. The second looks more complex, since our powers of three-dimensional visualization rarely survive the simplest figures. *Spitball* consists, simply enough (once a paper model has been made as illustration) of a tetrahedron with the corners sliced off and the edges slightly beveled as they are in crystals; a central triangular aperture is cut in one face; a whole side is cut out of another face, leaving the diagonal support, and on the third face, two sides, or axes, are retained, providing the ground line. (This is, incidentally, not the process by which the piece was conceived.) *Free Ride* and *Spitball* can be rotated so that the second axis mentioned becomes the ground line, but further rotation results in total change. The more recent *New Piece* (1966), shown in Philadelphia, involves a similar but more complex use of symmetry; no longer tetrahedral, its careening planes are, nevertheless, based on the sections of a rhomboidal dodecahedron.

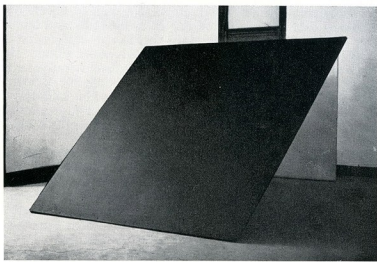
The Keys To Given! is again rectilinear in appearance. From one side the silhouette is a plain horizontal rectangle supported by an inverted L; from the back, it is a plain vertical rectangle with a parallel and inverted L projecting from the side; from the front, one of the three "wings" (the plan was originally for a house) suddenly juts out at the viewer in the unequivocally frontal statement of a square plane, arousing associations with painting; the whole piece could be seen, among other things, as a paradoxical comment on two-and-three-dimensional points of view. The scheme is absolutely symmet-



Cigarette, 1961–1966. 15' × 26' × 18'. All illustrations by courtesy of the Fischbach Gallery, New York.

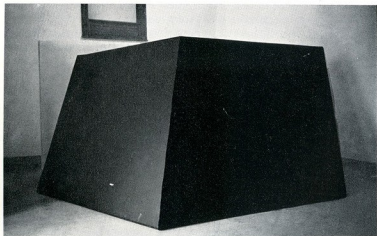


Spitball, 1966. 11'6" × 14' × 14'.



New Piece, 1966.

New Piece, 1966. 12' × 18' × 12'.



rical, with the "same thing happening along all three axes of symmetry . . . according to a strict measure", yet the experience is one of great complexity. *Keys To* is one of several of Smith's sculptures which, if turned, reproduce themselves. Yet he uses these principles with perfect freedom, while *Willy*, which its maker sees as "rather Surrealist", and "as close to a chance piece as I could get", is more restricted, simply because of the determination to follow the "laws of chance".

Smith makes the distinction between architecture as space and light, and sculpture as form. While there may be some transference of a Wrightian sensitivity and skill in moulding inside and outside space, one is constantly aware in Smith's work of a sculptural core, the volume behind the planes. Pieces like *We Lost and Marriage* can be seen as ritual archways, but *Cigarette* is an uncomfortable shelter, moving the viewer past its angled elements and edges at a certain ponderous speed, while *Willy* offers no real escape to its gangling labyrinth. The very simple forms—*The Elevens Are Up* (two slab-like walls), *Die* (a six-foot cube), *The Wall* ("an approximation in whole numbers of the root five rectangle 2,236, a square plus its Golden Sections"), are not reminiscent of architecture, though perhaps of architectural elements isolated to stress their own meanings. (In Smith's catalogue Lipchitz is quoted as saying "a wall's purpose is to measure".) The early pieces were almost "readymades", like the first one to be fabricated—*The Black Box*—made to order in 1962 as a five-fold enlargement of a wooden card-file box noticed on a friend's desk. When the finished product came home from the welder's, the immediate problem was whether it should go outdoors or indoors (it is relatively small, not quite 2' high). Indoors, Smith decided, it would look like furniture; outdoors it held its own.

Since then, he has always preferred a natural, leafy environment that offsets the object quality and makes his sculpture "swim" in its surroundings "as though it were under water". If indoor exhibition lighting is left to him, he makes it quite dim, so that the work looms, and is enhanced by indirect and mysterious associations with archaic monuments, desolate grandeur, and improbable bulk. Though he doesn't "want to dominate anything", these great black presences fulfill the requirements for the "new monument" that is proving of increasing fascination to many younger structuralists, perhaps in compensation for the self-imposed rigour of their styles (witness the recent model shows at Dwan and Feigen, which were rich in grand and impossible schemes, incontestably proving the imaginative prowess of artists often condemned as formula-following sheep). Smith's training in architecture and building, and his continuous interest in "art in a public context", gives him the most genuine of roots in this new tradition. He has said that he prefers the cube to the sphere because he is "civic-minded. A sphere is unnecessarily exclusive; it's the most intense form, turns everything else out. Flat slides allow that things exist outside as well as inside. . . . You can move around a cube, get in the shadow, see the planes; it's a social form".

On the other hand, Smith's contention that the social organism can only assimilate his sculpture "in areas which it has abandoned, its waste areas, against its unfinished backs and sides, places oriented away from the focus of its well-being, unrecognized danger spots, excavations and unguarded roofs", is perhaps naive in view of the speed with which the social organism opens itself to even the most hostile novelty, but it does reflect the general appeal of an "artificial landscape without cultural precedent". Such a concern is not inconsistent with his more classical side. As Samuel Wagstaff has pointed out, Smith's structures are earthy and corporeal. "They are related to early cultures intentionally or through sympathy—menhirs, earth mounds, cairns, and to this culture with equal sympathy—smokestacks, gas tanks, dump trucks, poured concrete ramps. . . . If they were completely successful they would merge in the general variety of Nature." Smith might even agree with Wordsworth's "The forms of Nature have a passion in themselves that intermingles with those works of man to which she summons him".

Like the mysterious serpentine Indian mounds in the mid-west, like Carl André's projected holes, Robert Morris' and Walter de Maria's desert mounds, Michael Steiner's angular protrusions from mountain sides, or Oldenburg's giant perishables, Smith's impassive volumes carry in them an urge to grandeur that approaches folly. Yet the works of most of the younger artists are intentionally lifeless, while the only piece Smith has made which he sees as having "no life outside its immediate situation" was made specifically to cover the unsympathetic academic sculpture in a pool (*Venus Attended by a*

Nymph and a Satyr) in the middle of the exhibition space at the Hartford Athenaeum during his show there. *Fixture* was a dark gray battleship of a form and was not modular, having been "determined by a straightforward desire for economy and simplicity". Its development, then (which provoked the optimistic suggestion that Smith create "covers" for all the equestrian statues in Central Park) was strictly practical rather than conceptual, but the act of covering, or erasing, old or unsympathetic art, even if only for a good installation, is provocative. It has a number of precedents in 20th-century art—from Duchamp's *Mona Lisa* and Picabia's erasure of a poem as it was written on a blackboard during a Dada demonstration, to Rauschenberg's erased de Kooning and LeWitt's proposal to enclose the Cellini Cup in a block of cement; LeWitt's recent form-within-a-form project (see *Artforum*, April 1967, p.42-46), like Duchamp's *Secret Noise*, also brings in the concept of enclosure, of container and invisible contained, which has a relevant prototype in Archimedes' request, according to Plutarch, for a monument that would be a cylinder containing a sphere, inscribed with the ratio (3/2) which the containing solid bears to the contained.

The liberation Smith feels at the possibility of a "reality which had not had any expression in art" has affinities to Pop art's expansion of the subject matter and materials available to art, and comes from similarly practical sources. (Smith's inspiration from classroom problems has a parallel in Rosenquist's breakthrough from his work in outdoor advertising.) It also prefigures the Primary Structuralists' rejection of sculptural antecedents in favor of industrial and scientific models. Smith's own precedents are personal experiences: a night visit to the unfinished New Jersey Turnpike ("The road and much of the landscape was artificial, and yet it couldn't be called a work of art"), glimpses of abandoned airstrips in Europe ("Surrealist landscapes, something that had nothing to do with any function, created worlds without tradition"), and the Nuremberg drill ground ("large enough to accommodate two million men. The entire field is enclosed with high embankments and towers. The concrete approach is three sixteen-inch steps, one above the other, stretching for a mile or so").

The inexpressive stability of water towers, windowless buildings, highways, parking lots, concrete pipeboxes, and military and utilitarian architecture is opposed to a romantic absorption of the landscape into art and to a Futurist idealization of industry. Unashamedly public, totally lacking in pretention, such forms illustrate "form follows function" to the nth degree, which neutralizes. They provide an inorganic resistance to the modern landscape at the same time that they constitute a curiously "natural" addition to it. They are disguised as nothing else, not camouflaged to look like part of an alien "cultural" tradition by classical columns or the modern equivalents of chinoiserie. Smith disapproves, for instance, of the fact that the bridges on the Merritt Parkway are all different, in order to provide "variety". If all the underpasses were made on the same scheme, he says, each one would have its own identity, because each is in a different environment, a different space. The new "useless" sculpture, following the pattern of these "useful" objects, attempts to include this spirit and scale as part of a general move to rid art of its artiness, while retaining its artifactness, its matter-of-factness, its factness. Tony Smith's contribution is not minimal.

Willy, 1962. 7'8" x 18' x 12'.

