

I. Archaeology of a Vision

1987. We come late upon the scene. A tremendous shape mushrooms up before us, as indifferent to our gaze as it is to its frozen surroundings. It's as if something once happened here, some cosmic drama played upon this stage, and we are left only the quiet shell of that event. The forces once in play here seem to have played themselves out. We bundle our overcoats to us and huddle before yet another bitter blast of the Montréal winter wind.

This thing, this bare Expo Dome, seems an alien form here. It stands out and it stands totally alone, somewhere – or when – it shouldn't be. It is an *American* thing, out of place; unmoved by the deep Québec cold, by the iced-up St. Lawrence River, by the sharp-edged skyline of Montréal above and beyond the ice. The dome seems to hold its own like an architectural island on its own island, Ile St. Hélène, a shape that has kept its shape despite all the elements – fire, rain, snow, ice and wind – that time and disuse have hurled against it.

We move closer to the strange thing, into its black lace shadow. We circle round, then duck under the protecting fence through a low furrow made by many 'illegal' visitors over the years. The tourists and architecture buffs, the Bucky Fuller freaks, the curious, the daring or the merely foolhardy, the teenaged beer drinkers and furtive lovers and graffiti artists; many have made this pilgrimage before us, too many leaving their rubbish. We enter the dome compound cautiously, keeping an eye on the broken chunks of concrete, the twisted lengths of metal beams and jagged protusions everywhere underfoot.

My guide, Robert Duchesnay, knows every nook and cranny of this ruin. To muse over ruins is customarily considered a Romantic pursuit, but for that sensibility Nature itself was the idyll. You made a word-picture, or painted a landscape, and to it you added an artificial ruin to heighten the sense of Nature's dominance over Man's puny handiwork. But the Expo Dome plays on this sensibility in an unusual way. It is not the past, or Nature in the raw, that is lost or to be found in this place. Rather it is the *romance of the future* that draws people here, the glimpse of a future that once looked bright and hopeful, and now has grown dim and darkly clouded. It evokes nostalgia, yes, but not for the past or the pastoral scene. What we feel instead is something like nostalgia for a lost future: *Once upon a might-have-been ...*

Anyway, this particular 'ruin' stoutly defies decrepitude. It has been called 'the most beautiful building-completely-destroyed-by-fire in the world.' Some, including its architect, Buckminster Fuller, have even declared that they prefer the ruin to the once-functional building. And it's easy to see why.

The structure itself is so elegant; the vast, mathematically precise sphere so overwhelming; the feel of the thing at once so massive and so lightsome, that it defies

being taken in at a single glance. Literary critic Hugh Kenner once noted that it looks much smaller from the outside, since on a sphere (or two-thirds sphere, in this case) the external dimensions retreat from the eye. We're not used to looking at buildings like this; it is outside our usual 'frameworks.' Inside, it is clearly huge – very clearly, since almost nothing stands between you and the enormous 20-storey vault overhead.

For only this much of his achievement was Fuller grudgingly honored by the American Institute of Architects, that he enclosed more space with less stuff than anybody else in human history. Although he eventually built even larger structures, the Expo Dome still dwarfs the Pantheon, St. Peter's, the Taj Mahal, the Hagia Sofia, and all history's other famous domes. Today it simply stands there – vast, purposeless, and yet somehow its own justification. Filmmakers have repeatedly been drawn to it: Robert Altman shot his frigidly futurist *Quintet* under it in 1978; it appears in passing in Stuart Cooper's moody, mechanically symmetrical thriller, *The Disappearance*. The films glance toward the image, but say not a word about it.

2005. Montréal, which inherited the Dome after Expo '67, has never quite figured out what to do with it. Slow-growing pressure at last prompted some clean-up and refurbishing in the early 1990s. In 1995, the Centennial of Fuller's birth, the Dome was grandly rechristened 'Biosphere' and turned into an environmental education center. It contains a facility for monitoring water-quality in the St. Lawrence River, standing lonely sentinel-duty for science while commerce and industry continue to poison the Seaway. Despite Montréal's lack of interest, the Dome has, over the years, become something of a symbol for the city. For many of us, I suspect, it also serves as a kind of symbol for the 1960s, a lost era of hope which seemed to peak in 1967 when the Mohawk high-steel workers were erecting the Expo Dome – *without scaffolding*, believe it or not – and the Summer of Love was about to get off the ground in San Francisco. The romance of the future still had power then. People were actually getting ready to walk on the moon. Optimism and energy coupled with science and engineering seemed as if they might very well guarantee a limitless horizon for human 'progress.'

All that is gone now, of course.³ But if we are to understand this strange webwork, this time capsule to futures past, we must take account of the way in which it came to be: first, spun in Fuller's own mind; then built as the United States Pavillion for the 1967 Expo; later destroyed through negligence and misadventure; and finally, left standing ever since as a kind of open enigma, a challenge to the imaginations of all who happen upon it.

Yankee Ingenuity

R. Buckminster Fuller (1895-1983) has been characterized as a mathematician, architect, inventor, philosopher, and even a prophet. He has also been caricatured as a wide-eyed technocrat with big plans for the industrialization of practically everything. Toward the end of his life, a listing of his various honorary degrees made his the longest entry in *Who's Who*. All of these classifications notwithstanding, Fuller tended to refer to himself as a "comprehensive anticipatory designer,"⁴ which was his own way of summing up five decades of unparalleled Yankee ingenuity.⁵

It is also fair to understand 'Bucky' Fuller, as he liked to be called, as a poet or an

artist – that is, a maker of images.⁶ And he was a poet not mainly for the volleys of verse he took to publishing in his later years, each line a “mental mouthful” as he put it, but rather because the great part of his life’s work was to propose what may well be the grandest pattern metaphor of our time: *Nature’s coordinate system*, a triangulated matrix which has turned out to be an astonishingly accurate model for natural structures – like the posthumously-named ‘Buckminsterfullerene’ (C₆₀), *Science* magazine’s 1991 “Molecule of the Year.”⁷

Fuller called his geometry “synergetics,” or the “geometry of thinking.” Its basic approach is “the exploratory strategy of starting with the whole ...” From such thinking about housing in an integral way, for example, he came up with the startling innovations for which he is justly famous – geodesic domes and the ‘Dymaxion Dwelling Machine’ most notable among them. Fuller’s geometry is founded upon triangles and tetrahedra – as is all the carbon chemistry of organic life – and leaves behind the square, cubical and gridiron forms which still saddle most conventional architecture. Indeed, Fuller’s synergetics goes well beyond architecture altogether, into the very structure of matter and the shape-shiftings of the cosmos at large. So it helps to consider his “geometry of thinking” not as some abstract mathematical formalism, but as an artistic exploration, an adventure of the creative imagination. No one ever took Einstein’s relativity more to heart than Fuller; everything is constitutively related to everything else. Bucky Fuller’s achievement was to articulate these very basic relationships of matter and energy in meticulous detail, and to find practical applications everywhere, most of which are still well ahead of their time. His innovations span so many fields of science and engineering so adroitly that Marshall McLuhan may not have been too far off the mark in dubbing Fuller “the Leonardo da Vinci of our time.”⁸

Over the course of 1995, those who knew him or were touched by him in life celebrated the Centennial of Bucky’s birth. Since then, the nostalgic Goodman/Simon *American Masters* PBS production *Thinking Out Loud* has offered rare and touching glimpses of both the public and private man from half a century of documentary footage, and J. Baldwin has commenced in his *Bucky Works* a long overdue reexamination of the continuing utility of Fuller’s many technical innovations for coming to grips with present-day ecological and economic dilemmas. But lacking the magic of Bucky’s personality, his legend has otherwise quickly faded from the media spotlight. Architecture critic Allan Temko is probably right to call the Expo Dome the apogee of Fuller’s career; in 1967, Bucky was incontestably the most famous structural designer in the world. An entire generation has since come of age who have never felt for themselves the magnetic influence of Buckminster Fuller, or tested the strength his ideas against their own experience.

The best chance for newcomers to ‘meet’ Bucky has probably been provided by D. W. Jacob’s remarkably comprehensive one-man play, “R. Buckminster Fuller: The History (and Mystery) of the Universe,” performed memorably by Ron Campbell first at the San Diego Repertory Theater in the Spring of 2000, and then to multiple return engagements in San Francisco and elsewhere ever since. Next best would have to be the very extensive traveling museum exhibit, *Your Private Sky*, mounted by the Zürich Museum für Gestaltung which toured Europe in 2000 and Asia in 2001. The vast photographic tome compiled from this exhibition by Joachim Krause and Claude Lichtenstein delves deeply back into the Fuller archives to bring to light many previously unremarked aspects of Fuller’s early formative years.⁹

Of course the past decade has divulged a rich harvest of fresh and sometimes astonishing discoveries associated with Carbon 60 and its molecular family, the 'fullerenes.' In April 1996, for instance, marine geochemists Luann Becker and Jeffrey Bada detailed in *Science* their findings that naturally occurring 'Buckyballs' – hollow soccer-balls of soot, each made of 60 or 70 carbon atoms – were created by a meteor the size of Mt. Everest crashing into the Ontario region nearly two billion years ago, and appear to contain gases from a distant star that expired long before our own sun even ignited – making these the oldest complex molecules so far found on Earth.¹⁰ Fuller would have been delighted by such findings. There are no native sources of carbon on planet Earth, yet all organic lifeforms are carbon-based. Where did it (and eventually all of us) come from? We are all made of star-stuff, Bucky used to say; in light of today's evidence, he might have added that the death of such stars (particularly in their red giant phase, when main sequence stars like our Sun become prolific producers of carbon) may well have helped kick-start the carbon chemistry of life on this planet. But such new findings reflect only the most indirect credit on their namesake.

What is the measure of a man? His ideas and accomplishments? Of course. His friends, followers, influence? Yes, all of these. But above all, and in a sense *beneath* all these there is something else – a character, a style of thinking, a certain spirit, a way of being. In this respect, Buckminster Fuller was a man distinguished by the depth of his determination to think for himself, to resolutely go his own way in both words and works. In 1927, at about age 33, Fuller decided to stop speaking until he could rid himself of received opinions, untested assumptions and speech patterns not his own. When he resumed speaking a year later, the results were altogether unusual. Thinking, he had decided, meant weeding out irrelevancies. Henceforward, he would speak only of matters he had found to be true in his own experience, or of things which could be tested by experiment. Not surprisingly, both his new way of speaking and the style of thought behind it were unique and, to many people, quite incomprehensible.

For Fuller, the sun does not rise or set, there is no up and no down (on our spheroidal Earth), and there are no solids or straight lines in all Universe. If you had just heard or read about such assertions, which aim to carry Einstein's postulates to their logical term, you might well come away scratching your head. But when Fuller began to *show* people what he was talking and thinking about by building elegant models – Try it! Hands on! See for yourself! – his approach became strikingly clear. Buckminster Fuller had hit upon an entirely novel way not only of expressing himself, but of relating to the Universe at large. Indeed, he devoted his life to finding ways for people to work *with* Nature's principles, rather than building, dwelling and thinking against or in spite of the patterned dynamisms of the natural world. On his deathbed Albert Einstein said he found himself facing Ernest Haeckel's famous question, which may yet turn out to be crucial for our own ecologically-stricken era: "Is the universe friendly?" In 1971, Ezra Pound called Bucky Fuller "friend of the universe," an epithet which suggests that here at least is a man whose life and work offers a resounding "Yes!" to that query.¹¹

Fuller saw in technology the human mind at work finding ways to do "more and more with less and less," using Nature's bounty without abusing her limits. Early on, he made a distinction between 'Brain,' which he saw mainly as a mechanism for storing particular, special-case experiences and 'Mind,' which he saw as the capacity to learn, to discover the generalized principles which connect such experiences and make them

meaningful. 'Brain' is physical and local; 'Mind' metaphysical and, he would insist, universal. Just so, he came to consider all of his inventions and buildings as no more than models, graphic demonstrations of what could be done by a mind in tune with Nature. And for those of us who come after Fuller, his works offer the possibility of an alternative science, a way of exploring natural and human possibilities for 'livingry,' as he called it, rather than weaponry.

With Fuller's models in their hands, Einstein's universe is intuitively and spontaneously comprehensible by children. All children are born geniuses, he used to say, until parents and schools teach them to distrust their own innate sense of the truth. And it is in those children that Fuller's hope for the future resided, perhaps because he managed to preserve in his own way of looking at things so many of those richly creative characteristics we associate with children: unflagging curiosity coupled with delight in the unknown and unexpected. The motto for his magnum opus, *Synergetics*, was "Dare to be naive." Not the whole picture, to be sure, but an important aspect of a man who claimed that he was not a genius, but rather only an average human being with "a terrific bundle of experiences."

American Dreamers

There are many ways of assessing Bucky Fuller's legacy. But picking about in the charred ruins of the once-glittering American Pavilion for Expo '67, it doesn't take long to realize one is also picking one's way through some other remnants as well, torn cast-offs from the very fabric of the American dream itself. To see how deeply the texture of Fuller's own vision is woven into the many-layered historical tapestry of the American dream, we must first try to sort the living strands from tangled skein of lost hopes and shredded dreams it has become, and then try to stitch those strands together in some semblance of the original pattern. Betsy Ross had it easy ...

Once there really was an American dream. No, not the materialistic one with two of everything: two kids in the big house, two cars in the garage, two pets in the yard, two bank accounts, and maybe two marriages before you get it all right. The original American dream was part of the spirit of this place, this land, this Turtle Island as the Iroquois call North America. Its homeplace was not the Great Plains or the desert Southwest or the Rocky Mountains or the California goldfields. It belonged to New England, or to be precise, to the Northeast woodlands more or less centered on today's New England. It was alive there when the white settlers first arrived from England, it was kept alive for a couple of hundred years by remarkable individuals and even more remarkable communities and utopian experiments. Its spirit was that of a bold, pragmatic, reflective, self-reliant people who found themselves in a rich land and attuned themselves to its possibilities for new sorts of human dwelling. It has perhaps never been quite so clearly articulated as by Ralph Waldo Emerson:

We have listened too long to the courtly muses of Europe. The spirit of the American freeman is already suspected to be timid, imitative, tame ... What is the remedy? ... If the single man plant himself indomitably on his instincts, and there abide, the huge world will come round to him. Patience, – patience; with the shades of all the good and great for company; and for solace the perspective of your own infinite life; and for work the study and communication of

*principles, the making those instincts prevalent, the conversion of the world ... We will walk on our own feet; we will work with our own hands; we will speak our own minds. A nation of men will for the first time exist, because each believes himself inspired by the Divine Soul which also inspires all men.*¹³

“Life alone avails, not the having lived,” declared Emerson, casting off the shell of European conventions as he sought a new birth of the soul appropriate to a new land. As a thinker, it is entirely appropriate to situate Fuller within the tradition of American transcendentalism best exemplified by Emerson, who happens to have been a close friend of Fuller’s famous great-aunt, Margaret Fuller. He himself referred to her glittering nineteenth-century circle of New England literati as “the small coterie of thinkers who formed the original nucleus of an American culture.”¹⁴ With all the optimism of his transcendentalist predecessors, Bucky would steadfastly maintain that humans were meant to be a success on this planet – and all the apparent evidence in the world to the contrary would never dissuade him from this conviction; our immediate prospects, in his phrase, were “utopia, or oblivion.” Work against Nature’s principles, he would say, and you will find yourself thwarted at every turn. Work *with* Nature’s principles, and the Universe itself pitches in to help. There is at work in every human endeavor a larger mind, something like the very soul of Nature. Harking back to this ancient tradition of the living Universe or *anima mundi*, Emerson spoke of the ‘Over-Soul,’ and Fuller of the intellectual integrity of Universe. The following passage is vintage Emerson, but presages Fuller in both spirit and substance:

*Beauty rests on necessities. The line of beauty is the result of perfect economy. The cell of the bee is built at that angle which gives the most strength with the least wax; the bone or quill of the bird gives the most alar strength. ‘It is the purgation of superfluities,’ said Michel Angelo. There is not a particle to spare in natural structures.*¹⁵

Like Emerson, Fuller chose to rely primarily on his own experiences in order to discover the intimate secrets and principles by which the Universe cohered. He once wrote:

I did not set out to design a house that hung from a pole or to manufacture a new type of automobile, invent a new system of map projection, develop geodesic domes or Energetic Geometry. I started with the Universe – as an organization of regenerative principles frequently manifest as energy systems of which all our experiences, and possible experiences, are only local instances. I could have ended up with a pair of flying slippers.

Here the analogy with Leonardo da Vinci is just about irresistible.¹⁶ Lacking (and professing to scorn) the classical book-learning that ruled the academy of his time, the West’s first supremely inventive “disciple of experience” also resolved to put himself directly under the tutelage of Nature, for reasons similar to Bucky’s:

*Although human ingenuity makes various inventions, corresponding by various machines to the same end, it will never discover any inventions more beautiful, more appropriate or more direct than nature, because in her inventions nothing is lacking and nothing superfluous.*¹⁷

As for Bucky, there seems to be something in the New England air that fosters a non-conformist individuality; it’s practically an indigenous tradition. Fuller was raised in this atmosphere, in Massachusetts, and spent much time in later life on his family

estate on Bear Island, Maine. However radical his ideas, he always dressed like a strait-laced New England Protestant minister making his rounds – of ‘Spaceship Earth.’¹⁸ He imbibed his independent spirit early, even managing the dubious distinction of being the only person ever to be expelled from Harvard University *twice*. (In his last years, he held the Charles Eliot Norton Chair of Poetry at Harvard, perhaps a unique experience for a Harvard maverick.) But the complex of notions that guided his work – that nature is the best teacher, that technology moves toward a refined simplicity of life, that industry should meet basic human needs like housing, and that such pragmatic concerns are not in the least divorced from spirituality – seems to be basic to the New England temperament.

From the early seventeenth century onward, villages in New England and environs exhibited what has sometimes been called ‘Yankee communism,’ a spirit of corporate co-partnership carried over to this day in communal barn-raising amongst the Pennsylvania Dutch, for example. It did not escape the eye of the ever-perspicacious Alexis de Tocqueville, who observed in 1831:

The Americans ... show with complacency how an enlightened regard for themselves constantly prompts them to assist one another and inclines them willingly to sacrifice a portion of their time and property to the welfare of the state.¹⁹ ... The free institutions which the inhabitants of the United States possess, and the political rights of which they make so much use, remind every citizen ... that he lives in society. They every instant impress upon his mind the notion that it is the duty as well as the interest of men to make themselves useful to their fellow creatures.²⁰

Citing such passages, Hector Garcia writes in the present day of the urgent need for America to rediscover this sense of ‘cultural complementarity’: “It seems that the origin of American excellence might have been more about cooperation than competition.”²¹ Six decades earlier, Dartmouth historian and jurist Eugen Rosenstock-Huessy had seen just this: “‘Co-operate’ is the most striking phrase of the American vocabulary. For concrete co-operation, not for abstract philosophy, reason was given to men ... [the] co-operative reasoning of the men of good will.”²² Unfortunately, for America as for human nature generally, this communitarian spirit seems more likely to emerge in times of disaster – in the aftermath of the 1992 Loma Prieta earthquake in San Francisco, for instance, or in the extraordinary self-sacrifice of so many New Yorkers during the 9/11 terrorist attack – than in times of ease, when squabbling and petty competition seem to be the rule. Lately, historian Andrew Delbanco of Columbia University has reinforced not only the outlines of the original American Dream – he sees it as a focus on the transcendent (God, Nation) which manifests itself in practical, community-based cooperative action – but also just how far indeed twentieth-century America had strayed from those early ideals.²³

Many of the cooperative traits of such self-sufficient villages were carried to their logical term by the famed Shaker communities: ‘Hands to Work, Hearts to God.’ The Shakers continued and in some aspects intensified the communal early American pattern, itself really a vestigial form of the medieval European village, although elsewhere such communalism was already giving way – either to the rough-and-ready pioneer mentality, or to the cities as commercial centers. Right through the nineteenth century and into the twentieth, each Shaker village was more or less self-sufficient in normal times; yet

all participated in a larger pattern of shared faith, institutions, and techniques.

After he and Nathaniel Hawthorne visited a Shaker Village in the Nashua River Valley during a walking tour in the Autumn of 1842, Emerson was moved to compare the 'socialist' Shaker community to a single great 'capitalist.' (Before Marx, one might make such comparisons.) He wrote:

*They have fifteen hundred acres here, a tract of woodland in Ashburnham, and a sheep pasture somewhere else, enough to supply the wants of the two hundred souls in this family. They are in many ways an interesting society, but at present have an additional importance as an experiment of socialism ... What improvement is made is made forever; this capitalist is old and never dies, his subsistence was long ago secured, and he has gone on now for long scores of years in adding easily compound interests to his stock. Moreover, this settlement is of great value in the heart of the country as a model-farm, in the absence of rural nobility ... Here are improvements invented, or adopted from other Shaker communities, which the neighboring farmers see and copy ...*²⁴

Indeed, the Shakers never shared the bias against technology of the Amish or many another early American utopian experiment. For the Shakers, the Kingdom had already come. They considered their foundress, the redoubtable Ann Lee, to have been the Second Coming. If they were to live up to their vision, they had to set about creating the conditions of Paradise right here on Earth, in their own communities. Each settlement was to be an example to the rest of the world: "No one will find a spiritual heaven," they used to say, "until they first create an earthly heaven."²⁵

What would a redeemed human life look like here and now? Coming from all walks of life, they knew the unsettling effects of unbridled sexuality, and voluntarily adopted a celibate lifestyle. Yet there were always children aplenty in the Shaker villages, and fine schools for them, since the Shakers started some of the first American orphanages. Knowing from experience the evils of greed, they agreed upon communal ownership of lands and goods. Having once felt the sting of persecution, they advocated religious toleration a full century before the word 'pluralism' became fashionable. And by undertaking collectively the day-to-day chores of maintaining their communities, they hit upon some remarkably practical improvements. They were among the first to package and market seeds, herbs and spices. And they invented, among other utilities, the flat broom, the circular saw, the washing machine and the clothespin: all labor-saving devices designed to free people from onerous, repetitive tasks.

Their simple, hand-tooled furniture is now by far the most valued body of American antiques. The Shaker way of life made tangible many of the ideals – thrift, efficiency, industry, inventiveness – that helped build the young American nation. The works they left behind share a certain aesthetic not only with Danish modern furniture, but, indeed, with many of Fuller's own artifacts: absolutely no frills, a functionalist minimalism which results in a spare and simple elegance of form. There is one very big difference. Shaker artifacts were all hand-made, and therefore each unique. Indeed, some scholars say that the Shaker way of life succumbed to industrialization and mass production, which eventually cut into the market for their products. And Fuller, more than Hart Crane or any other American, not only built with industrial tools but saw himself as the epic poet of industrialization. It's a refraction we shall examine a little later.

Although 'artificially' re-opened for newcomers in 1999, the original Shaker Covenant was intentionally closed in the late 1980s by the last few elderly Shaker Sisters, who have since passed away. The end for this living focus of the American dream came, says scholar Leonard Mendelsohn, neither from their celibacy nor from industrialization. It came, says he, because America is no longer capable of facing up to its own ideals, let alone sustaining them.²⁶

Yet even in their passing, the Shakers passed on something of that dream and those ideals. It's still there; you feel it whenever you visit the quiet, simple buildings and manicured park-like grounds of one of their model settlements. Here there are no ruins, only the well-preserved shell of a former life, a tidy utopian vision frozen in time and in place, perhaps awaiting a new realization. Here you see the remnants of a vision that was more or less fully realized, and that lived out its natural life-span.

The neglected, burned-out, rubble-strewn shell of Bucky Fuller's Expo Dome, on the other hand, would strike the latter-day visitor in exactly the opposite way. Here, too, was a utopian vision, but of what? Where did such a powerful idea come from, and why has it all been left to fall apart? What was intended to happen here? And what would Fuller's vision look like, had it too been lived out and fully realized? Before even trying to answer, we need to excavate the American Dream just a bit further, in order to discern the peculiar way it informs and intersects Fuller's own vision.

The Original Vision

The American dream has always been to some extent an immigrant's vision – of economic opportunity, of political liberation, of back-to-the-Earth rusticity, or religious millenarianism. But through this lens, we see only what the newcomers *sought*; the other face of privations suffered in their homelands. Yet the American dream was also what the new arrivals *found* when they arrived on these American shores. Indeed, if we permit ourselves to dig down a little deeper in our speculative archaeology, there seems to be a very special ingredient rooted in the native soil, a unique spirituality to this bio-region, a mindscape that also belongs to this landscape, part and parcel of the distinct seasons and mountains and changeful winds, and part also of the human character these all tend to mold.

In this sense, Emerson and Thoreau in their self-reliance, as well as the Shakers in their Kingdom-already-come, were themselves only inheritors of the original American dream. The early Americans were English or European men and women who found themselves in a rich and abundant land, which they took to be a gift from God. In this attitude, they were not alone. And from this angle, it may well be a very old dream indeed, from an ancient people who never acted without taking into account the effects of their every action down to the seventh generation.

Partly *because* Bucky rarely took note of cultural context, it falls to us to wrestle with the implications of the fact that he built his Expo Dome on Indian land. The Northeastern Woodlands sheltered native inhabitants of two distinct language families: the Algonkian speakers were mainly nomadic hunters; their less numerous Iroquoian neighbors were both hunters and agriculturalists, living in settled communities, and visiting the St. Lawrence and Montréal areas only as distant hunting grounds.

The Shakers, as it happened, first settled in the Mohawk River valley, near present-



Montréal Expo Dome (© Robert Duchesnay,1986.)

day Albany, NY. Only a few *months* before the Shakers arrived, this area had been at the heart of the Mohawk Nation, Elder Brothers of the Iroquois Confederacy. The first Shaker meeting houses even echoed the Mohawk longhouse architecturally, with its open dancing floor and separate entrances for men and for women. And when the Shakers danced there the ecstatic, shuffling 'Bruin' dances that became their namesake, they recorded that 'old Indian Spirits' sometimes spoke to them. What did the early Shakers hear in those old Indian voices?

We may only speculate, but surely they knew they were setting up their community on Mohawk lands. The Iroquois Confederacy embodied not only the first disarmament treaty ('burying the hatchet' under the white roots of the great Tree of Peace) but the first genuinely United Nations in human history (which in turn became the prototype for the division of powers in the eventual US Government). The Iroquois League would

have been the immigrants' first encounter with a fully functional democratic society, coming as they all did from the old and despotic monarchies of Europe. If these 'savages' can do it, Benjamin Franklin once wrote, why can't we? He, Madison and Jefferson made sure that the Iroquois Chiefs were consulted in drafting the original US Articles of Confederation, modeled on their Confederacy, and the Iroquois were the first to recognize the new American nation even after it took a more centralized, federal turn.

The Shakers would have seen what was left of the fertile farmlands and orchards the native peoples had left behind when the newly federalized Americans turned upon them. This may indeed be the saddest part of our archaeology of the American dream buried in Bucky Fuller's work. In 1779, George Washington ordered General Sullivan and his 3,000 soldiers to totally destroy the villages of the Iroquois Confederacy. It was one of the most shameful episodes in American history – from our angle, no less than an attempted murder of the native American dream – and deserves a moment of our reflection. Historian Page Smith writes:

Sullivan's campaign was the most ruthless application of a scorched-earth policy in American history. It bears comparison with Sherman's march to the sea or the search-and-destroy missions of American soldiers in the Vietnam war. The Iroquois Confederacy was the most advanced Indian federation in the New World. It had made a territory that embraced the central quarter of New York State into an area of flourishing farms with well-cultivated fields and orchards and sturdy houses. Indeed, I believe it could be argued that the Iroquois had carried cooperative agriculture far beyond anything that the white settlers had achieved. In little more than a month all of this had been wiped out, the work of several generations of loving attention to the soil ...²⁷

But the dream did not die. It metamorphosed, as we have seen. So what did it mean to begin with?

The interpreter of dreams may be allowed a certain latitude not permitted the historian ... What we glimpse from the very beginning is a dream or, if you like, an ideal of *cooperation*. Even the most 'rugged' individualist cannot stand alone for long through the harsh winters of the Northeast Atlantic region. The European model had always been one of *dependence* upon a central authority: *mon-archy*, one leader, one principle. The rhetoric of the emerging American republic was a cry for *independence* from all that, autonomy. But the reality of their lives puts the rhetoric in perspective. The picture we see is one of bold individualists indeed capable of standing alone in their thinking, but inevitably drawn into natural alliances with one another: the Shakers trading with the new American polity, giving and taking selectively; Emerson standing by the younger Thoreau in the latter's civil disobedience and rejection of society's constraints and conventions. Solzhenitsyn's hermit posture was not a native New England stance; and indeed, he could hardly have maintained his absolute privacy without the aid of his neighbors. Even at the very start, when John Winthrop and the Puritans came over the Atlantic in 1630 to found the Massachusetts Bay colony, their biblical 'city upon a hill,' they saw that the pilgrims from the Mayflower voyage nearly a decade earlier had already made common cause with the indigenous inhabitants. The only native American religious holiday, still celebrated by Americans and Canadians alike, purportedly commemorates the harvest they celebrated together so long ago. The Pequods of Massachusetts were eventually exterminated by the colonists in the War of

1637. The neighboring Mohawks, though literally decimated to one-tenth of their original numbers, did however survive with most of their customs, tribal structures, language, and lore intact.

Our creator made all of life with nothing lacking. All we humans are required to do is waste no life and be grateful daily to all life. And so we gather all our minds into one and send our greetings and our thanksgiving to our maker, our creator.

So ends one version of the famous Thanksgiving Address of the Iroquois League, the proper ceremonial opening for any important occasion, which often takes the better part of an hour to perform.²⁸ The pilgrims didn't really 'originate' Thanksgiving at their Plymouth colony in December, 1621. They merely 'observed' in their own way the harvest festival and thanksgiving ceremony of the native inhabitants, along with the appropriate native foods – wild turkeys, pumpkins, cranberries – which enabled them to survive that first long, cold winter.

Mark the main themes: Life – not just as a given, but as *gift*. The clear mind is the thankful mind, say the Mohawk elders. And Nature – not just as raw material for 'development,' but as *the way things are*. Waste not, want not. Finally, interdependence – the rule of Life for people, indeed, but in reciprocity with the entire natural world. When Christians say grace, they thank God for the food. But the Indians always thanked the food, too. The traditional Thanksgiving Address scales the entire Creation – Earth, water, animals, trees, edible plants, birds, the sun, moon and stars – before addressing its final thanks to the Creator. When the Europeans departed for the 'New' World, some came by reason of faith alone, others put their faith in reason alone, but all had voluntarily cut themselves off from their roots in their own native soil. Yet once they arrived, they found a living network of vital relationships already awaiting them on 'New England' soil.

Long before this first meeting of Europeans and Native Americans, the peoples of this continent had known, and recognized, a great genius – a figure quite as remarkable in his own context as a Jesus of Nazareth, or a Gandhi, or a Martin Luther King in theirs. His own name was Deganawidah, but it is sacrilegious to call him by name. He is remembered only as the Peacemaker. He was a Huron, who came unarmed to Mohawk territory (mainly encompassed by the central quarter of today's New York State). Together with his disciple Aionwahtha (Hiawatha), he began a process which eventually brought peace to five, and later six, tribes long at war with one another: Seneca, Onondaga, Cayuga, Mohawk, Oneida and, later, Tuscarora. Out of his vision, steadfast courage and remarkable political innovations, the Iroquois Confederacy was born. Scholars and native peoples disagree as to whether this all happened in the century or two before the white settlers arrived, or several centuries earlier. But in any case, and contrary to the many Western preconceptions which Robert Vachon's extensive and intensive intercultural work convincingly debunks, the Confederacy was neither an empire nor a nation of warriors.²⁹ The Peacemaker outlined a set of *kinship* relations, a great extended family of peoples – Clan Mothers, Elder and Younger Brothers, etc., – each with different languages and customs, who nonetheless agreed to meet in peaceful council at a Central Fire, rather than imposing a single 'kingship' regime of the sort familiar to Europeans.

What the Peacemaker taught instead was **KAYANEREKOWA**, the Great Law of

Peace, and the people who lived according to his teachings came to call themselves the People of the Great Peace. They still do. Even today, in the face of all sorts of political, military, religious, and social pressures from the modern American and Canadian nation-states, the Confederacy lives on. And here, I submit, we finally touch ground. Here may well be the oldest stratum, the foundation level of the American dream we've been trying to excavate.

During the final decade of the twentieth century, the Mohawk communities straddling the borderlands between the United States and Canada were torn apart by bitter conflicts, both internal and external. So-called Warriors supported by gambling money and cigarette smuggling were vying for power with the Band Council, supported by fat paychecks from the Canadian government. An armed stand-off with the Canadian army in 1991 went on for weeks. The traditional people, still the majority, were caught in the middle. Weary of all the fighting, and frustrated that the Iroquois Great Law of Peace has been so blatantly flouted, some of them determined to return to their ancient homeland, the 'Land of Flint' on the Mohawk River near Albany, NY. It is called the 'Clean Pot' movement, implying a fresh start. Some kind soul has deeded a parcel of their original land back to them, so that such a move at last looks feasible, although the politics and logistics may yet turn out to be a nightmare.³⁰ Iroquois people have always been a dream culture, following their dreams even if they sometimes seem to defy the logic of the daytime world. Once upon a time, you recall, they built a dome in Montréal for Bucky Fuller. And today some of the elders are dreaming of a return to their homeland and traditional ways, a visionary feat which would have to span the highest idealism with the most down-to-earth practicality. Once again, they are building without scaffolding. Maybe there will always be American dreamers, even if America at the turn of a new millennium remains oblivious to them.

The Way Things Are

By now you may well be wondering what all this ancient history has to do with Bucky Fuller and his domes. Patience; we are nearly done digging. There is more at stake here than collective amnesia about the original American dream, or the bald fact that it was the Mohawks who actually built Bucky Fuller's Expo Dome in 1967 on Ile St. Hélène, itself once Mohawk land. At the deepest level, what is at stake is a matter of principle. Indeed, the Iroquois Great Law calls into question the very way we conceive of 'laws' or 'principles' of Nature.

Westerners tend to think of 'law' as something man-made, a principle or set of principles discovered by the human mind and imposed upon the things of the natural world or, indeed, upon human nature itself. The Iroquois Great Law, by contrast, is a recognition of the Law *already there* in Nature herself, an attunement to the 'Way' things are – the original plan of the Creator. Westerners, moreover, tend to see the natural world as fundamentally flawed, or incomplete, or even sinful; it is merely raw material to be developed to human ends. The Iroquois, in concert with many traditional societies the world over, have always seen Nature as pretty good and complete just as it stands: an order, a peace and harmony to be preserved.

This, then, is the first Law, to which human life, customs and institutions ought to be attuned. It is a way of Life already 'written' into the patterned energies and dynamisms

A Tale of Two Museums

The American dream of 'cooperation' between different peoples leading to a new polity, always in tune with the reciprocating 'way of Nature,' has been articulated in many ways. Largely, the holistic vision we have discerned at its root has been displaced by monistic and dualistic models – the ideal of cooperative 'confederacy' displaced in America by compulsory federalism with its 'melting pot' ideal, and in Canada by competitive 'provincialism' with its own ideal of a cultural 'mosaic.' (Which may be why each polity is so susceptible to its contrary: bland conformity in Canada, cut-throat competition in America.) And just where might we expect to find these two visions, the mosaic and the melting pot, enshrined and architecturally embodied? In the 'national' museums, of course ...

The Smithsonian in Washington, DC: a hodge-podge of buildings designed in different epochs for different purposes. A place for everything, everything in its place. 'Civilization' resides in the artifacts from mainstream Western sources, duly preserved in the arts museums, as well as in the aerospace museum where even the 'future' is enshrined. All other cultures, even native American until very recently, have been lumped together in the 'Natural' History museum next to the stuffed animals and dinosaur skeletons. One big melting pot.

Canada's Museum of Civilization in Ottawa: one design concept, by a single architect – flowing tiers of stone set into the curving river, the flow of time as organizing principle. 'Civilization' here is the upsweep of evolution from the Grand Hall of native artifacts through the many waves of immigrants – Basque whalers, French settlers, English soldiers – all the way up to a nineteenth century Main Street. You follow the pattern by climbing the stairs, but nobody's allowed to peek into the attic where the future must be hidden. Unfinished mosaic.

Surprisingly, something else has recently surfaced, within yet beyond both images: Bill Reid's huge Black Canoe jam-packed with shape-shifting spirits from Haida Gwaii today faces the Smithsonian from the Canadian Chancery, while its white plaster cast now adorns the Museum of Civilization. The feat of bilocation is telling. Each mythic form – Bear, Wolf, Eagle, Beaver, etc. – strains to pull the boat in its own direction, yet each is pulled inescapably into the medley of other forms. Raven is at the helm and his way, 'so I have heard,' is to go through endless transformations.

Maybe it's time we North Americans found a new metaphor for ourselves: whether figured as a mosaic or a melting pot, it's beginning to look like we're all in the same boat.

of the natural world: all things 'are' always and only in intimate and constitutive *relation* with one another, i.e., *interdependence*. All that is needful for a fully human life has already been given. The way to realize this law in human affairs, it follows, is neither by compulsion nor competition, but by cooperation – with one another, with Nature herself, and with the spiritual power, *manitou*, surging through her every fiber.

The Shakers no doubt felt and lived it too, in their millennial Christian way. For them, as for most medieval and renaissance thinkers, the Book of God's Word (the Bible) and the Book of God's Works (Nature), were ultimately the same Book. "I never feel closer to God," said Eldress Gertrude Soule about a month before she died in 1988, "than when I am walking in these forests and fields and pastures." Emerson and Thoreau, too, borrowed a leaf from that Book when they spoke of communion with the very 'Soul' of Nature. In 'Worship,' a late essay from his *Conduct of Life*, Emerson took to task any soft-headed moralists who ignored this connection between Spirit and Nature:

The true meaning of spiritual is real; that law which executes itself, which works without means, and which cannot be conceived as not existing. I find the omnipresence and the almightiness in the reaction of every atom in Nature. I can best indicate by examples those reactions by which every part of Nature replies to the purpose of the actor, – beneficently to the good, penally to the bad. Let us replace sentimentalism by realism, and dare to uncover those simple and terrible laws which, be they seen or unseen, pervade and govern.³¹

And for Buckminster Fuller, the single word which sums much of this up is *synergy*. It is a Greek word, which basically means 'working together.' Now that every other business in the Western world seems to have adopted 'synergy' as its middle name – a tendency which hit a new low when Mobil Oil trade-marked its latest multi-additive gasoline concoction *Synergy*[®] – it may be worthwhile to glance back at the word's venerable origins. It is a theological word which retained currency in Fuller's time solely in chemistry, for the unique behaviors of compounds. Yet St. Paul had used it in his Epistles (Rom. 8:28; I Cor. 3:9) to illustrate not a static but a dynamic conception of human, divine and cosmic cooperation:

I did the planting, Apollos the watering, but God made things grow ... We are fellow workers (synergoi)³² with God; you are God's farm, God's building.

In his modern and scientific context, Fuller uses the word 'synergy' to describe "the behavior of whole systems unpredictable from the behavior of their parts taken separately."³³ He liked to claim it is the only word in English which describes this unique behavior of whole systems, always something greater than the sum of their component parts. By his time – after the mechanized slaughter of the First World War and the killer flu that followed in its wake – religion and politics no longer seemed to be viable arenas for utopian visionaries. They had pretty much yielded the field to science and technology. Fuller, very much a man of his historical moment in this respect, considered all political and religious systems parochial and atavistic. Yet he was their inheritor. He inherited above all the belief in open-ended progress – itself part of the age-old Western quest to transcend this world – in its streamlined, evolutionary twentieth-century form. Like Francis Bacon, he put his faith in the empirical methods of science. Following the utilitarians, he sought the greatest good for the greatest number

of his fellow humans ... though he did not find this 'good' in terms of the greatest pleasure (Bentham, Mill), nor the greatest financial gain (Adam Smith, Ricardo, Keynes), like so many of his contemporaries.

And he made a great discovery. He was not the first to see it, to be sure, but I would say he was the first to see clearly these metaphysical patterns which govern physical changes through the hi-tech lenses provided by modern science. How did he find it? The novelty of his approach was the very personal way he took Einstein's relativity as a license to re-envision the entire universe of human experience. Instead of a static Newtonian world of separate 'things' whose normal state was to stay pretty much the way they always were, Fuller saw the universe as a dynamic complex of interconnected energy events: a *fluxus quo*. Can we discern *the form the flux takes*?

In mapping the structures of this dynamic universe, Bucky deliberately chose, moreover, not to follow the piecemeal, hyperspecialized approach of most science in his day. Fuller's understanding of himself as a scientist took its inspiration from Sir Arthur Eddington's definition of science as the systematic attempt to set in order the facts of experience. In this sense, despite his very up-to-date scientific information, he was more like a natural philosopher in the nineteenth-century English (Lyell, Darwin) or American (Emerson, William James) mold, still seeking to embrace the Whole. Indeed, one is reminded of Galileo's early formulation of the scientist's quest to 'read' the Book of Nature in a comprehensive way:

*Philosophy is written in that very large book that is continually opened before our eyes (I mean the universe), but which is not understood unless one first studies the language and knows the characters in which it is written. The language of that book is mathematical and the characters are triangles, circles, and other geometric figures.*³⁴

In a sense, Buckminster Fuller claimed nothing less than to have read that Book, in its original language of images. *Synergetics* is his exegesis of it, a *grammar* of this language of images. What Bucky did uncover – or 'discover,' if you suppose as he did that he was the first to do so – was a matrix of interconnections which also turned out to be the matrix for all these transformations: "Nature's Coordinate System," he boldly called it. Here is Fuller recounting his own quest in *Utopia or Oblivion*:

*In 1917, I found myself asserting that I didn't think nature had a department of chemistry, a department of mathematics, a department of physics, and a department of biology and had to have meetings of department heads in order to decide what to do when you drop your stone in the water. Universe, i.e. nature, obviously knows just what to do, and everything seemed beautifully coordinate. The lily pads did just what they should do, and the fish did just what they should do. Everything went sublimely, smoothly. So I thought that nature probably had one coordinate system and probably one most economical arithmetical and geometric system with which to interaccount all transactions and transformations. And I thought also that it was preposterous when I was told that real models are not employed in advanced science, because science was able to deal with nature by use of completely unmodelable mathematical abstractions. I could not credit that universe suddenly went abstract at some micro-level of investigation, wherefore you had to deal entirely with abstract-formula, unmodelable mathematics ... I thought then that if we could find nature's own coordinate system we would understand the models and would be able to develop much higher exploratory and application capability. I felt that if we ever found nature's coordinate system, it would be very simple and always rational.*³⁵