

# 9

## R. Buckminster Fuller

A Technocrat for the Counterculture

Fred Turner

In 1965 R. Buckminster Fuller was seventy years old. Short, plump, bespectacled, and, when he spoke in public, often clad in a three-piece suit with an honorary Phi Beta Kappa key dangling at his waist, Fuller looked like nothing so much as an early twentieth-century plutocrat. When he took the stage, he filled the air with hours of technocratic talk, much of it of his own design. Industry! Technology! The Space Program! Leaping from topic to topic across sentences decorated with his own fabulously recondite vocabulary, Fuller spun a cotton-candy of machine-age dreams. New chemicals, new alloys, and new ways of measuring the ever-more massive output of international industry—like the most visionary corporate executive of the high industrial era, Fuller urged his listeners to imagine a world made good by machinery, management, and design.

Yet for all his obvious allegiance to the ideals of the industrial world, Fuller was also a hero to the young members of the American counterculture. Two of his books—*Ideas and Integrities* (1963) and *Operating Manual for Spaceship Earth* (1969)—became staples of hippie libraries across America. His lectures became magnets for the young, and his geodesic domes became the preferred housing of many rural communards. In 1968 his writings became the inspiration for the publication that has long been seen as the Bible of the back-to-the-land movement and a signal document of the counterculture, the *Whole Earth Catalog*. To all those who had wandered off into the plains of Colorado and the hills of New Mexico to build new communities, and to all those who dreamed of making such a move, R. Buckminster Fuller was an inspiration.

But why? What was it about this aging designer and engineer that made him so attractive to a movement that ostensibly rejected industry, technology, and the advice of anyone over thirty years old?

To answer these questions requires cutting both the American counterculture and R. Buckminster Fuller free from the tangle of myths that have grown up around them. Since the late 1960s, scholars and journalists alike have tended to read the American counterculture in terms set by its proponents at

the time. Then and now, analysts have argued that the counterculture represented a collective turn away from the technologies and organizational forms of cold war America. Likewise, thanks in part to his own ability to turn his own life into compelling copy, R. Buckminster Fuller has often been depicted as a *sui generis* genius, a tinkering autodidact in the tradition of Thomas Edison and Alexander Graham Bell. Yet, despite their respective claims to the contrary, neither Fuller nor the American counterculture emerged entirely outside the orbit of the era's military-industrial complex. On the contrary, Fuller and his theory of "comprehensive design" offered many in the 1960s a way to embrace the technologies, the technocratic politics and the flexible, collaborative work styles of the cold war military and industrial worlds even as they built their own alternative communities.

### **Between Nuclear Holocaust and Consumer Cornucopia**

To make sense of the countercultural turn toward technology and Fuller, we need first to remember that Americans in the 1950s, and especially American children, lived under the imminent threat of nuclear Armageddon. In 1967 social psychologist Kenneth Keniston interviewed a group of young men and women who had taken part in a series of anti-Vietnam War efforts. Hoping to uncover the roots of their activism, he asked them to recall their earliest memories. One young woman described the day an encyclopedia salesman sold her mother volume A of the *Encyclopedia Britannica*: "I remember reading it and seeing a picture of an atomic bomb and a tank going over some rubble. And I think I became hysterical. I screamed and screamed and screamed."<sup>1</sup> This young woman was hardly alone. For those who were children at the height of the cold war, the possibility of a nuclear holocaust felt very real. In elementary school they had been taught to "duck and cover" under their desks if they should happen to see a nuclear flash. They had been shown government-sponsored films in which children their own age sprinted through neighborhoods that had been reduced to atomic rubble, hunting for the local fallout shelter.<sup>2</sup> Ever since the Soviet Union had first tested an atomic bomb in 1949, Americans had suffered under a thick cloud of nuclear anxiety. Would the devastation that the *Enola Gay* had wreaked on Hiroshima somehow visit American cities? Would New York someday look like Nagasaki?

By the late 1950s, many Americans had begun to fear that the bomb had become a way of life. The military agenda of the nation at the time seemed to lock adults into a particularly constrained way of life, a way of life that the youth of America would presumably be forced to lead as soon as they grew up. As Elaine Tyler May has pointed out, the dominant social style of the middle and upper

classes during the postwar years could be described as "containment."<sup>3</sup> Much as military and government planners sought to "contain" communism, the men and women of middle America sought to constrain their emotions, maintain their marriages, and build safe, secure, and independent homes. Like the Air Force soldiers who scanned America's borders for incoming Soviet bombers, many Americans took to monitoring the boundaries of their own lives.

Containment was the order of the day in the workplace as well. For critics on the left in particular, society seemed to be increasingly dominated by pyramidal organizations run by buttoned-down, psychologically fragmented men. "As the means of information and of power are centralized," wrote the sociologist C. Wright Mills in 1956, "some men come to occupy positions in American society from which they can look down upon . . . and by their decisions mightily affect, the everyday worlds of ordinary men and women."<sup>4</sup> Under the controlling eye of this "power elite," Mills argued, ordinary Americans found themselves trapped in corridors and offices, unable to envision, let alone take charge of, the entirety of their work or their lives. Ordinary people lacked the ability to "reason about the great structures—rational and irrational—of which their milieux are subordinate parts," he explained.<sup>5</sup> So, too, in a way, did the men at the top. For critics like Mills, both the masters of bureaucracy and their minions suffered from a paring away of emotional life and a careful separation of psychological functions. In the wake of World War II, wrote Mills, rationalization had begun to give rise to "the man who is 'with' rationality but without reason, who is increasingly self-rationalized and also increasingly uneasy."<sup>6</sup> This man, wrote Mills, was a "Cheerful Robot."<sup>7</sup>

Alongside the twin threats of the bomb and of a stultifying, mechanical adulthood, however, the young Americans of the 1960s also enjoyed an unparalleled level of affluence and, with it, a cornucopia of consumer goods. At one level these goods, too, were part of America's cold war military tool kit. In 1959, for instance, Vice President Richard Nixon found himself facing down Soviet premier Nikita Khrushchev in a model kitchen at the American Exhibition in Moscow. Nixon proudly told the scowling Khrushchev, "There are 44 million families in the United States. . . . Thirty-one million families own their own homes and the land on which they are built. America's 44 million families own a total of 56 million cars, 50 million television sets and 143 million radio sets. And they buy an average of nine dresses and suits and 14 pairs of shoes per family per year."<sup>8</sup>

Yet, for the children of the 1950s who would become the rebels of the 1960s, cars, TV sets, and radios also offered an escape from the shadows of the cold war. Teenagers found themselves surrounded by appliances and automobiles and

opportunities for education and employment that their parents, growing up in the Depression, could hardly have imagined. As many commentators remarked at the time, this affluence transformed adolescence into a true interregnum between the freedom of childhood and the employment and family demands of adulthood.<sup>9</sup> For the ever-increasing numbers of middle- and upper-class youths in particular, adolescence became a time for personal exploration.

By the late 1960s, then, young Americans confronted a dilemma. On the one hand, the world of military and industrial bureaucracy and the technologies associated with it threatened to end their lives, either by destroying the earth in a nuclear holocaust or by demanding that as they became adults, young men and women transform themselves into "Cheerful Robots." On the other hand, however, that same bureaucracy had endowed their lives with all sorts of technologically supported pleasures, including music, television, and travel. Moreover, thanks to the power of postwar industry, the college graduates of the 1960s would have no trouble finding jobs. But would those jobs provide the same sorts of satisfactions that adolescence had offered? Many had their doubts. "There are models of marriage and adult life, but . . . they don't work," recalled the same young woman who had discovered the atom bomb in the encyclopedia. "There is that whole conflict about being professional, leading a middle-class life which none of us have been able really to resolve. How do you be an adult in this world?"<sup>10</sup>

### **Comprehensive Design as a Way of Life**

It was with this question in mind that many turned to R. Buckminster Fuller. If the politicians and CEOs of mainstream America were distant and emotionally reserved, Fuller was playful and engaged. And like his young audiences, he displayed a highly individualistic turn of mind and a deep concern with the fate of the species. But it was not simply Fuller's character that drew his audiences to him. Rather, it was the resolution he offered to the paradox that confronted the young adults of the 1960s. As he moved from university to university, collaborating with college students, giving speeches, and designing new technologies, Fuller exemplified a way of making a living alongside the academy and industry without becoming in any way a bureaucrat. Moreover, his rhetoric and his theories of technology seemed to integrate the most microcosmic aspects of daily life and the most macrocosmic forces shaping human survival. For Fuller, design could be more than a stage of manufacture associated with cold war industry; it could be a world-saving way of life.

In a 1949 essay that he later expanded and reprinted in *Ideas and Integrities*, a volume that circulated throughout the counterculture, Fuller codified that

vision as an expression of his own professional goals and beyond them, of a new professional category, the "comprehensive designer."<sup>11</sup> In *Ideas and Integrities* Fuller located the origin of his vision squarely in his personal experience. During World War I, he wrote, he had watched his four-year-old daughter, Alexandra, die of infantile paralysis, in part, he believed, because the family's home was badly built.<sup>12</sup> At the time, he was working as a contractor with the Navy. As a former junior officer, he had seen how, with proper coordination, extraordinary industrial resources could be mustered to solve military problems. In his view his daughter had died directly from a disease but indirectly from a failure to distribute the world's resources appropriately.<sup>13</sup> This conviction grew during World War II and the early years of the cold war, where once again Fuller saw the full scope of industrial production at work, as well as the inequality with which those resources were distributed. In Fuller's view the natural world was governed by a series of laws that kept it in harmonious balance. In his experience, however, the mid-twentieth-century social world was one in which the material goods created in accordance with those laws were not being evenly distributed and where children were dying as a result. Politicians, generals, corporate leaders—each put the needs of his own organization first when it came to resources. What humankind required, he argued, was an individual who could recognize the universal patterns inherent in nature, design new technologies in accord with both these patterns and existing industrial resources, and see that those new technologies were deployed in everyday life.

This individual he explained would be a "comprehensive designer."<sup>14</sup> According to Fuller, the comprehensive designer would not be another specialist, but would instead stand outside the halls of industry and science, processing the information they produced, observing the technologies they developed, and translating both into tools for human happiness. Unlike specialists, the comprehensive designer would be aware of the system's need for balance and the current deployment of its resources. He would then act as a "harvester of the potentials of the realm," gathering up the products and techniques of industry and redistributing them in accord with the systemic patterns that only he and other comprehensivists could perceive.<sup>15</sup> To do this work, the designer would need to be able to access all of the information generated within America's burgeoning military-industrial bureaucracy yet at the same time remain outside it. He would need to become "an emerging synthesis of artist, inventor, mechanic, objective economist and evolutionary strategist."<sup>16</sup> Constantly poring over the population surveys, resource analyses, and technical reports produced by states and industries, but never letting himself become a full-time employee of any of these, the comprehensive designer would finally see what the bureaucrat could not: the whole picture.

This vision would allow to him to realign both his individual psyche and the deployment of political power with the laws of nature. If, as so many in the 1960s had begun to suspect, the bureaucrat had been psychologically broken down by the demands of his work, the comprehensive designer would become whole again. Neither engineer nor artist, but always both simultaneously, he would achieve psychological integration even while working with the products of technocracy. Likewise, where bureaucrats applied their power by means of political parties and armies, and in Fuller's view, thus failed to properly distribute the world's resources, the comprehensive designer would apply power systemically. That is, he would analyze the data he had gathered and attempt to visualize the world's needs, now and in the future. He would then design technologies that would meet those needs. The technologies would so reshape the environment within which people worked as to reorganize society itself. This new society would see its resources distributed not in keeping with the demands of politicians but with the natural laws that already kept the world system of nature in balance. Agonistic politics, Fuller implied, would become irrelevant. What would change the world was "comprehensive anticipatory design science."<sup>17</sup>

With the notion of comprehensive design, Fuller offered his readers a way to embrace the pleasures and power associated with the products of cold war industry even as they avoided becoming bureaucratic drones. Moreover, Fuller implied that the reshaping of the individual life and its reorientation around principles of comprehensive design could save not only the individual but the species. As he put it in *Ideas and Integrity*: "If man is to continue as a successful pattern-complex function in universal evolution, it will be because the next decades will have witnessed the artist-scientist's spontaneous seizure of the prime design responsibility and his successful conversion of the total capability of tool-augmented man from killingry [*sic*] to advanced livingry [*sic*]—adequate for all humanity."<sup>18</sup> In Fuller's view the comprehensive designer not only didn't need to don a gray flannel suit when he went to work—he actually needed to become an artist and an intellectual migrant. To a generation preoccupied with the fear of becoming lock-step corporate adults, R. Buckminster Fuller offered a marvelously playful alternative, but one that was not mere play. It was a way to preserve the human future.

Despite Fuller's claims to have coined the term in response to his unique biographical conditions—a claim that reinforced the notion that his own life should serve as an example for his readers—Fuller's vision of the comprehensive designer carried with it intellectual frameworks and social ideals formulated at the core of military research culture. Foremost among these was Fuller's notion of the world as an information system. In his numerous autobiographical writings Fuller traced the origins of his ideas about the world as a system

to his great aunt Margaret Fuller's involvement with the transcendentalists and especially to his time on board ships—which he considered closed systems—when he was a naval officer.<sup>19</sup> Yet his writings also bear the imprint of cold war-era, military-industrial information theory. For Fuller, as for the information theorists of World War II and the systems analysts of later decades, the material world consisted of information patterns made manifest. These patterns could be modeled and manipulated by information technologies, notably the computer. The computer in turn could suffice as a model for the human being.<sup>20</sup> After all, while Fuller's comprehensive designer promises to be psychologically integrated as specialists are not, that integration depends on the designer's ability to process vast quantities of information so as to perceive social and technological patterns. Fuller's comprehensive designer is, from a functional point of view at least, an information processor, and as such, as much a descendent of cold war psychology and systems theory as a child of Fuller's own imagination.<sup>21</sup>

Even Fuller's seemingly unique work style echoes the collaborative ethos of World War II research. According to Fuller and, later, to his countercultural admirers, the comprehensive designer came by his comprehensive viewpoint only by stepping away from the industrial and military institutions in which specialists had long been trapped. Only the freestanding individual "could find the time to think in a cosmically adequate manner," he explained.<sup>22</sup> By scanning the horizon of specialties and moving from institution to institution, Fuller argued, the comprehensive designer could glean enough information to see the entire "system." Fuller himself lived according to this ethos: for most of his career he migrated among a series of universities and colleges, designing projects, collaborating with students and faculty—and always claiming the rights to whatever these collaborations produced. By the early 1960s, Fuller was traveling more than two-thirds of every year.<sup>23</sup> In his writings Fuller offered his travels as a model of the proper behavior for a comprehensive designer and suggested that such a life was genuinely new. Yet a quick glance back at the laboratories of Los Alamos or MIT's Rad Lab during World War II would have reminded Fuller's audiences that interdisciplinary migration and multi-institutional collaboration were key features of the military research world. They were, in fact, the social processes for which cybernetics and systems theory had served as a universal discourse.<sup>24</sup> Even as Fuller claimed to be a *sui generis* intellectual, and even as his audiences celebrated his ideas and his lifestyle as harbingers of the future, Fuller's allegiance to systems theoretical perspectives, his faith in information as the substrate to experience, and his collaborative work style all carried with them links to the very military-industrial complex that the youth movements of the 1960s claimed to want to overthrow.

### **Comprehensive Design and the Politics of Consciousness**

Yet, strangely enough, it was these links that helped make Fuller so attractive to so many at the time. Today, Americans often remember the youth movements of the 1960s as a single mass attack on institutions and cultural styles of cold war America. However, while they did share aversions to the Bomb and to the suburbs, members of those movements tended to adopt one of two quite different postures toward social change. In the early 1960s, alongside the civil rights movement in the South and the free speech movement at Berkeley, students began to organize into a political movement that would become known as the New Left.<sup>25</sup> For these activists the key to social change lay in political action. Accordingly, its members formed new parties (such as Students for a Democratic Society, or SDS), staged conventions, issued manifestos and marched against the Vietnam War. If elements within the New Left began to experience forms of solidarity like those they helped to build into the world outside the movement, they did so as an aftereffect of their own organizing. Within the New Left, true community and the end of alienation were usually thought to be the result of political activity, rather than a form of politics in its own right.

The reverse was true among what I will call the New Communalist wing of the counterculture.<sup>26</sup> If the New Left had grown up out of cold war social struggle, the first stirrings of New Communalism appeared within the artistic bohemias of cold war Manhattan and San Francisco, among the peripatetic Beats, and finally, among the mystics and acid heads of the San Francisco Bay Area in the early 1960s. For the New Communalists the key to social change was not politics but mind. In the 1969 volume that first popularized the phrase "counterculture," Theodore Roszak spoke for many New Communalists when he argued that the central problem underlying the rationalized bureaucracy of the cold war was not political structure but the "myth of objective consciousness."<sup>27</sup> This state of mind, wrote Roszak, emerged among the experts who dominated rationalized organizations and was conducive to alienation, hierarchy, and a mechanistic view of social life. Its emblems were the clock and the computer, its apogee "the scientific world view, with its entrenched commitment to an ego-centric and cerebral mode of consciousness."<sup>28</sup> Against this mode Roszak and others proposed a return to transcendence and with it, a simultaneous transformation of the individual self and its relations with others:

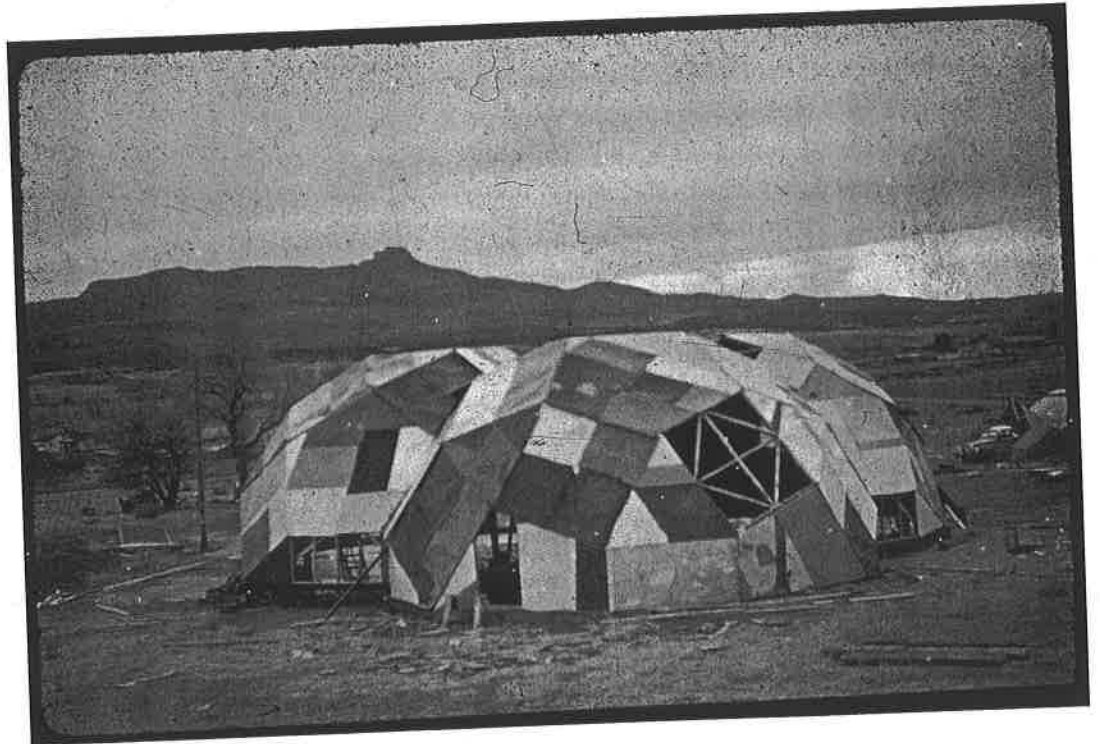
This . . . is the primary project of our counter culture: to proclaim a new heaven and a new earth so vast, so marvelous that the inordinate claims of technical expertise must of necessity withdraw in the presence of such splendor to subordinate and marginal status in the lives of men. To create and broadcast such a consciousness



of life entails nothing less than the willingness to open ourselves to the visionary imagination on its own terms.<sup>29</sup>

In the mid-1960s this new consciousness became the basis of the largest wave of communalization in American history. In the two centuries before 1965, historians and sociologists have estimated that Americans established more than six hundred communes.<sup>30</sup> Between 1965 and 1972 journalists and sociologists have estimated that somewhere between two thousand and six thousand communes were created, with most appearing between 1967 and 1970.<sup>31</sup> Virtually all of these communities were built by young, white, middle- and upper-class youths, and with few exceptions, they had little to do with the New Left. Rather, the communards of the late 1960s aimed to organize themselves around the pursuit of a shared consciousness and with it, a leveled social structure that would obviate the need for conventional politics. One of the earliest such communes, Drop City, blossomed in a cluster of geodesic domes on the plains of Colorado in 1965 (fig. 9.1).<sup>32</sup> As cofounder Peter Douthit, better known as "Peter Rabbit," explained at the time: "There is no political structure in Drop City. Things work out; the cosmic forces mesh with people in a strange complex intuitive interaction. . . . When things are done the slow intuitive way

**Figure 9.1**  
Two domes at Drop  
City soon after  
construction.  
© Estate of R. Buckmin-  
ster Fuller. All rights  
reserved. Used by per-  
mission. Source: Special  
Collections, Stanford  
University Libraries.

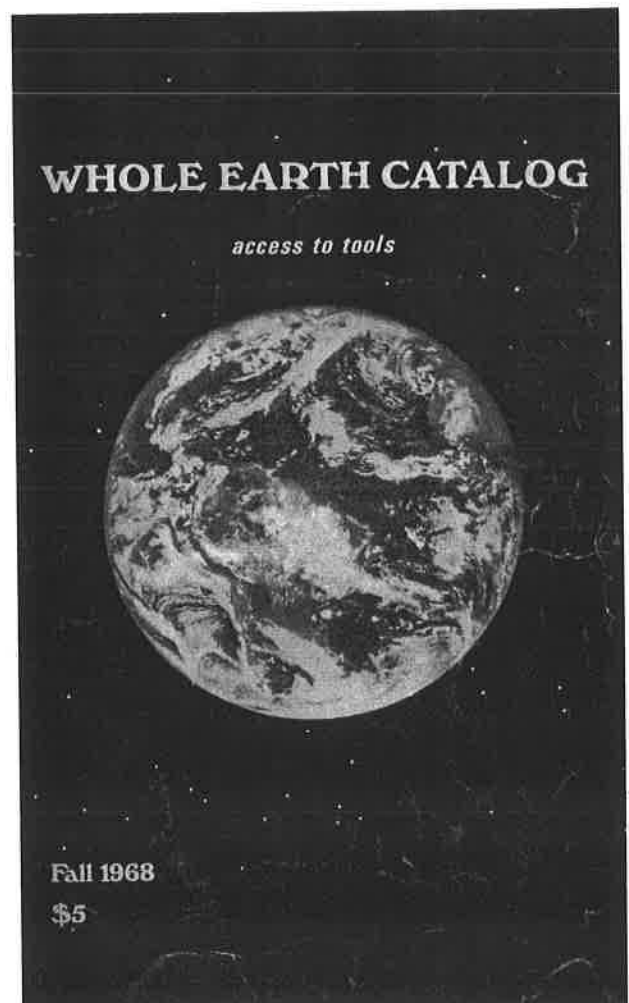


the tribe makes sense."<sup>33</sup> At Drop City individuals were free to come and go whenever they liked and to pursue what interested them moment to moment. This freedom they believed would lead to a greater state of collective harmony, with one another and with unseen forces in the universe. "We dance the joy-dance [*sic*], we listen to the eternal rhythm, our feet move to unity . . . live-love-joy-energy are one," wrote Rabbit. "We are all one."<sup>34</sup>

For the Droppers, as for thousands of other young communards, consciousness formed the foundation of a new kind of sociability—holistic, collaborative, antibureaucratic. Small-scale technologies in turn opened the doors to consciousness and, thus, to this new social world. LSD, water pipes, stereo gear, books such as the *I Ching*, Norbert Wiener's *Cybernetics*, and especially, the writings of R. Buckminster Fuller—for the New Communalists, each of these items served as a tool with which to remake the self and, with it, the group. They also served as bridges between the industrial world that the New Communalists had left behind and the postindustrial future they hoped to build. Fuller had patented the geodesic dome, for instance, in 1951; between 1954 and 1957 the American military deployed hundreds of these domes to house radar installations across a three-thousand-mile early warning line built in Canada.<sup>35</sup> During those same years, Fuller's domes were exhibited worldwide at trade fairs and expositions as evidence of American technological ingenuity. Yet even though they had served as emblems of America's military-industrial might, at Drop City they also became emblems of an America transformed. The multicolored panels of the geodesic domes at Drop City for instance, were made from the roofs of junked automobiles. The commune's long-haired founders had spent days chopping the roofs out of old cars with hand axes and electric saws and then bolting them to wooden frames. In the process they turned an industrial artifact into an occasion for hand craft and collective labor. The houses they built in turn became emblems of a new mind-set. As one Drop City resident put it, "The domes have a sort of cosmic guidance. All those triangle sections coming together to make a single dome, a self-supporting thing. It's like a community can be."<sup>36</sup>

In that sense the builders of Drop City's domes had become comprehensive designers. As they chopped up the roofs of old cars and bolted them together into complex geometric patterns, the communards of the back-to-the-land movement embraced the intellectual and material output of American industry, as well as the collaborative, freelance work styles of military-industrial research. At the same time, they disassociated themselves from the Bomb and the bureaucratic professional culture that they imagined had produced it. In this way they both rejected their parents' world and, ultimately, found a way to make their own place in it.

The New Communalists also set a Fulleresque example for a generation of young Americans. In 1968, San Francisco-based multimedia artist and entrepreneur Stewart Brand and his wife, Lois, published a sixty-one-page guide to books, mechanical devices, and outdoor gear that they hoped would be useful to those heading back to the land, the *Whole Earth Catalog* (fig. 9.2). Over the next four years the *Catalog* would grow to more than four hundred pages, would sell more than a million copies, and would win the National Book Award. To some who lived on the land, and to many who didn't, the *Catalog* became a primer in comprehensive design. As Brand put it in his introduction to the *Catalog's* first section, "Understanding Whole Systems," "The insights of R. Buckminster Fuller initiated this catalog."<sup>37</sup> Sized somewhere between a tabloid newspaper



**Figure 9.2**  
The cover of the first  
*Whole Earth Catalog*  
(1968).

Photo courtesy of  
Stewart Brand. Source:  
Special Collections,  
Stanford University  
Libraries.

and a glossy magazine, the *Whole Earth Catalog*, like Fuller's own writings, offered readers a vision of technology as a means by which to escape industrial bureaucracy while living synergistically off its fruits. Consider the *Catalog's* opening statement. On the inside cover of every edition, Stewart Brand defined the *Catalog's* "PURPOSE":

We are as gods and might as well get good at it. So far, remotely done power and glory—as via government, big business, formal education, church—has succeeded to the point where gross defects obscure actual gains. In response to this dilemma and to these gains a realm of intimate, personal power is developing—power of the individual to conduct his own education, find his own inspiration, shape his own environment, and share his adventure with whoever is interested. Tools that aid this process are sought and promoted by the WHOLE EARTH CATALOG.

Brand's definition clearly states the countercultural critique of hierarchical, establishment institutions as emotionally and geographically remote from the lives of citizens and, on the whole, destructive. At the same time, he intimates that he and the reader are like gods in at least two senses, one local and one global, and both familiar from Fuller's *Ideas and Integrities*. On the local level the individual reader is like a god in that each person has the power to conduct life as he or she wishes, as long as he or she can find the appropriate tools. For Brand, as for Fuller, the system of the universe is complete—it is not something we can put together but something that is together in its own right. At the local level our job is to turn its energies and resources to our own purposes. In keeping with the countercultural critique of bureaucracy, we must pursue our own individual transformation and, with it, the transformation of the world.

These transformations depend, however, on our understanding the world as a system of invisible forces. At the global level, like Fuller's comprehensive designer or perhaps a cold war systems analyst, Brand's reader enjoyed the power of a god to survey the whole earth below him. The front cover of many editions of the *Whole Earth Catalog* featured an image of the earth seen from space. Simply by picking up the *Catalog*, the reader became a visionary of a sort. This vision, though, had been made possible by the cameras of NASA and, more generally, by the fact that the reader was a member of the most technologically advanced generation on Earth. In the *Whole Earth Catalog* the same technocracy that had spawned the world of the white-collar worker and the war in Vietnam had granted those who rejected both the power to see the world in which they lived as a single whole.

In this sense the *Catalog* suggested that its readers could become comprehensive designers as they read. As soon as they opened the book, their eyes could

roam across what looked to be a whole planet's worth of goods: books, tepees, handsaws, radios, motorcycles—you name it. Simply by thumbing through the *Catalog*, readers could imagine themselves as masters of a universe of information and designers of their own lives. The *Catalog's* offerings served in turn as tools with which the reader could deploy the principles of comprehensive design in everyday life. In the pages of the *Catalog*, as on the rural communes it was created to serve, a backpack or a tent did not simply offer a means of escape into the woods. It offered readers a chance to join an invisible community of nomads, to act in accord with the ancient energies of nature and to become a more "whole" person in the process. That is, these goods would help transport the reader into an environment in which he or she might be able, at the global level, to spot and, at the local, personal level, to act in accord with, the laws of nature. In that way the *Catalog's* small-scale technologies, its backpacks and tents, and, of course, geodesic domes—a staple of the *Catalog*, as well as of many communes—were not so much tools for action as tools for vision. They offered readers the means to transform the products of high-technology industry into a way of seeing the world as a whole. Having grasped that vision, these comprehensive designers could create new communal worlds of their own and by their example, individual and collective, save the world as a whole from the perils of bureaucratized industry.

### Conclusion

For the young of the 1960s the logic of comprehensive design embodied a dizzying set of analogies that placed their own lives at the center of the universe. The individual life, the new community, the world as a whole—as glimpsed in the pages of the *Whole Earth Catalog* or lived on a communal farm, each was an emblem of one another and all constituted an indissoluble whole. Equipped with the proper tools, the young American could scan the whole globe, perceive its hidden patterns, and act in his or her own—and, presumably, the world's—best interests. If the cold war bureaucrat sat huddled in his office, glimpsing only the most partial fragments of the human enterprise, the comprehensive designers of the back-to-the-land movement positioned themselves at the fringes of American society and thereby sought to take in a wider view. Having forsaken the bureaucratic towers of technocracy, they could take up its many technological products and turn them to a new end: the transformation of the individual consciousness and with it the founding of a new society. At the same time, they could escape the conundrums of adulthood that beset their generation. After all, what could be more important or more fun than building a new society?

R. Buckminster Fuller's own life seemed to prove the point. As they read his books and flocked to his lectures, many middle- and upper-class youths hoped to harness the economic power of American industry to build independent, flexible lives and to grow up to enjoy them as much as he did his. Yet, to the extent that they tried to build those lives on communes, most failed. By the mid-1970s virtually all of the communes built over the preceding decade had disappeared. While the vision of communities founded on shared consciousness alone held enormous appeal in theory, it crumbled in the face of the material realities of rural farming and the complexities of collective life.

For the young of the late 1960s, R. Buckminster Fuller's vision of comprehensive design had seemed to offer an escape from the need to enter institutions, to confront other individuals, to struggle over the distribution of resources and the proper organization of life. In the coming years Fuller's hope for a world of individuals equipped with vast databases of information and the capacity to see—and manage—the world as a whole would animate the rise of the personal computer and the introduction of the Internet. Yet, even as the theory of comprehensive design has lingered in the cultural atmosphere and, with it, the hope for a social life built on interpersonal harmony, free commerce, and a lack of bureaucracy, so too has the failure of the communes. In 1973 the founders of Drop City sold the commune's land and left their geodesic domes to collapse under the incessant Colorado winds.<sup>38</sup> As they had learned, tools alone could not sustain community, nor could careful attention to design replace the nitty-gritty, everyday work of politics.

# R. Buckminster Fuller

New Views on



Edited by Hsiao-Yun Chu  
and Roberto G. Trujillo

## **New Views on R. Buckminster Fuller**



# **New Views on R. Buckminster Fuller**

Edited by Hsiao-Yun Chu and Roberto G. Trujillo

**Stanford University Press**  
Stanford, California

Stanford University Press  
Stanford, California

©2009 by the Board of Trustees of the Leland Stanford Junior University. All rights reserved.

This book has been published with the assistance of Stanford University Libraries.

No part of this book may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or in any information storage or retrieval system without the prior written permission of Stanford University Press.

Printed in the United States of America on acid-free, archival-quality paper

Library of Congress Cataloging-in-Publication Data

New views on R. Buckminster Fuller / edited by Hsiao-Yun Chu and Roberto G. Trujillo.

p. cm.

Includes bibliographical references and index.

ISBN 978-0-8047-5209-1 (cloth : alk. paper)--ISBN 978-0-8047-6279-3 (pbk. : alk. paper)

1. Fuller, R. Buckminster (Richard Buckminster), 1895-1983--Influence. 2. Engineers--United States. 3. Architects--United States. 4. Inventors--United States. I. Chu, Hsiao-yun. II. Trujillo, Roberto G., 1951-

TA140.F9N48 2009

620.0092--dc22

2009007192

Designed by Bruce Lundquist

Typeset at Stanford University Press in 10/15 Minion

# Contents

|                                                                                                                                          |     |
|------------------------------------------------------------------------------------------------------------------------------------------|-----|
| <b>Contributors</b>                                                                                                                      | vii |
| <b>Preface</b> <i>Roberto G. Trujillo</i>                                                                                                | xi  |
| <b>Introduction</b> <i>Hsiao-Yun Chu</i>                                                                                                 | 1   |
| <b>1 Paper Mausoleum: The Archive of R. Buckminster Fuller</b><br><i>Hsiao-Yun Chu</i>                                                   | 6   |
| <b>2 1927, Bucky's Annus Mirabilis</b><br><i>Barry M. Katz</i>                                                                           | 23  |
| <b>3 R. Buckminster Fuller: America's Last Genuine Utopian?</b><br><i>Howard P. Segal</i>                                                | 36  |
| <b>4 Thinking and Building: The Formation of<br/>R. Buckminster Fuller's Key Concepts in "Lightful Houses"</b><br><i>Joachim Krausse</i> | 53  |
| <b>5 "Spirit-House" and "Steppenwolf" Avant-Garde:<br/>American Origins in the Dymaxion House Concept</b><br><i>Claude Lichtenstein</i>  | 76  |
| <b>6 Energy in the Thought and Design of R. Buckminster Fuller</b><br><i>David E. Nye</i>                                                | 86  |
| <b>7 Necessary Beauty: Fuller's Sumptuary Aesthetic</b><br><i>Jonathan Massey</i>                                                        | 99  |
| <b>8 Backyard Landing: Three Structures by Buckminster Fuller</b><br><i>Maria Gough</i>                                                  | 125 |
| <b>9 R. Buckminster Fuller: A Technocrat for the Counterculture</b><br><i>Fred Turner</i>                                                | 146 |
| <b>10 Fluid Geographies: Politics and the Revolution by Design</b><br><i>Felicity D. Scott</i>                                           | 160 |
| <b>11 Fuller's Futures</b><br><i>Reinhold Martin</i>                                                                                     | 176 |
| <b>Notes</b>                                                                                                                             | 191 |
| <b>Index</b>                                                                                                                             | 219 |

(1954), Fuller Student Project, University of Minnesota,” a project in which Snelson was not involved.

35. “No. 97 for release Wednesday, October 28, 1959,” in [Press Releases] MoMA Library, volume for 1959.

36. Anon., “Why Not Build It?” *New York Sunday News*, Nov. 1, 1959; Anon., “Exhibition Design for Future Living,” *New York Post*, Nov. 11, 1959; George McCue, “Buckminster Fuller’s One-Man Show,” *St. Louis Post-Dispatch*, Nov. 1, 1959; in Department of Public Information Records, 82 (21, 807), MoMA Archives.

37. John Canaday, “Art: New Directions in Architecture,” *New York Times*, Sep. 22, 1959, 78; Huxtable, “Future Previewed?” 21.

38. See “Geodesic Dome,” *Architectural Forum* 95, no. 2 (Aug. 1951): 149.

39. Kenneth Snelson, New York, to René Motro, Guildford, Surrey, ca. 1990, in Motro, *Tensegrity*, 225.

40. *Ibid.*, 223–24.

41. John Canaday, “Art: Constructions on the ‘Tensegrity’ Principle,” *New York Times*, April 16, 1966, 24.

42. Kenneth Snelson, “Whose Baby?” Letter to the Editor, *Johns Hopkins Magazine*, April 1980, 2.

43. Kenneth Snelson, New York, to Buckminster Fuller, Jan. 23, 1972, in Fuller MSS, M1090:2:234.

44. Buckminster Fuller, Philadelphia, to Kenneth Snelson, New York, March 1, 1980, 24, in Fuller MSS, M1090:2:411. Fuller’s account of the MoMA episode differs in certain details from that of Snelson.

45. Buckminster Fuller, “Tensegrity,” *Portfolio and Art News Annual*, no. 4 (1961): 112–27, 144–48.

46. Wong, “The Geodesic Works,” 1:168–69 and n. 72, where he cites Duncan Stuart, “Interview with Yunn Chii Wong,” Raleigh, North Carolina, April 26, 1995. See also Michael John Gorman, *Buckminster Fuller: Designing for Mobility* (Milan: Skira, 2005).

47. Fuller, “Tensegrity,” 121.

48. Buckminster Fuller to Brian Higgins, Chicago, Aug. 12, 1982, in Fuller MSS, M1090:2:465.

49. Pang, “Dome Days,” 171.

50. Buckminster Fuller, Philadelphia, to Kenneth Snelson, New York, March 1, 1980, 4, 6, in Fuller MSS, M1090:2:411.

## Chapter 9

1. Quoted in Kenneth Keniston, *Young Radicals: Notes on Committed Youth* (New York: Harcourt Brace and World, 1968), 48.

2. Spencer R. Weart, *Nuclear Fear: A History of Images* (Cambridge, MA: Harvard University Press, 1988), 133.

3. Elaine Tyler May, *Homeward Bound: American Families in the Cold War Era* (New York: Basic Books, 1988), 13–16.

4. C. Wright Mills, *The Power Elite* (New York: Oxford University Press, 1956), 3; quoted in Andrew Jamison and Ron Eyerman, *Seeds of the Sixties* (Berkeley: University of California Press, 1994), 42.

5. C. Wright Mills, *The Sociological Imagination* (New York: Oxford University Press, 1959), 168.

6. *Ibid.*, 169.

7. *Ibid.*, 171.

8. Quoted in May, *Homeward Bound*, 145.

9. See, e.g., Keniston, *Young Radicals*, 229–47.

10. Quoted in Keniston, *Young Radicals*, 39.

11. R. Buckminster Fuller, “The Comprehensive Designer,” manuscript of 7 pages, June 1, 1949, Buckminster Fuller Archive, Manuscript File 49.06.01; repr. in R. Buckminster Fuller, *Your Private Sky: R. Buckminster Fuller, Discourse* (Baden: Lars Müller, 2001), 243–46; hereafter *Your Private Sky: R. Buckminster Fuller, Discourse* is referenced as vol. 2 of YPS. Fuller published an expanded version of this essay under the title “Comprehensive Designing,” in *Trans/Formation* 1, no. 4 (1950): 18–23. This expanded version was reprinted in R. Buckminster Fuller, *Ideas and Integrities: A Spontaneous Autobiographical Disclosure*, ed. Robert Marks (Englewood Cliffs, NJ: Prentice-Hall, 1963), 173–82.

12. Fuller, *Ideas and Integrities*, 43.

13. *Ibid.*, 35–43.

14. *Ibid.*, 173.

15. *Ibid.*, 176.

16. *Ibid.*

17. *Ibid.*, 63.

18. *Ibid.*, 249.

19. “When I heard that Aunt Margaret said, ‘I must start with the universe and work down to the parts, I must have an understanding of it,’ that became a great drive for me,” he would later recall (R. Buckminster Fuller and Robert Snyder, *R. Buckminster Fuller: An Autobiographical Monologue Scenario Documented and Edited by Robert Snyder* [New York: St. Martin’s, 1980], 12). On the effects of his time in the Navy, Fuller later explained: “You see how by this comprehensive anticipatory way of looking at things and thinking about the total needs of total man, I came a few years later to invent the words, ‘Spaceship Earth.’ Because I began to think about the total planet as being as beautifully designed and equipped as a ship. How do you run it in such a way as to take care of everybody?” (*ibid.*, 29).

20. Fuller’s work is full of computational metaphors. He often argued that the computer was an imitation of the human mind. See, e.g., R. Buckminster Fuller, *Operating Manual for Spaceship Earth* (Carbondale: Southern Illinois University Press, 1969), 112. In that same volume Fuller points to cybernetics and systems theory as key tools with which to solve the world’s problems (87).

21. For a comprehensive and fascinating study of the role computers played in cold war psychology, and popular psychological discourse thereafter, see Paul N. Edwards, *The Closed World: Computers and the Politics of Discourse in Cold War America* (Cambridge, MA: MIT Press, 1996).

22. Fuller, quoted in Fuller and Snyder, *R. Buckminster Fuller*, 38.

23. Hugh Kenner, *Bucky: A Guided Tour of Buckminster Fuller* (New York: Morrow, 1973), 290.

moving, building completely free and open way stations, each a warm and beautiful conscious environment. We are winning” (Rabbit, quoted in *ibid.*, 37).

34. Rabbit, *Drop City*, 31; quoted in Hedgepeth, *The Alternative*, 36.

35. Alex Soojung-Kim Pang, “Dome Days: Buckminster Fuller in the Cold War,” in *Cultural Babbage: Technology, Time and Invention*, ed. Francis Spufford and Jenny Uglow (Boston: Faber and Faber, 1996), 167–92.

36. Peggy [no surname], quoted in Hedgepeth, *The Alternative*, 153. For an incisive architectural analysis of the domes at Drop City see Simon Sadler, “Drop City Revisited,” *Journal of Architectural Education* 59, no. 3 (2006): 5–14.

37. Stewart Brand, “Buckminster Fuller,” in *The Last Whole Earth Catalog*, ed. Stewart Brand (Menlo Park, CA: Portola Institute, 1971), 3.

38. Gardner, *The Children of Prosperity*, 46–47.

### Chapter 10

Research for this chapter was supported by a Research and Travel Grant, and a Humanities Center Grant, from the School of Humanities at the University of California, Irvine. I would also like to thank Hsiao-Yun Chu and the staff of Special Collections at Stanford University’s Green Library for their kind assistance with the R. Buckminster Fuller Collection.

1. Gene Youngblood, “Earth Nova,” *Los Angeles Free Press*, April 3, 1970, 34. Binelli was described here as a “young Israeli architect who had worked with Bucky in Ghana, teaching natives to build geodesic domes. He’s now conducting a similar project with a group of street gangs in New York City.”

2. See R. Buckminster Fuller, “Prevailing Conditions in the Arts,” in *Utopia or Oblivion: The Prospects for Humanity* (New York: Bantam, 1969), 83–84.

3. R. Buckminster Fuller, “How It Came About (World Game)” (1969), repr. in R. Buckminster Fuller, *Your Private Sky: R. Buckminster Fuller, the Art of Design Science*, ed. Joachim Krause and Claude Lichtenstein (Baden: Lars Müller, 2001), 472; hereafter *Your Private Sky: R. Buckminster Fuller, the Art of Design Science* is referenced as vol. 1 of YPS. “The world’s increasing confidence in electronic instrumentation,” he noted in another context, was “due to the demonstrated reliability of its gyrocompasses, and its ‘blind’ instrument landings of airplanes at night and in thick fog” (R. Buckminster Fuller, “The World Game: How to Make the World Work,” in *Utopia or Oblivion: The Prospects for Humanity* [New York: Bantam, 1969], 160).

4. In a remarkable essay, Mark Wigley has traced Fuller’s World Game project to military sources. He notes, for instance, that in 1941 “Fuller was part of [a] secret team of artists, filmmakers, designers and architects (including John Ford, Raymond Loewy, Walter Teague, Henry Dreyfuss, Norman Bel Geddes, Louis Kahn, Bertrand Goldberg, Lewis Mumford, and Walt Disney) working for the Visual Presentation Branch of the newly formed Office of Strategic Services (OSS, the predecessor of the CIA) to design a Presidential Situation Room that coordinates and efficiently presents ‘a panorama of concentrated information’ during war” (Mark Wigley, “Planetary Homeboy,” *ANY* magazine, no. 17 [Jan. 1997]: 16–23).

5. Fuller, “How It Came About,” 473.

6. *Ibid.*